

Altruism versus Egoism in Investment Decisions*

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Abstract

We provide survey evidence that personal values have an impact on individual investment decisions, in particular the decision to invest socially responsible. Our findings show that there is a positive link between altruistic values and the relative importance of social responsibility. This effect is stronger when individuals believe that they can make a positive social or environmental impact with their investments, or when they feel morally obliged to invest responsibly. If altruistic individuals associate responsible investments with higher returns, it decreases their motivation to invest responsibly. Egoistic values are negatively associated with the decision to invest responsibly. Egoism only leads to an increased relative importance of social responsibility when individuals expect higher returns from holding responsible assets.

1 Introduction

In this paper we investigate the impact of personal values on individual investment decisions, in particular the decision to invest socially responsible. Classical asset pricing models assume that investors base their investment decision solely on risk and return (Lintner (1965); Sharpe (1964)). More recent theoretical models suggest that values are reflected in investment decisions (Fama and French (2007); Heinkel et al. (2001)). Recent empirical evidence analyzing holding and trading data supports these models. The empirical evidence shows that investors incorporate religious (Kumar et al. (2011); Peifer (2010)) and political (Hong and Kostovetsky (2012)) values as well as social norms (Hong and Kacperczyk (2009)) in their investment decisions.

Over the last decades, we observe an increase in socially responsible investments (SRI). In 2016, roughly \$8.7 trillion or one-fifth of US assets under management were invested with one or more SRI mandates. This amounts to a 33% increase of the market for socially responsible investments since 2014 (USSIF (2016)). Also for institutional investors, the significance of SRI has been increasing. In 2016, more than 1,600 institutional investors from over 50 countries were signatories to the principles for responsible investment – an initiative launched in 2006 with support of the United Nations to increase awareness of environmental, social, and governance (ESG) issues. The signatories' assets under management constituted \$62 trillion (UNPRI (2016)).

Despite the fact that we observe an increasing importance of socially responsible investments, we do not fully understand why people invest socially responsible. The literature has suggested pecuniary and non-pecuniary motives (Beal et al. (2005); Derwall et al. (2011); Døskeland and Pedersen (2016); Glac (2009)). An emerging body of literature provides evidence that social preferences affect the decision to invest responsibly (Nilsson (2008, 2009); Riedl and Smeets (2017); Wiesel et al. (2016); Wins and Zwergel (2016)).

We add to a better understanding of why people invest responsibly by analyzing how psychological values, specifically altruism and egoism (Schwartz (1992)), can explain the decision to invest socially responsible. We base our argumentation on the value-belief-norm theory (Stern et al. (1999)). This theory posits that proenvironmental behavior is explained by a causal chain that has its starting point in personal values. These personal values are modeled antecedent to beliefs. When an individual believes that (1) things she values are threatened and that (2) her behavior helps in averting this threat, a personal norm is activated. This personal norm to act proenvironmentally results in a moral obligation to comply. The value-belief-norm theory has successfully been applied to explain proenvironmental behavior, for example the reduction of personal car use, or household CO₂ emissions (Nordlund and Garvill (2003); Steg et al. (2005); Stern (2000)). Based on this theory we hypothesize that altruistic values, beliefs about the effectiveness

of socially responsible investments, and personal norms will be positively related to the decision to invest socially responsible. We expect that egoistic values will be negatively related to the decision to invest socially responsible unless people expect a financial gain from investing responsibly.

We survey individuals at the citizen service center in Münster, Germany. We obtain a diverse, representative sample of 306 participants. The dependent variable is the relative importance of social responsibility in investment decisions. It is obtained from a conjoint analysis (Green and Srinivasan (1978)) wherein participants have to rate several randomly designed mutual funds with varying attributes of risk, return, and social responsibility. While initially originating from consumer market research, conjoint analysis is nowadays also used in other areas of research. Wilcox (2003, p. 646) discusses the product attributes influencing investors in their investment decisions. He outlines similarities between choosing the right investment product and “shopping for many other consumer items”. Conjoint analysis has been used to determine partial utilities for individual investors regarding attributes such as expected return, risk, time horizon, dividend, management, price earnings ratio, management fee, or previous performance of mutual funds (Clark-Murphy and Soutar (2004, 2005); Livanas (2011); Wilcox (2003)).

We measure individual’s values following Schwartz (1992) and distinguish between egoism and altruism. We use this approach as it is not only part of the VBN theory but also very commonly used in research in psychology (Lindeman and Verkasalo (2005); Parks-Leduc et al. (2015)). In order to elicit beliefs, participants have to assess the perceived social or environmental effectiveness of responsible investments. Regarding the dimension of personal norms we ask participants how far they feel morally obliged to invest socially responsible. We collect information about financial literacy, perception of risk and return, and demographics.

