

ERASMUS UNIVERSITY ROTTERDAM

Erasmus school of economics

Decreasing strategic information avoidance regarding negative externalities in market settings

Name student: Tim 's Gravemade

Student ID number: 471908

Supervisor: Wen Qiang Toh

Second assessor: Max Coveney

Date final version: 15-08-2022

The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

## **Abstract**

Some recent literature has shown that consumers might be strategically avoiding information regarding negative externalities in market settings. This would allow consumers to buy products that in some ways are in opposition to their moral standards, without feelings of guilt. Given the potential implications for problems such as climate change and child labor, this study aims to determine whether activation of moral standards can decrease strategic information avoidance in market settings. Based on the existing literature, an online experiment was performed with the aim of, a) replicating existing results to confirm the existence of information avoidance in market settings, and b) extending on the existing literature by assessing the effect of moral activation on information avoidance in market settings. Within the scope of this research no information avoidance was found to be present. Therefore, no definitive conclusions can be drawn regarding the effect of moral activation on information avoidance in market settings.

## Table of Contents

1. Introduction .....	4
2. Theoretical framework .....	6
2.1. Information avoidance related to negative externalities in market settings .....	6
2.2. Reducing strategic information avoidance .....	8
3. Methodology.....	9
3.1. Data and sample selection .....	9
3.2. Experimental design .....	11
3.2.1. Activating moral standards.....	11
3.2.2. Simulating a market setting.....	12
3.2.3. Incentive scheme .....	12
3.2.4. Treatment and control groups .....	13
3.3. Analyses.....	13
4. Results .....	14
4.1. Balance test .....	14
4.2. Replicating previous results .....	15
4.3. The effect of moral activation .....	17
5. Discussion and conclusion .....	17
5.1. Key findings and implications.....	17
5.2. Limitations .....	19
5.3. Conclusion .....	20
References .....	22
Appendix .....	25

## 1. Introduction

Information is intangible but valuable, nonetheless. A fact known to humans for some time as portrait when Sir Francis Bacon (1597) wrote: “knowledge itself is power”. So, it follows only naturally that at some point, though at first it was largely ignored, information would be treated as an economic good. This was pioneered by Jacob Marschak (1959) and George Stigler (1961) who first incorporated information in their theoretical models. Later, when writing on the implications he deemed detrimental to the reorientation of economic theory, Arrow (1973) wrote: “that information or signals have economic value and therefore are worth acquiring and transmitting even at some cost”. Move ahead half a century in time and ‘at some cost’ seems to be an understatement. In the age of big data information seems to be priceless to the tech giants of our day. For the ordinary human the way they interact with information has changed dramatically as well. Not only has there been a vast increase in the amount of information available, but it has also become increasingly more easily accessible. We can check the weather forecast with just one press of our fingers on our mobile phone. Or just as easily we can check exactly where there is traffic and what the expected delay will be. Not only has information become easy to access through technological advancements. Innovations in the medical field allow us to more quickly and with less effort obtain information about our physical well-being. Take for example the COVID-19 virus. Within minutes and with relative ease we can quite accurately tell if we are infected with the virus, using a self-test. To the average human being a lot of information has become relatively cheap and readily available.

The, by now, standard economic models predict that people are willing to obtain all this information as it will help them make better decisions. At least, any free information that is valid, should not be actively avoided. However, a growing literature is starting to present an opposing view. Namely, under certain circumstances people are actively avoiding information, even if this information could potentially help them make better decisions. Golman, Hagmann and Loewenstein (2017) give two broad categories as reasons for information avoidance: hedonically driven and strategically driven. A strategically driven motivation refers to people avoiding information as a commitment device as they believe it will beneficially influence their own or others future behavior (Golman, Hagmann & Loewenstein, 2017). Hedonically driven information avoidance stems from the fact that information can enter the utility function directly (Golman, Hagmann & Loewenstein, 2017).

Within each of these categories there is a range of sub-categories as well, making information avoidance a rather broad topic of research with many different applications. Though each of these categories is relevant within the information age, this paper will more specifically focus on strategically driven information avoidance concerning negative externalities in market settings.

That people use strategic information avoidance to make selfish choices when negative externalities to others are involved is demonstrated by a range of experiments, including that of Dana, Weber and Kuang (2005). In these experiments participants actively avoided information on the possible negative effect their decision had on other participants to choose the option most favorable to themselves, which they would not have done when provided with full information. Moreover, Momsen and Ohndorf (2020) provide evidence that this type of information avoidance persists in market settings, and by using CO2 emissions as external costs specifically show that it has potential implications for one of world's biggest challenges, climate change. It is reasonable to expect similar implications for pressing issues such as child labor in the clothing industry or animal cruelty in the food industry. Though there exists convincing evidence that information avoidance is likely used strategically to choose selfishly in market transactions that bear negative externalities to third parties, the current literature lacks research into the possibilities of reducing it. Given the weight of the related issues such as climate change, it is of great relevance to investigate if the tendency to strategically avoid information can be influenced. Especially in this time where information is becoming more easily accessible and could potentially be used to combat these issues. This brings us to the research question of this paper:

*Can the activation of an individual's moral standards reduce information avoidance related to negative externalities in market settings?*

To answer this question, it was necessary to create a setting in which information avoidance was present in the first place. It was therefore decided to attempt to replicate the initial results of Momsen and Ohndorf (2020), by running an experiment similar in set up to theirs. This was done in the form of an online experiment, existing of either a moral or neutral recall exercise, followed by 4 consecutive buying decisions to simulate a market setting. The information on the externalities of each buying decision is either fully provided or is hidden and can be revealed at a small cost. In the remainder of this paper, the relevant existing

literature will first be discussed and used to formulate the expected hypotheses for the experiment. Then the methodology will be presented, including the data and sample selection, the experimental design, and the analyses plan. This is followed by the results of the analyses. Finally, the results are discussed as well as the limitations of this research.

## **2. Theoretical framework**

### **2.1. Information avoidance related to negative externalities in market settings**

As previously mentioned, information avoidance can stem from many different motivations. Within the motivations presented by Golman, Hagmann and Loewenstein (2017), information avoidance related to negative externalities would fall within the broad category of strategic information avoidance and the sub-category of abdicating responsibility. Golman, Hagmann and Loewenstein (2017) define this sub-category as avoiding information to maintain plausible deniability, thereby being able to perform questionable behavior without the feelings of guilt had they known the information. For example, Woolley and Risen (2015) show, using an experiment, that participants who want to order a dessert, but fear caloric information might discourage them, are more likely to ask for a menu without the caloric information displayed. In relation to negative externalities this would mean that individuals avoid information to behave in their self-interest while maintaining the belief that they did not act immorally. Or to use a term dubbed by Dana, Weber and Kuang (2005): avoiding information on negative externalities creates the moral “wobble room” that allows individuals to act more selfishly.

To see if information was indeed avoided to exploit moral “wobble room” Dana, Weber and Kuang (2005) ran an experiment that consisted of a modified dictator game. In their version of the dictator game, participants were offered a binary choice between an equal and unequal distribution of wealth. The baseline dictator game offered participants the choice between option A, in which they received \$6, and the other player received \$1, and option B, in which they received \$5, and the other player received \$5 dollar as well. In this instance 74% of the dictators choose fairly (option B). In a manipulation of the baseline game, the participants were still offered a choice between option A, with a payout of \$6, and option B, with a payout of \$5. However, now the pay-off for the other player was randomly decided, either the payouts could remain the same as in the baseline game, or the payouts were flipped (i.e., \$1 and \$5, respectively, or \$5 and \$1, respectively). More importantly, this information

was initially hidden to the dictator, but could be revealed at no cost. For those dictators that were offered the choice with the same payoffs as in the baseline game, only 37% now choose option B. This behavior was shown even though dictators could reveal that they were effectively making the same decision as in the baseline game, at no cost. In this game choosing option A clearly has a negative external cost to the other player, namely they receive \$1 instead of \$5. The results of this experiment show that people might actively avoid information to choose selfishly while maintaining plausible deniability. Such strategic information avoidance in dictator games has been confirmed by a range of subsequent studies (Feiler, 2014; Grossman, 2014; Grossman and van der Weele, 2017; Larson and Capra, 2009; Van der Weele, 2013).

It remains of course questionable how generalizable the result of the initial experiment of Dana, Weber and Kuang (2005) are. Specifically, it is doubtful that the dictator game is representative of real markets, as some studies find no evidence of information avoidance in altered settings (Felgendreher, 2018; Lind et al., 2019). Considering these doubts, Momsen and Ohndorf (2020) present an experiment that simulates a market in a laboratory setting. In their experiment, the participants make repeated binary purchase decisions. The externalities of their choices can either positively or negatively affect real world CO<sub>2</sub> emissions through altering an amount invested in carbon offsets. The control group in their experiment receives full information about the externalities associated with each of the two choices. The first treatment group does not initially receive the information about the externalities but is able to obtain the information at no cost. The second treatment group also receives no initial information and can obtain the information at a small, near negligible cost. The results for the first treatment group show no evidence that information was willfully ignored. This initially seems to be in line with the idea that the results obtained by Dana, Weber and Kuang (2005) could be driven by the specific context presented by the dictator game. However, for the second treatment group they do find that information is strategically avoided. Momsen and Ohndorf (2020) propose as an explanation for these results that, even though the costs of revealing the externalities are very small, they do present an additional excuse to avoid information.