Our results show that there is a positive link between altruistic values and the relative importance of social responsibility. For an increase in altruism from the 25th to the 75th percentile, the relative importance of social responsibility increases by 9.7 percentage points. This effect is even stronger when individuals feel morally obliged to invest responsibly or when they believe they can make a positive social or environmental impact with their investments. In this case, the relative importance of social responsibility increases by 14.06 percentage points for the same increase in altruism from the 25th to the 75th percentile. Interestingly, we find that if very altruistic individuals associate responsible investments with higher returns, it decreases their motivation to invest responsibly. For individuals in the 90th percentile of altruism, a change in SRI return perception from low to high leads to a 7.2% lower relative importance of social responsibility. We interpret these results in line with a body of research that shows how extrinsic incentives can crowd out intrinsic motivations (e.g., Andreoni and Payne (2011); Ariely et al. (2009); Frey and Jegen (2001); Gneezy et al. (2011)). These papers

show in the context of (blood or other) donations that providing financial incentives for “doing good” actually decreases individuals’ willingness to do good. Egoistic values are negatively associated with the decision to invest responsibly. For an increase in egoism from the 25th to the 75th percentile, the relative importance of social responsibility decreases by 6.4 percentage points. Egoism only leads to an increased relative importance of social responsibility when individuals expect higher returns from holding responsible assets. For the same increase in egoism from the 25th to the 75th percentile, the relative importance of social responsibility increases by 13.55 percentage points when the individual associates SRI with higher returns than conventional investments.

Based on the relative importance of return, social responsibility, and risk in investing elicited from the conjoint analysis, we then segment our participants. We provide evidence that those individuals who care most about returns are characterized as egoists with low belief and moral obligation to engage in SRI. In our sample, they have the highest self-reported investment knowledge and perceive SRI returns to be lowest compared to conventional investments. Return-focused individuals are predominantly male and we present some evidence that they are rather old with high income. Investors that focus on social responsibility have the highest scores on the altruism scale. Not only their beliefs and norms concerning SRI are highest, but they moreover have the highest perception of SRI return. However, almost 40% of individuals in this segment attribute a high importance to social responsibility although they expect lower returns. Self-reported investment knowledge is significantly lower compared to the return-focused segment. Investors focused on social responsibility are young and the majority is female. In addition, we present a risk-focused segment that is mainly characterized by the lowest self-reported investment knowledge. Regarding values, beliefs, and norms this segment is located in between the other two segments.

To our knowledge, we are the first to provide evidence that psychological values, such as altruism and egoism, drive investment decisions. A few studies link social preferences to socially responsible investment decisions. Nilsson (2008) finds that pro-social attitudes are significantly positively related to self-reported SRI holdings in a survey among mutual fund investors. Pro-social attitudes measure how much participants value a company’s position towards e.g. environmental issues or human rights in regular purchasing decisions. Wins and Zwergel (2016) confirm these findings for a sample of German mutual fund investors. In a later study, Nilsson (2009) uses an individual’s absolute donations to charity as a proxy for altruism. He shows that those SR investors who are primarily concerned about social responsibility have the highest donations. Wiesel et al. (2016) measure social preferences through endowment allocations of one-shot dictator games. Stronger social preferences result in higher interest and overall engagement in SRI. Gutsche et al. (2016) show that a good feeling associated with holding SRI is positively related to the share of SRI in the overall

portfolio. To investigate the drivers behind responsible investments, Riedl and Smeets (2017) establish a link between investor behavior in social preferences experiments and holding data. In particular, the authors use second-mover behavior in a trust game to measure intrinsic social preferences. Overall, results suggest that non-pecuniary motives are a significant predictor for the propensity to hold socially responsible investments. Nonetheless, there are also pecuniary motives for SRI, especially when investors associate SRI with higher returns than conventional investments (e.g. Beal et al. (2005); Døskeland and Pedersen (2016); Glac (2009)). Døskeland and Pedersen (2016) present information about a socially responsible asset to investors in a field experiment. One group of investors is informed that the socially responsible asset performs better financially. Another group of investors receives information how their investment counteracts irresponsible business practices. The results show a significantly higher actual purchase rate for the group of investors that receives information about higher SRI returns.

We contribute to this literature by showing that both pecuniary and non-pecuniary motives exist and relate to the individual’s psychological values, altruism and egoism. Non-pecuniary motives can be linked to altruism. Altruism has a strong positive relation to the motivation to invest responsibly, if investors expect lower or equal returns from investing responsibly. Pecuniary motives arise from egoistic values. Only if an individual that scores high on the egoism scale expects a financial reward from investing socially responsible, will she be motivated to do so. Our findings therefore allow us to link the previously established non-pecuniary and pecuniary motives for responsible investments (Beal et al. (2005); Døskeland and Pedersen (2016); Glac (2009); Nilsson (2008); Riedl and Smeets (2017)) to an investor’s psychological values.

This paper proceeds as follows. In Section 2 we present related literature and outline research hypotheses. We deduct the methodology for the survey and review the underlying theory in Section 3. Section 4 reports the results of the regression analyses and discusses the investor segmentation we conduct based on our results. We conclude in Section 5.

2 Values, Beliefs, and Norms in Investment Decisions

Schwartz and Bilsky (1987, 1990) define values as concepts that relate to desired end states which go beyond specific situations. Values are typically regarded as stable and fairly constant (Schwartz (1992); Stern (2000)) which means they do not necessarily directly determine a decision or behavior. Rather, the interpretation of whether a certain value applies in a situation is decisive (Verplanken and Holland (2002)).