The above presented literature provides some convincing evidence that strategic information avoidance likely takes place in market settings. As the current study is interested

in reducing information avoidance in market settings it is necessary to first create a setting in which information avoidance is present. Of the existing experiments, that of Momsen and Ohndorf (2020) is arguably the most representative of a real market. It was therefore chosen to try and replicate their results by running a similar experiment. Based on their results, the first hypothesis can be stated as follows:

*H1: The share of self-serving choices, for decisions with conflicting interests, is significantly larger under costly information revealing than under full information*

## **2.2. Reducing strategic information avoidance**

Though research on the occurrence of information avoidance has become quite extensive over the years, research on reducing information avoidance remains largely unexplored. Some initial evidence showing that it is possible to reduce information avoidance is presented by Howell and Shepperd (2012), albeit information avoidance driven by hedonic reasons rather than strategically driven. More specifically they investigate if the avoidance of medical-screening feedback can be reduced using affirmation. They find that participants who received an affirmation exercise are less likely to avoid information on their medical examination outcomes. Research on decreasing information avoidance in market settings remains, however, completely novel.

An area where research has been performed is in trying to increase moral behavior using moral priming. In the existing literature moral priming has been applied in several different settings, giving mixed results. Young and Durwin (2013) found a positive effect of priming moral realism on the willingness to donate to a charity. Osswald et al. (2010) took a slightly different approach by using different moral prototypes that were associated with different moral behavior. Their results showed that the priming of a certain prototype can activate the related moral behavior. In yet a different setting, Leavitt, Zhu, and Aquino (2016) showed that participants had an increased concern for external stakeholders if they were primed with moral self-conceptions. Finally, Welsh and Ordóñez (2014) applied conscious and subconscious activation of moral standards in a more general way and found that both conscious and subconscious activation of moral standards lowered the likelihood of unethical behavior on a self-assessment. On the other hand, Meier et al. (2021) tried to reduce the bystander effect by priming the concept of responsibility but found no significant results. Similarly, Niesten et al. (2017) found no significant reduction of over-reporting tendencies for



ADHD symptoms after presenting participants with moral reminders. Overall, the effectiveness of moral priming on increasing moral behavior seems to be dependent on the type of behavior as well the exact method of priming that is used.

To understand how moral priming might influence information avoidance in a market setting, it is important to understand the mechanisms behind information avoidance. Momsen and Ohndorf (2020) addressed the theory of cognitive dissonance as the main explanation for information avoidance in a market setting. In this case people avoid information that is potentially incongruent with their pro-social self-image to reduce dissonance. It could be that for individuals whose moral standards have been activated, information avoidance is no longer experienced as sufficient self-deception to reduce cognitive dissonance. That would mean that the activation of moral standards will reduce self-serving information avoidance. However, based on the results of d'Adda et al. (2018) A different outcome could also be expected. In their experiment they offered participants information on how air conditioning usage influences greenhouse gas emissions. They find that information avoidance increased with those experimental treatments that induced a sense of moral obligation to act upon the information. If the activation of moral standards induces a similar sense of moral obligation to act upon information related to external costs of products, it would mean that the activation of moral standards increases self-serving information avoidance in a market setting. Depending on which of the above effects dominates it can be expected that moral activation either increases or decreases information avoidance. Therefore, the following two opposing hypotheses can be formulated:

***H2a:** Under costly information revealing, self-serving information avoidance is less likely when moral standards are activated.*

***H2b:** Under costly information revealing, self-serving information avoidance is more likely when moral standards are activated.*

### **3. Methodology**

#### **3.1. Data and sample selection**

The data for this research was collected using an online survey. This survey included an experiment as well as some demographic questions. The researcher used a combination of online and offline sampling. This meant the researcher recruited participants from his own

network through social media and walked around the Erasmus University campus to recruit random students to participate. The social media platforms used were LinkedIn, Facebook, and WhatsApp. In total 185 people responded to the survey. However, after deleting all invalid and incomplete responses, a final sample of 91 respondents remained. While some incomplete responses quit after completing a considerable amount of the survey, most incomplete responses had quit at the first question. This could possibly be due to the first question being an open question and requiring at least some amount of effort. The question asked participants to either describe one or multiple of their favorite taste preferences, or one or multiple of the moral standards that were most important to them, depending on what treatment group they were in.

The mean age of the sample was 27.6 with a minimum age of 17 and a maximum age of 65. The gender of the sample was evenly distributed with 51% being female and 47% being male. Two of the participants identified as non-binary. Most of the sample had followed a bachelor's degree as their highest education (65%), and everyone had at least followed high school. 29% of the sample had also followed a master's degree. Those who identified as liberal were in the majority within this sample with 68%, while only 3% identified as conservative. Similarly, only 3% found the issue of climate change "not very important", while the remainder of the sample was evenly distributed over "quite important" and "very important". The full summary statistics of the sample are presented in table 1.

**Table 1.** Summary statistics

	N	Mean	SD	Min	Max
Age	91	27.637	12.231	17	65
Gender					
Female	46	0.505			
Male	43	0.473			
Non-binary	2	0.022			
Education					
Elementary school	0	0.000			
High school	6	0.066			
Bachelor's degree	59	0.648			
Master's degree	26	0.286			
Political identity					
Conservative	3	0.033			
Neutral	26	0.286			
Liberal	62	0.681			
Climate importance					
Very important	44	0.484			
Quite important	44	0.484			
Not very important	3	0.033			
Not at all important	0	0.000			

*Notes:* The table shows the number of observations and the mean value for the sample across all demographics. For age the standard deviation, and the minimum and maximum value are additionally shown. For the other variables these values are excluded as they are all binary variables. Education shows the highest level of education participants have attained or are currently following.

## 3.2. Experimental design

### 3.2.1. Activating moral standards

To ensure participants were either neutrally or morally activated, one of the methods from the research of Welsh and Ordóñez (2014) was used. It was chosen to use one of their methods as it was already shown that their moral activation exercises had a negative effect on unethical behavior likelihood, albeit in a different setting than this research. In their

research, both conscious and unconscious activation exercises were used. For this research only the conscious activation exercise was used as it reduced the unethical behavior likelihood the most. The exact intervention can be found in the appendix.

### **3.2.2. Simulating a market setting**

To see how information avoidance in market settings is influenced by the activation of moral standards, it was necessary to create a situation in which information avoidance was present in the first place. To do this a similar market setting was created to that of Momsen and Ohndorf (2020). In this setting the participants had to make consecutive binary buying decision between the virtual products A and B. While the price of each good was known, the external cost of each good was differently presented, depending on what group the participant was in. For the full information group, the external cost of each product was immediately and freely presented. For the costly information group, it was only shown what the external costs could be, but not which cost belonged to what product. This information was initially hidden but could be revealed for a small, near negligible, cost of one cent.

The original experiment by Momsen and Ohndorf (2020) consisted of 24 buying decisions. They categorized these buying decisions according to the price difference and the external cost difference between the two goods. However, information avoidance was not present in all these categories. In fact, they found that information avoidance only occurred in one of these categories. As stated before, the current research is focused on reducing information avoidance. Therefore, only the category of Momsen and Ohndorf (2020) where information avoidance was present is relevant. It was therefore chosen to only include the buying decisions of this category, which amounted to a total of four buying decisions. An additional benefit of only using the buying decisions of this category was that it helped keep the length of the experiment to a minimum and increase participant retention.

### **3.2.3. Incentive scheme**

The following incentive scheme was designed to ensure participants thought carefully about their decisions and to make the experiment more closely resemble a market setting. Participants were informed that their potential payout was determined by the decisions they made. Namely, their potential payout was equal to 40 euro minus the amount they spend on each product. They were also informed that their decisions would determine the potential amount that got invested in CO2 compensation payments. Namely, the potential amount

invested in CO2 payments was equal to 20 euro minus the amount of external costs that were linked to the products they had chosen in each round. For budgetary reasons only one of the participants received their payout in euros, which was determined by a random draw. Consequently, the decisions of this participant also determined how much got invested into CO2 compensation payments. Investments into CO2 compensation were made in the form of a donation to the Founders Pledge Climate Change Fund. The donation was made through the following website: <https://funds.effectivealtruism.org/donate/organizations>.

### 3.2.4. Treatment and control groups

To be able to test all hypotheses, participants were randomly assigned to one of the following treatment and control groups:

**Table 2.** Treatments

Group	Recall exercise	Information	Participants
Control	Neutral	Full information	25
Treatment 1	Neutral	Costly information	37
Treatment 2	Moral	Costly information	29

### 3.3. Analyses

Hypothesis 1, which stated that the share of self-serving choices, for decisions with conflicting interests, is significantly larger under costly information revealing than under full information, is aimed at confirming the presence of information avoidance by replicating the results of Momsen and Ohndorf (2020). To make the results across the studies comparable, the same analysis is used. This analysis entailed a comparison in the share of selfish choices between the control group, who received full information and the neutral recall exercise, and treatment group 1, for whom information was costly and who also received the neutral recall exercise. A two-sided chi square test was used to test if the difference in the fraction of selfish choices was significant.

For hypothesis 2a, which states that under costly information revealing, self-serving information avoidance is less likely when moral standards are activated, and for hypothesis 2b, which states the opposite, there are two indicators that have been considered. Similar as

to hypothesis 1, a comparison can be made in the share of selfish choices. For hypothesis 2a and 2b this comparison was made between treatment group 1 and treatment group 2. For both these groups information is costly, however, group 2 receives a moral recall exercise compared to the neutral recall exercise of group 1. Since both groups have the option to reveal information, an additional comparison can be made in the share of information revealed. As with hypothesis 1, a two-sided chi square test was used to test if the differences in the fractions of selfish choices and of information revealed was significant.

## **4. Results**

### **4.1. Balance test**

In table 3 the demographic differences across the different treatment groups are represented. For randomization to be successful differences need to be small and statistically insignificant. Using one way analysis of variance (ANOVA) the  $p$ -values of the differences across the treatment groups are computed. From these  $p$ -values it can be concluded that only within the stance on climate change there are significant differences in means for at least one of the treatment groups. A possible explanation for the highly significant difference in this demographic is that participants may have found it difficult to distinguish between the “quite important” and “very important” answer options.