The psychological literature has generated theories with the aim of identifying and explaining factors that influence behavior. A prominent example is the value-belief-norm theory (VBN) (Stern et al. (1999)) that was specifically developed to

explain proenvironmental behavior. The theory integrates and extends norm-activation theory (Schwartz (1977)) and the theory of planned behavior (Ajzen (1991)). VBN posits that proenvironmental behavior is explained by a causal chain that has its starting point in personal values. The personal values originate from a dimension of the Schwartz (1992) value inventory. Schwartz (1992) contrasts values such as power, achievement, or hedonism to benevolence and universalism. This dimension is referred to as self-enhancement versus self-transcendence and allows a distinct value assessment of an individual. Self-enhancement values determine whether individuals are driven by selfish interests only, which might even come at the expense of others. Self-transcendent values by contrast are suitable to investigate selflessness. Individuals with self-transcendent values are mainly concerned with enhancing the welfare of others and the environment. Here, we refer to the antithetic dimensions of self-enhancement versus self-transcendence values as measures of egoism and altruism (Nilsson et al. (2004); Schwartz (1992); Steg et al. (2005); Stern et al. (1999); Stern (2000)). Value-belief-norm theory models personal values antecedent to beliefs. When an individual believes that (1) things she values are threatened and that (2) her behavior helps in averting this threat, a personal norm is activated. This personal norm to act proenvironmentally results in a moral obligation to comply. Proenvironmental behavior consequently occurs as a result of feeling morally obliged from the personal norm.

The link between values, beliefs, norms, and the resulting behavior has been examined to explain proenvironmental behavior. Steg et al. (2005) find VBN theory to be able to explain a reduction in household energy consumption. Nordlund and Garvill (2003) find that altruistic values are related to the willingness to reduce personal car use. Further, a survey by Nilsson et al. (2004) links personal values to the willingness to accept climate change strategies. Altruistic values from the Schwartz (1992) value inventory have a positive effect on the willingness to accept strategies to reduce negative climate change effects. In addition, these altruistic values are significantly positively related to an individual's intention to donate money (De Groot and Steg (2008)).

In light of the evidence reviewed above, we argue that the relation between altruistic values and behavior also holds for investment decisions. We propose that socially responsible investors engage in SRI because of their altruistic values and beliefs. We argue that these investors will be intrinsically motivated. Knowing of their engagement provides them with utility through “warm-glow” (Andreoni (1989, 1990); Beal et al. (2005)). As socially responsible investors have higher donations to charity as well as higher social preferences (Nilsson (2008, 2009); Riedl and Smeets (2017); Wiesel et al. (2016); Wins and Zwergel (2016)), we propose:

H1: Altruistic values are positively linked to the relative importance of social responsibility in investment decisions.

The next component in the value-belief-norm theory is beliefs. An individual's beliefs are a crucial component in determining behavior – when an individual believes in a threat and believes her behavior can alleviate this threat, this ultimately results in a behavior (Schwartz (1977); Stern et al. (1999)). Lind et al. (2015) show that values and beliefs determine most of the variance in personal norms that activate an obligation for proenvironmental behavior. Nilsson (2008) introduces an item to measure beliefs about the effectiveness of SRI. The results suggest that individuals with a high level of perceived SRI effectiveness hold more SRI funds. In line with this, Riedl and Smeets (2017) show that individuals with beliefs of a positive societal impact of SRI are more likely to hold SRI funds. An individual will only consider investing responsibly when she is convinced of the effectiveness of SRI. We therefore expect that beliefs about the effectiveness of SRI are related to socially responsible investment decisions and hypothesize:

H2: Perceived SRI effectiveness is positively linked to the relative importance of social responsibility in investment decisions.

Personal norms represent the last component in the value-belief-norm theory and result in a moral obligation that initiates behavior (Schwartz (1977); Stern et al. (1999)). Norms are activated by the belief that an individual's actions contribute to the solution of the problem. Further, they are a significant determinant of proenvironmental behavior, for example willingness to reduce personal car use, willingness to reduce household CO₂ emissions, willingness to accept climate change policies, and a variety of other proenvironmental behaviors (Nilsson et al. (2004); Nordlund and Garvill (2002, 2003); Steg et al. (2005); Stern (2000)). Looking at financial markets, we observe a significant impact norms can have on investments. Social norms, arising from investments in controversial or “sin” stocks, can affect stock prices (Hong and Kacperczyk (2009)). The moral obligations arising from these norms also influence investment behavior in other dimensions. Political leaning (Hong and Kostovetsky (2012)) as well as religiousness (Kumar et al. (2011); Peifer (2010)) significantly influence holdings. We therefore hypothesize that personal norms will affect socially responsible investment decisions:

H3: Norms are positively linked to the relative importance of social responsibility in investment decisions.