Even though stance on climate change is the only demographic where at least one of the groups differs significantly, there are some demographics where differences in absolute terms are still quite substantial. For age and gender, we can see that the control group and treatment group 2 are very similar. Treatment group 1 on the other hand has a higher mean age and the ratio of females to males seems to be inverted. For education it seems that treatment group 1 and 2 are very similar, whereas the control group has a substantially higher share of participants with bachelor’s degree and a lower share of participants with a master’s degree. Given these results, it can be assumed that randomization was not entirely successful. This could in turn influence the internal validity of the following results.

**Table 3.** ANOVA test for mean differences across treatment groups

	Full info/Neutral	Costly/Neutral	Costly/Moral	<i>p</i> -value
Age	26.040	29.784	26.276	0.386
Gender				
Female	0.560	0.432	0.552	0.522
Male	0.400	0.568	0.414	0.329
Non-binary	0.040	0.000	0.035	0.501
Education				
High school	0.080	0.054	0.069	0.921
Bachelor's degree	0.800	0.595	0.586	0.180
Master's degree	0.120	0.351	0.345	0.100
Political identity				
Conservative	0.040	0.027	0.035	0.961
Neutral	0.280	0.324	0.241	0.765
Liberal	0.680	0.649	0.724	0.813
Climate importance				
Very important	0.240	0.487	0.690	0.004***
Quite important	0.760	0.432	0.310	0.003***
Not very important	0.000	0.081	0.000	0.106
Observations	25	37	29	

*Notes:* The differences across the treatment groups are presented for all demographics. In the final column the *p*-value for these differences is shown, which was computed using ANOVA. A significant difference, with a *p*-value below 0.1 indicates that at least one of the groups has a different mean.

\**p* < 0.1, \*\**p* < 0.05, \*\*\**p* < 0.01

## 4.2. Replicating previous results

First, hypotheses 1 is assessed. Hypothesis 1 states that the share of self-serving choices, for decisions with conflicting interests, is significantly larger under costly information revealing than under full information. For hypothesis 1 this means a comparison of selfish choices between the control group and treatment group 1. In table 4 the aggregated shares of selfish choices for decisions with conflicting interest are presented. Some participants chose not to

reveal information on externalities while still choosing the product that was more expensive to them, i.e., they reduce their own payoff without knowing what effect it will have on the donation. Therefore, these non-rationalizable choices were excluded from the analysis. The aggregate share of selfish choices in the control group was 0.20 while this was slightly higher in treatment group 1 with 0.23. This result is in line with the first hypothesis, suggesting that participants avoid information to make more selfish choices. However, apart from being numerically small, the result was also found to be statistically insignificant when using the chi square test,  $\chi^2(1) = 0.19, p = 0.66$ . Therefore, these results do not present evidence in support of hypothesis 1.

What remains interesting is to compare the share of selfish choices found in this research to those found in the original research of Momsen and Ohndorf (2020). When looking at the buying decisions in their research that resembled those in this research, they found that the full information group had an aggregate share of selfish choices of 0.35 compared to a share of 0.20 in this research. For the costly information group, they found a share of 0.50 compared to a share of 0.23 in this research. Apart from not finding the same significant differences between the full information and the costly information group, there is another important difference between the results. Namely, for both groups the share of selfish choices is considerably smaller in the present research compared to the research of Momsen and Ohndorf (2020). This indicates that the participants overall behaved less selfishly in this research. Altogether, the results of Momsen and Ohndorf (2020) could not be replicated.

**Table 4.**  $\chi^2$ -test: aggregate share of selfish choices in conflict situations (excluding non-rationalizable choices)

	(1) Control group	(2) Treatment group 1
Selfish	0.200	0.234
<i>p</i> -value		0.660

*Notes:* The share of selfish choices are presented for the control group in column 1 and for treatment group 1 in column 2. The *p*-value in column 2 refers to the difference between the two shares in selfish choices.

\**p* < 0.1, \*\**p* < 0.05, \*\*\**p* < 0.01



### 4.3. The effect of moral activation

Hypothesis 2a and 2b will now be assessed. Hypothesis 2a states that under costly information revealing, self-serving information avoidance is less likely when moral standards are activated, while hypothesis 2b states the opposite (i.e., self-serving information avoidance is more likely). Table 5 presents both the share of selfish choices as well as the share of information revealed for treatment group 1 and treatment group 2. Treatment group 1, who did not receive the moral recall exercise, had a lower aggregate share of selfish choices of 0.23 compared to the aggregate share of 0.32 for treatment group 2, who did receive the moral recall exercise. Moreover, the aggregate share of information revealed was higher for treatment group 1 with 0.83 compared to the aggregate share of 0.78 for treatment group 2. Taken together, these results seem to indicate that the activation moral standards increase the tendency of participants to avoid information to make more selfish choices. This would be in line with hypothesis 2b. However, using the chi square test, the difference in the share of selfish choices was found to be statistically insignificant,  $\chi^2(1) = 0.96$ ,  $p = 0.33$ . Similarly, the difference in the share of information revealed was also found to be statistically insignificant when using the chi square test,  $\chi^2(1) = 0.47$ ,  $p = 0.49$ . Overall, these results do not present conclusive evidence in support of either hypothesis 2a or hypothesis 2b.