To test whether values, beliefs, and norms can explain socially responsible investment decisions, we need three conditions to hold. First, altruism has to be linked

to the relative importance of a fund’s social responsibility (H1). Next, we argue that perceived SRI effectiveness (H2) and norms (H3) are linked to the relative importance of a fund’s social responsibility. According to Stern et al. (1999), the link between values and behavior is mediated by norms which are activated by their antecedent beliefs. Nordlund and Garvill (2002, 2003) show that norms mediate the relation between values and proenvironmental behavior. Nilsson et al. (2004) finds altruistic values to have a positive effect on the willingness to accept strategies to reduce negative climate change effects. This effect is further mediated by personal norms. In line with this, Steg et al. (2005) provide evidence for the mediating effect of norms and beliefs when explaining the willingness to reduce household CO₂ emissions. For our research, we expect a mediating role of SRI effectiveness and norms. Thereby, we ultimately argue that altruistic individuals will invest in SRI when they believe in the cause (SRI effectiveness) and thus activate an obligation to act (norm). Building on the causal chain of VBN, we hypothesize:

H4: The link between altruistic values and the relative importance of social responsibility in investment decisions is mediated by perceived SRI effectiveness and norms.

Despite the evidence reviewed above, the non-pecuniary utility from personal values cannot be considered the sole incentive to invest socially responsible. Next to the non-pecuniary component, financial returns are a motive for responsible investments. This suggests that the overall utility obtainable from responsible investments is fueled not only by ethical considerations. In line with this, Knoll (2002) distinguishes SRI from charity. Socially responsible investors rather pursue a joint objective of doing good while yielding adequate compensation for their investment. Pecuniary motives of SRI are measurable in controlled settings (Beal et al. (2005); Døskeland and Pedersen (2016); Glac (2009)), and also exist for institutional (Kumar and Page (2014)) as well as individual (Døskeland and Pedersen (2016); Riedl and Smeets (2017)) investors as indicated by holding data. We argue that “profit seeking” investors (Derwall et al. (2011)) are motivated extrinsically. Unlike “values driven” investors, they do not benefit from doing good. Profit seeking investors are expected to be egoistic, focusing exclusively on the maximization of their returns. This means that an egoistic individual will derive no utility from the social responsibility of an asset as this is not in line with her selfish personal values (Andreoni (1989, 1990); Schwartz (1992)). The VBN literature provides some evidence that suggests egoistic values are negatively related to proenvironmental behavior (De Groot and Steg (2008); Nordlund and Garvill (2002); Steg et al. (2005); Stern et al. (1999)). Accordingly, we expect that egoistic values will negatively affect socially responsible investment decisions. We hypothesize:

H5: Egoistic values are negatively related to the relative importance of social responsibility in investment decisions.

However, the return of an asset will be crucially important for egoistic individuals. An asset’s social responsibility is thus only important to them when they expect this criterion to have relevance for anticipated returns. The link between egoistic values and proenvironmental behavior is not as commonly studied. This is not surprising as altruistic values, concerned with promoting the welfare of others and the environment (Schwartz (1992)), are a natural determinant of proenvironmental behavior. As a consequence of proenvironmental behavior, individuals oftentimes need to restrain their egoistic motives (Steg et al. (2005)). As we discuss above for H5, egoistic values generally have a negative link to proenvironmental behavior. Karp (1996) proposes that egoistic values will lead to an engagement in proenvironmental behavior “only when there is a clear link between self-interest and proenvironmental behavior” (p. 116). While he finds no empirical support for this claim, we argue in a similar manner.

Beal et al. (2005), Døskeland and Pedersen (2016), and Nilsson (2008) find some investors to engage in SRI because they expect superior returns. We conjecture this to be an egoistic motive. Riedl and Smeets (2017) find signaling is positively related to the likelihood of holding SRI. Talking about ones responsible investments reveals the egoistic motive of gaining reputation. In our paper, we address the egoistic motive of individual return maximization instead. When financial benefits of doing good are expected, we argue the relation hypothesized above (H5) to change. Only if egoistic individuals associate SRI with higher returns do we expect a positive influence on the relative importance of social responsibility. When egoistic individuals perceive SRI returns to be lower than conventional returns, we expect a negative relation. We thus propose:

H6: The link between egoistic values and the relative importance of social responsibility in investment decisions is moderated by the perception of the financial performance of SRI.

3 Research Design

3.1 Survey

We survey individuals at the local citizen center in early 2016. The variety of services provided and the fundamental importance of these services allow us to cover diverse classes of society. Citizens are approached and asked to participate by answering the questionnaire while waiting for their appointments. On average, participants spent 10

minutes to complete the questionnaire. They received candy in return for their efforts. The survey was conducted over the course of one week, including a Saturday. Participants had no awareness of the intention of the study. In order to avoid any experimenter influence or framing the survey was introduced as an investigation of individual investment decisions. Participants were asked to complete the questionnaires on their own. As the survey was conducted in a university town, our sample likely overrepresents academics. Goedde-Menke et al. (2014) conducted a survey in the same citizen center. We share their observation that only few people refused to answer the questions and are not aware of further selection bias.

In the survey, shown in Appendix A, we collect investor characteristics and decisions in five parts. In the first part, we assess personal values by adopting the value inventory dimensions *self-enhancement* (items 1.1 – 1.5) and *self-transcendent* values (items 1.6 – 1.9) by Schwartz (1992). Self-enhancement values typically result in the pursuit of enhancing the welfare and success of oneself. To measure egoism, we therefore select the five factors *authority*, *social power*, *wealth*, *ambition*, and *success*. These factors reflect both status and dominance of an individual relative to others (Schwartz (1992)). Self-transcendent values describe the conflictive pursuit of enhancing the welfare of others (Nilsson et al. (2004)). As our measure for altruism, we select the four factors *equality*, *social justice*, *protecting the environment*, and *unity with nature*. As recommended by Schwartz (1992), participants rate for items 1.1 – 1.9 to what extent the respective factors represent a guiding principle in their lives. In order to avoid a misperception of items, they are briefly described before participants rate them with an eight-point Likert scale ranging from “not important at all” to “of supreme importance”. We use a principal component analysis with orthogonal (varimax) rotation to assure the adequacy of the chosen items (Kaiser (1958)). All egoistic values load on one and all altruistic values on a second component, suggesting an adequate two-scale solution. As evident from Table 1, the scales for altruism and egoism have Cronbach’s alphas larger than 0.7 and are thus considered to be reliable.

In the second part of the survey, we measure investment preferences to derive our dependent variable. Here, participants rate mutual funds regarding their attractiveness to them on a 10-point Likert scale ranging from “not attractive at all” to “very attractive” (items 2.1 – 2.11). We report three factors for every fund: its expected return, its risk, and its social responsibility. The levels of expected return are set at 5%, 10% and 15% respectively. This equidistance is selected to assert participants’ comprehensibility in line with the return differentials in the conjoint analysis of Wilcox (2003). We argue that actual return levels are superior for two reasons. Compared to a classification in “high”, “average”, and “low” returns as in Clark-Murphy and Soutar (2004, 2005), they are more realistic. As socially responsible investors can place significant weight on returns (Døskeland and Pedersen (2016); Riedl and Smeets (2017))

a portrayal of actual return levels is oftentimes preferred (Kara et al. (1994); Livanas (2011); Wilcox (2003); Zinkhan and Zinkhan (1990)). Following Bauer and Smeets (2010), the levels of risk range from “low” over “medium” to “high” to ensure comprehensibility by participants. We design three levels for the focus of a mutual fund: socially irresponsible, neutral, and socially responsible. The most important exclusions in the European market for SRI are the armaments and defense industry (Eurosif (2014)). We therefore select these exclusions to represent the socially irresponsible focus. The neutral fund is labeled to have no investment focus at all. The socially responsible fund is described as focusing on sustainable investments to incorporate all aspects of SRI. To understand the intuition behind responsible investments, a brief definition is provided in the description preceding part two of the survey.¹ We choose a full-profile approach for the conjoint analysis following Green and Srinivasan (1978) to assure a high level of predictive validity. As the authors point out, a substantial cognitive effort due to information overload can be the result of various attributes and levels. To avoid our participants rating 27 ($3 \times 3 \times 3$) funds reflecting all possible combinations, we use a fractional factorial design instead. We follow the suggestions by Green and Srinivasan (1978) and present 11 randomly designed hypothetical mutual funds (items 2.1 – 2.11 in the survey), while still maintaining the condition of orthogonality. Using the results from the conjoint analysis, we estimate a utility function for each participant. We assume a linear vector model for the attribute expected return as the levels are equidistant and can be considered metric. Risk and social responsibility on the other hand are categorical and we therefore assume separate part-worths. We arrive at a high predictive ability of the specified model with Pearson’s $R = 0.985$, $p < 0.01$ and Kendall’s $\tau = 0.889$, $p < 0.01$.

In the third part of the survey, participants first have to assess their investment knowledge on a 5-point scale ranging from “Very poor” to “Very good” (item 3.1). Secondly, they report how long they have been investing (item 3.2). Item 3.3 then asks participants whether they were familiar with SRI before this survey. Items 3.4 – 3.5 are adapted from Dorfleitner and Utz (2014) to assess an individual’s risk and return perception of a responsible fund relative to a conventional fund. On 5-point Likert scales, participants assess the risk (return) of responsible relative to conventional investments from “A lot less risky” (“Much lower”) to “A lot more risky” (“Much higher”). Participants moreover have to gauge their perceived effectiveness of SRI through items 3.6 – 3.9. In particular, we collect participants’ agreement to questions such as “*By investing in SRI every investor can have a positive effect on the environment.*”, “*Every person has the power to influence social problems by investing in*

¹ The definition is obtained from the 2015 annual report of Forum Nachhaltige Geldanlagen, “an association promoting sustainable investment in Germany, Austria and Switzerland”, available online at http://www.forum-ng.org/images/stories/Publikationen/fng_marktbericht2015_online.pdf

responsible companies.”, or *“It does not matter if I invest in socially responsible mutual funds since one person acting alone cannot make a difference.”*. This assessment follows the rationale that an individual is more likely to engage in SRI if she thinks her investment is effective and will ultimately make a difference. Intuitively, one expects a positive relationship between perceived SRI effectiveness and SRI engagement. We utilize a scale for perceived SRI effectiveness based on Nilsson (2008, 2009)’s perceived consumer effectiveness (PCE). This scale is similar to the perceived social impact scale in Riedl and Smeets (2017), where participants had to report their agreement with the statement *“Socially responsible investment funds have a positive influence on society”*, yet covers a broader impact of responsible investments. With Cronbach’s alpha of 0.792 (see Table 1), we consider the scale to be reliable.