**Table 5.**  $\chi^2$ -test: aggregate share of selfish choices in conflict situations and of information revealed (excluding non-rationalizable choices)

	(1) Treatment group 1	(2) Treatment group 2	(3) <i>p</i> -value
Selfish choices	0.234	0.315	0.327
Information revealed	0.828	0.778	0.492

*Notes:* The share of selfish choices and of information revealed are presented for treatment group 1 in column 1 and for treatment group 2 in column 2. The *p*-values in column 3 refer to the differences in fractions between the two treatment groups.

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## 5. Discussion and conclusion

### 5.1. Key findings and implications

This research set out to replicate the results of Momsen and Ohndorf (2020) to show the presence of self-serving information avoidance in a market setting, and to expand upon existing literature by trying to answer the question whether the activation of an individual's

moral standards can reduce information avoidance related to negative externalities in market settings. The collected data suggests that activating moral standards does not decrease the tendency to avoid information to make more selfish choices. In fact, the results show that under costly information revealing, the share of selfish choices increased, and the share of information revealed decreased for participants that were morally activated. However, these results were statistically insignificant. Moreover, the data sheds doubt on whether information avoidance in market settings takes place in the first place. Namely, the share of selfish choices increases only marginally between the full information group and the costly information group, and the difference is altogether statistically insignificant. This is inconsistent with the findings of Momsen and Ohndorf (2020).

Since the experiment of this research was very similar in set up to that of Momsen and Ohndorf (2020), the fact that their results could not be replicated makes the robustness of their findings at least somewhat questionable. Therefore, strategic information avoidance might potentially not play a big role in consumers their decisions to buy products that in some ways are in opposition to their moral standards. However, another possible explanation for the discrepancy in the results could be the difference in the incentive scheme. Where in the research of Momsen and Ohndorf (2020) every participant received a payout, in this research a payout was only awarded to one participant through a random draw. Since payout is not guaranteed in this research, it could feel less like a loss for the participants to choose in favor of the donation. An important indication that the incentive scheme did indeed have an influence, is the overall lower share of selfish choices in the current research compared to that of Momsen and Ohndorf (2020). Moreover, both studies had a similar sample size per treatment group that can be considered relatively small. This could have implications for both power and external validity, potentially contributing to the discrepancy in results.

Considering that, within the scope of this research, information avoidance was not present to begin with, it would not have been possible to find a reduction in information avoidance due to the activation moral standards. Nonetheless, it is interesting that moral activation had a positive, though statistically insignificant, effect on the self-serving information avoidance. This could be an indication that the activation of moral standards does indeed create a sense of moral obligation to act upon the information on externalities, as hypothesized based on the findings of d'Adda et al. (2018). For policy makers looking to

reduce information avoidance in market settings, it would be valuable information to know that interventions that induce a sense of moral obligation to act upon information will likely achieve to the opposite effect. However, as the results are statistically insignificant, they provide merely an indication rather than convincing evidence to support this notion.

## **5.2. Limitations**

Given the time and resource restrictions, this research was subject a set of limitations. The first of these limitations being the incentive scheme. Rather than paying all the subjects the payout they earned during the experiment, it was chosen to translate only one participant's outcome into an actual payout by means of a random draw. As already mentioned, this could play a role in explaining the difference between the results of this research and that of Momsen and Ohndorf (2020). Namely, by not guaranteeing a payout the participants will probably not have seen the money in the buying decisions as theirs. Therefore, choosing for the option in favor on the donation might feel less like a loss, making it easier to choose altruistically.

A second limitation of this research stems from the online nature of the experiment. Being an online an experiment meant it needed to be short enough to make sure participants were able to keep their concentration and finish it completely. For this reason, it was opted not to include a manipulation check for the moral activation exercise. By including a similar self-assessment of a fictitious moral scenario as used by Welsh and Ordóñez (2014), it would have been possible to conclude if the moral recall exercise at least got the same results as Welsh and Ordóñez (2014). This would have shed some light on whether the moral activation exercise was able to activate moral standards in the first place. Moreover, even without the manipulation check, the online experiment was probably a lot more complex than the average online survey. This could have meant that not all participants completely understood the tasks in the experiment.