The fourth part of the survey asks about individuals’ norms. We adapt a scale by Ibtissem (2010) to measure norms through items 4.1 – 4.4 in the survey. While initially constructed to apply VBN theory for energy conservation behavior, we word the items to fit an investment context. On a 7-point scale ranging from *“I do not agree at all”* to *“I strongly agree”*, participants have to indicate their level of agreement towards feeling morally obliged to invest responsibly. By adapting attitude scales by Day and Stafford (1997) and Peloza et al. (2013) to fit an investment context, we ask participants for their attitudes towards sustainability (items 4.5 – 4.8) and weapons (items 4.9 – 4.11). The adapted Peloza et al. (2013) scale measures *“To what degree do you value taking care of the environment?”*, *“How much do you value making environmentally and socially sustainable choices?”*, *“To what degree do you value conserving our natural resources?”*, and *“To what degree do you think it is important to consider our impact on the environment”* on a 7-point Likert scale from *“Not at all”* to *“To a great extent”*. The Day and Stafford (1997) scale assesses the participants’ feelings towards weapons through three items. Both attitude scales are highly reliable with Cronbach’s alpha of 0.89 and 0.92 for weapons and sustainability, respectively, see Table 1.

In the fifth part, we survey demographics and socio-economic factors of participants. The demographic items we collect can be found in the survey as items 5.1 – 5.8. We collect a dummy variable for gender taking a value of 1 in case the participant is female and 0 when the participant is male. We further ask for the participant’s age measured in years. Participants report their marital status and are asked whether they have children (dummy variable) and if so, how many (absolute measure). We then ask for the highest degree of education where participants can select among typical German degrees. We also collect the current employment status and ask participants to select themselves in a monthly net income category ranging from *“up to €1,499”* to *“more than €6,000”*. Further, participants have to indicate whether they belong to a religious community.

3.2 Descriptive Statistics

Table 2 shows descriptive statistics of our participants’ characteristics. In our sample, 47.9% of the 306 respondents are male and 52.1% are female. The average age is 34.6 years and the majority of participants is between 21 and 30 years old (46.1%). The participants are well educated with 42.5% of participants having a university degree and 23.5% with a high school degree. Most of the respondents are either employed (43.8%) or undergoing education (27.5%). This is also reflected in the two most common income levels at below €1,500 (52.3%) and between €1,500 and €3,499 (35.0%). A higher monthly net income is rather uncommon with only 8.2% of respondents earning between €3,500 and €6,000 and 2.6% above €6,000. Single is the most frequent marital status (62.4%) followed by married (31.7%) with only a minor fraction of participants being divorced (4.6%) or widowed (1.3%). As expected for this geographical area, most individuals are Catholic (36.7%) while Protestants and Atheists each reflect approximately 25% in our sample. We find that our sample overrepresents well-educated, young, and low-income subjects relative to the German population.² In unreported results, we show that the low average income is a consequence of young participants. This confirms previous findings of a survey by Goedde-Menke et al. (2014) that is also conducted in the local citizen center.

In Table 3, we depict our participants’ self-assessed financial literacy. 28.4% of respondents report an average investment knowledge level while 46.1% indicate it to be poor. Intriguingly, however, the majority (64.4%) have heard of SRI before the survey. In line with this assessment, 36.3% of the respondents indicate to have previous experience with investing with various time frames. On the other hand, the remaining 63.7% have not invested in the financial market. We conjecture this to be a consequence of young, low-income subjects.

Confirming the results of Geczy et al. (2005) and Riedl and Smeets (2017), there seems to be a general notion that investing responsibly comes at a cost. This arises from the fact that while 30.8% perceive SRI to be less risky, 48.4% believe SRI yields lower returns than conventional investments, as evident from Table 4. On the other hand, only 14.7% expect the return and risk to be higher or much higher.

4 Results

4.1 Computing Partial Utilities

In order to determine the partial utilities of our attributes of interest return, risk, and social responsibility, we present 11 mutual funds. All participants have to rate these 11

² Based on data from the 2011 census, 48.8% of German citizens are male and 51.2% are female. The average German citizen is 44 years old. In 2011, 26.6% of Germans had a high school degree and 13.2% obtained a university degree (Federal Statistical Office (2017)).

mutual funds based on their attractiveness to them. The results of the conjoint analysis are used to calculate parameters for each participant’s partial utilities. Aggregating the partial utilities similar to Clark-Murphy and Soutar (2004); Livanas (2011); Wilcox (2003) the utility function of participant j is:

$$U_j = w_{1j} \times Return + w_{2j} \times Risk + w_{3j} \times Social\ Responsibility \quad (1)$$

with $\sum_{i=1} w_{ij} = 1$. The relative importance weights w_{ij} indicate how much participant j values each of the attributes expected return, risk, and social responsibility in her investment decision. These relative importance weights of the respective attributes are calculated as follows. The range of each attribute is divided by the sum of the ranges of all attributes for each participant (Clark-Murphy and Soutar (2004); Wilcox (2003)). For participant j , with U_{ij}^{max} and U_{ij}^{min} reflecting the estimated part-worths of the most and least desired level of attribute i , the relative importance weight is therefore:

$$w_{ij} = \frac{U_{ij}^{max} - U_{ij}^{min}}{\sum_{i=1} (U_{ij}^{max} - U_{ij}^{min})} \quad (2)$$

We average the individual relative importance weights from Equation 2 to arrive at a mean utility function of:

$$Utility = 24.89\% \times Return + 26.75\% \times Risk + 48.36\% \times Social\ Responsibility$$

We identify a substantial weight attached to a fund’s responsibility while the relative importance of return and risk have approximately the same weight. Several participants display irrational behavior in their decisions. These cases remain in the analysis as we cannot assume perfectly rational financial market participants (de Bondt (1998)). In a robustness test below, we exclude these participants and are able to confirm our main findings.

4.2 Do Altruism and Egoism affect the Investment Decision?

To address our set of hypotheses we now focus on the relative importance weight placed on the social responsibility (w_{SRI}) to further investigate responsible investment decisions. We split our analyses in a mediation analysis for hypotheses H1-H4, and use moderation analysis to address hypothesis H6, as indicated in section 2. To do so, we employ the PROCESS macro developed by Hayes (2012, 2013). We estimate OLS regressions as specified below with heteroscedasticity consistent standard errors (Long and Ervin (2000)). We conduct the following regressions with perceived SRI effectiveness (PSE) and $Norm$ as mediators to construct a serially-linked causal chain that represents our VBN theory approach (Baron and Kenny (1986); Stern et al. (1999);

Zhao et al. (2010)):

$$\begin{aligned}
PSE = & \beta_{0,PSE} + \beta_1 \times Altruism + \beta_2 \times Egoism + \beta_3 \times Gender \\
& + \beta_4 \times PercRet + \beta_5 \times Age + \beta_6 \times InvKH + \beta_7 \times Income + \epsilon_{PSE}
\end{aligned} \tag{3}$$

$$\begin{aligned}
Norm = & \beta_{0,Norm} + \beta_1 \times PSE + \beta_2 \times Altruism + \beta_3 \times Egoism \\
& + \beta_4 \times Gender + \beta_5 \times PercRet + \beta_6 \times Age \\
& + \beta_7 \times InvKH + \beta_8 \times Income + \epsilon_{Norm}
\end{aligned} \tag{4}$$

$$\begin{aligned}
w_{SRI} = & \beta_{0,w_{SRI}} + \beta_1 \times PSE + \beta_2 \times Norm + \beta_3 \times Altruism \\
& + \beta_4 \times Egoism + \beta_5 \times Gender + \beta_6 \times PercRet + \beta_7 \times Age \\
& + \beta_8 \times InvKH + \beta_9 \times Income + \epsilon_{w_{SRI}}
\end{aligned} \tag{5}$$

where *PSE* is the perceived SRI effectiveness, i.e., how much an individual believes her investment in SRI will make a difference. *Altruism* represents the individual's score on the altruism scale, and *Egoism* the individual's score on the egoism scale. *Gender* refers to the individual's gender represented by a dummy equal to one 1 if the individual is female. *PercRet* is the individual's return perception of a responsible relative to a conventional fund. *Age* is the individual's age. *InvKH* reflects the individual's self-assessed investment knowledge. *Income* represents the individual's reported income level. *Norm* measures to what extent an individual feels morally obliged to engage in SRI, and *w_{SRI}* represents the individual's relative importance weight for an asset's social responsibility (cf. Equation 2).

Results are presented in Table 5. Altruism has a positive effect on the importance an individual attributes to an asset's social responsibility. That is, altruism has a direct influence on *w_{SRI}*, significant at the 1% level, confirming hypothesis H1. Next, we find a positive significant relation between a participant's PSE and *w_{SRI}*. The intuition behind this is as follows. The more an investor believes in the effectiveness of responsible investments, the more she is inclined to reflect this in investment decisions. With a coefficient of 0.0263, significant at the 10% level, this confirms hypothesis H2. To address hypothesis H3, we move our focus to the participant's norms. Results show a significant positive influence at the 5% level. That is, feeling morally obliged to engage in SRI yields a higher relative importance of social responsibility. Within the scope of VBN theory, the aforementioned effects can be interpreted as follows. An individual is inclined to have a higher *w_{SRI}* for three reasons. First, she is altruistic and thereby at least partially intrinsically motivated to reflect these altruistic values in her investments. Second, a higher *w_{SRI}* is only implied when she believes her investment will make a difference, as indicated by the level of perceived SRI effectiveness. Third, her norms activate a moral obligation towards focusing on the social responsibility of an asset. On

its own, a higher perceived return of SRI assets results in a significantly higher w_{SRI} , confirming the existence of a pecuniary motive for SRI (Beal et al. (2005); Døskeland and Pedersen (2016); Glac (2009); Kumar and Page (2014); Nilsson (2008); Riedl and Smeets (2017)). We obtain a highly significant coefficient for the perceived SRI return even after inclusion of all variables accounting for values, beliefs, and norms. We further disentangle the drivers of this effect when we investigate hypothesis H6 below. Our data moreover hint at a positive impact of income on w_{SRI} that is significant at the 10% level. While we discuss above that our sample only has a few high income participants, one could cautiously interpret this as evidence that higher income individuals place more importance on social responsibility. In line with this, Andreoni et al. (2017) as well as Smeets et al. (2015) find wealthy individuals to be generous even without facing direct benefits.