Thirdly, the sample size played a limiting factor in this research. Ideally, this research would have had a fourth treatment group. This group would have received full information on the buying decisions along with the moral recall exercise. By using this additional treatment group, a more complete picture of the effect of the activation of moral standards could have been created. For example, it would have been interesting to see if the effect of

activating moral standards would be in the same direction and of similar size under full information as under costly information. To increase the chance of amassing a large enough sample, with sufficient participants in each treatment group it was opted not to include this fourth treatment group. Without this fourth treatment group a similar sample size per treatment group as Momsen and Ohndorf (2020) was obtained, which was still relatively small. This could lead to low statistical power, meaning the results are more likely to be distorted by random error.

Finally, a note should be made on the internal and external validity on this research. As said before, the randomization across the treatment groups was not entirely successful. Since most participants who dropped out did so at the first question, before demographics were collected, it was not possible to investigate if selective attrition played a role in the imbalance. The imbalance in the treatment groups could potentially skew the results and therefore lower the internal validity of this research. The external validity of this research is relatively low. The main method used in finding participants was convenience sampling. This means that a large part of the sample are acquaintances of the researcher, making the sample by no means representative of the larger population. Therefore, care should be taken when trying to generalize the results.

### **5.3. Conclusion**

In conclusion, no evidence was found to support that information avoidance related to negative externalities in market settings can be reduced by activating an individual's moral standards, which was the main research question of this paper. However, within the scope of this research, strategic information avoidance did not seem present in the first place, meaning that the results of Momsen and Ohndorf (2020) could not be replicated. This would make it hard to find a reduction in information avoidance due to the moral activation treatment. Regardless, the results show the opposite effect, within this sample the activation of moral standards increased self-serving information avoidance. Since these results were statistically insignificant, they can only serve as an indication that the activation of moral standards creates a sense of moral obligation to act upon information and thereby increase information avoidance, which would coincide with the results of d'Adda et al. (2018). As this knowledge could serve as an important input for policy makers looking to reduce information avoidance

in market settings, future research could focus on providing more clarity on the issue. Most importantly, however, future research should try to replicate the results of Momsen and Ohndorf (2020) in a more robust way, to provide more evidence on whether information avoidance in market settings takes place in the first place. The limitations of this research could serve as important inputs for such future research. More specifically, an appropriate incentive scheme and a sufficient sample size should be considered.

## References

- Arrow, K. J. (1973). Information and economic behavior.
- Bacon, F. (1597). *Meditationes sacrae*. Londini. : Excusum impensis Humfredi Hooper.
- d'Adda, G., Gao, Y., Golman, R., & Tavoni, M. (2018). It's so hot in here: Information avoidance, moral wiggle room, and high air conditioning usage.
- Dana, J., Weber, R. A., & Kuang, J. X. (2007). Exploiting moral wiggle room: experiments demonstrating an illusory preference for fairness. *Economic Theory*, 33(1), 67-80.
- Feiler, L. (2014). Testing models of information avoidance with binary choice dictator games. *Journal of Economic Psychology*, 45, 253-267.
- Felgendreher, S. (2018). Do consumers choose to stay ignorant? The role of information in the purchase of ethically certified products.
- Golman, R., Hagmann, D., & Loewenstein, G. (2017). Information avoidance. *Journal of Economic Literature*, 55(1), 96-135.
- Grossman, Z. (2014). Strategic ignorance and the robustness of social preferences. *Management Science*, 60(11), 2659-2665.
- Grossman, Z., & Van Der Weele, J. J. (2017). Self-image and willful ignorance in social decisions. *Journal of the European Economic Association*, 15(1), 173-217.
- Howell, J. L., & Shepperd, J. A. (2012). Reducing information avoidance through affirmation. *Psychological science*, 23(2), 141-145.
- Larson, T., & Capra, C. M. (2009). Exploiting moral wiggle room: Illusory preference for fairness? A comment. *Judgment and decision Making*, 4(6), 467.

Leavitt, K., Zhu, L., & Aquino, K. (2016). Good without knowing it: Subtle contextual cues can activate moral identity and reshape moral intuition. *Journal of Business Ethics, 137*(4), 785-800.

Lind, J. T., Nyborg, K., & Pauls, A. (2019). Save the planet or close your eyes? Testing strategic ignorance in a charity context. *Ecological Economics, 161*, 9-19.

Marschak, J. (1959). Remarks on the Economics of Information.

Meier, B. P., Kitchens, M. B., Kupersmith, D. E., Houck, K. E., Keyton, N. S., Petrasic, S. E., & Zweizig, D. N. (2021). Be responsible? Priming “responsibility” and the bystander effect in a field setting. *Experimental Psychology, 68*(2), 107.

Momsen, K., & Ohndorf, M. (2020). When do people exploit moral wiggle room? An experimental analysis of information avoidance in a market setup. *Ecological Economics, 169*, 106479.

Niesten, I. J., Müller, W., Merckelbach, H., Dandachi-FitzGerald, B., & Jelicic, M. (2017). Moral reminders do not reduce symptom over-reporting tendencies. *Psychological Injury and law, 10*(4), 368-384.

Osswald, S., Greitemeyer, T., Fischer, P., & Frey, D. (2010). Moral prototypes and moral behavior: Specific effects on emotional precursors of moral behavior and on moral behavior by the activation of moral prototypes. *European Journal of Social Psychology, 40*(6), 1078-1094.

Stigler, G. J. (1961). The economics of information. *Journal of political economy, 69*(3), 213-225.

Van der Weele, J. J. (2014). Inconvenient truths: Determinants of strategic ignorance in moral dilemmas. *Available at SSRN 2247288*.

Woolley, K., & Risen, J. L. (2018). Closing your eyes to follow your heart: Avoiding information to protect a strong intuitive preference. *Journal of personality and social psychology, 114*(2),

230.

Young, L., & Durwin, A. J. (2013). Moral realism as moral motivation: The impact of meta-ethics on everyday decision-making. *Journal of Experimental Social Psychology, 49*(2), 302-306.



## Appendix

### Neutral recall exercise

Please mention one or multiple of your taste preferences (e.g., a favourite food or movie) and describe what you like about them.

Please use a minimum of 20 words.

Word count: 0

### Moral recall exercise

Please mention one or multiple moral standards that are very important to you (e.g., moral, religious, or personal values) and describe why they are important to you.

Please use a minimum of 20 words.

Word count: 0

## Introduction experiment

In the next section you will be making four buying decisions. These decisions directly determine how much money you will be able to win and how much money the researcher will donate to the Founders Pledge Climate Change Fund.

There is a chance that your actions in this experiment will become real. A random draw will determine whose experiment will be translated into real world actions.

Therefore, **please read the instructions on the following page carefully.**

- I understand that my potential payment also depends on how well I have understood the instructions

## Game explanation – Full information

You have a total of 40 euro to spend. With these 40 euros you will be asked to make four buying decision. Each decision is between two equal goods. The products only differ in their price and how much they influence the amount that gets donated to the Founders Pledge Climate Change Fund.

Initially the researcher will donate an amount of 20 euro to the Founders Pledge Climate Change Fund. However, based on what products you decide to buy during this experiment this amount can become less.

The price of the products as well as the reduction each product has on the donation is shown as you make the decisions.

After the four buying decisions you will be shown how much you have spent in total. The amount you are left with is what you will be able to win.

### Game explanation – Costly information

You have a total of 40 euro to spend. With these 40 euros you will be asked to make four buying decision. Each decision is between two equal goods. The products only differ in their price and how much they influence the amount that gets donated to Founders Pledge Climate Change Fund.

Initially the researcher will donate an amount of 20 euro to Founders Pledge Climate Change Fund. However, based on what products you decide to buy during this experiment this amount can become less.

The price of the products is immediately shown. However, the reduction each product has on the donation of the researcher is hidden. You will be able to reveal this information for a cost of 10 cents.

After the four buying decisions you will be shown how much you have spent in total. The amount you are left with is what you will be able to win.

### Example buying decision – Full information

Please choose the product you want to buy.

Product A:

- Costs you €6
- Decreases the donation of the researcher to Founders Pledge Climate Change Fund by €2

Product B:

- Costs you €7
- Decreases the donation of the researcher to Founders Pledge Climate Change Fund by €4

Product A

Product B

Example buying decision (reveal information) – Costly information

You will be choosing between product A and Product B.

Product A: Costs you €6

Product B: Costs you €7

One of these products decreases the donation of the researcher to Founders Pledge Climate Change Fund by €2 and the other by €4.

Do you want to reveal the corresponding reduction each product has on the donation at a cost of 10 cents?

Yes, reveal for 10 cents

No, do not reveal

Example buying decision (information revealed) – Costly information

Please choose the product you want to buy.

Product A:

- Costs you €6
- Decreases the donation of the researcher to Founders Pledge Climate Change Fund by €2

Product B:

- Costs you €7
- Decreases the donation of the researcher to Founders Pledge Climate Change Fund by €4

Product A

Product B

Example buying decision (information not revealed) – Costly information

Please choose the product you want to buy.

Product A: Costs you €6

Product B: Costs you €7

One of these products decreases the donation of the researcher to Founders Pledge Climate Change Fund by €2 and the other by €4.

Product A

Product B

## Results

### Results

- After your decisions you are left with: €40 - €0 = **€40**
- After your decisions the researcher's donation was decreased to: €20 - €0 = **€20**

If you win these amounts will translate into a real payout to you and a real donation of the researcher to the Founders Pledge Climate Change Fund.

### Demographics

How important is the issue of climate change to you personally?

Very important

Quite important

Not very important

Not at all important

What is your gender?

Female

Male

Non-binary / third gender

Prefer not to say



What is your age?

What is your political identity?

Conservative

Neutral

Liberal

What is the highest education you followed (or are presently following)?

Elementary school

High school

Bachelor's degree

Master's degree

PhD