Zhao et al. (2010) and Baron and Kenny (1986) classify conditions that need to hold for mediation. To assess whether the link between altruistic values and w_{SRI} is mediated by SRI effectiveness and norms (hypothesis H4), again consider Table 5. First, the independent variable (altruism) needs to be significant in explaining both mediators (PSE and Norm). In columns (1) and (2) of Table 5, we show that altruism has a positive effect on both mediators, significant at the 1% level. Next, the coefficient of altruism is compared to the coefficient of a linear regression without the mediators, i.e. the total effect model. We present the total effect model in Table 6. The coefficient of altruism must be smaller in the mediation model than in the total effect model, which is the case in our results. Interestingly, age has a significantly negative impact on w_{SRI} in the total effect model, however this effect is marginal. As evident from Table 5, the direct effect of altruism on w_{SRI} is 0.0485. The difference to the total effect of altruism on w_{SRI} amounts to 0.0218 (0.0703 - 0.0485). This finding confirms hypothesis H4 and shows that perceived SRI effectiveness and Norms are significantly mediating the link between altruistic values and w_{SRI} .

We portray the results of the multiple mediation model in Figure 1. In our VBN setup, beliefs about SRI effectiveness (PSE) are always antecedent to Norm. Both PSE and Norm have individually mediating effects in addition to an effect that is evident from the causal chain through both mediators acting together. All of the indirect effects are significant.³ Therefore, the direct as well as the indirect effects positively and significantly influence w_{SRI} . From Figure 1, the total effect is calculated as the sum of the direct and indirect paths: $0.0485 + 0.3694 \times 0.5244 \times 0.0213 + 0.3771 \times 0.0213 + 0.3694 \times 0.0263 = 0.0703$. The indirect effects account for 31% of the total effect of altruism on w_{SRI} .⁴

³ Further, all the indirect effects have 95% bias corrected confidence intervals excluding zero. We obtain the confidence intervals from bootstrapping with 10,000 samples. These results are available from the authors upon request.

⁴ We put the indirect effects in relation to the total effect, hence: $\frac{0.0218}{0.0703} = 31\%$.

We show that altruism directly and indirectly influences the weight an investor attributes to the social responsibility of a fund. First, the investor believes that her behavior has an impact (perceived SRI effectiveness). This in turn activates a moral obligation to invest in SRI (Norm). Our results confirm the hypothesized relationship between values, beliefs, norms and the resulting behavior for investing responsibly, i.e. our hypotheses H1-H4. This relationship also bears a substantial economic significance. Without mediation effects, w_{SRI} increases by 9.70 percentage points for an increase in altruism from the 25th to the 75th percentile.⁵ For an investor who feels a moral obligation to engage in SRI activated by the perceived SRI effectiveness, this manifests in an increased w_{SRI} with a magnitude of 14.06 percentage points.⁶ To sum up, the mediating effect of PSE and Norm will enhance the effect of altruism on w_{SRI} by an economically significant 44.95% ($\frac{14.06}{9.70} - 1$).

We further show that egoism has a strong negative effect on w_{SRI} , confirming hypothesis H5. This effect is significant at the 1% level. Egoism seems to go in hand with a lower relative importance on social responsibility in investing. As egoistic individuals will not derive non-pecuniary utility from social responsibility, this will also manifest in their investment decisions. This amounts to a decrease in w_{SRI} by 6.4 percentage points for an increase in egoism from the 25th to the 75th percentile.⁷ In the next analysis, we are interested whether this link between egoistic values and w_{SRI} is moderated by SRI return perception. This lets us investigate the extent to which egoistic values can predict socially responsible investments in conjunction with the (perceived) financial performance. To address hypothesis H6, we introduce an interaction term between egoism and perceived SRI return in Equation 6.

$$\begin{aligned}
w_{SRI} = & \beta_{0,w_{SRI}} + \beta_1 \times PercRet + \beta_2 \times Egoism + \beta_3 \times (PercRet \times Egoism) \\
& + \beta_4 \times PSE + \beta_5 \times Norm + \beta_6 \times Altruism + \beta_7 \times Gender + \beta_8 \times Age \\
& + \beta_9 \times InvKH + \beta_{10} \times Income + \epsilon_{w_{SRI}} \quad (6)
\end{aligned}$$

Results are reported in Table 7. The coefficient of the interaction term between egoism and perceived return is positive and significant at the 1% level. The interpretation of the coefficients for egoism and return perception of SRI now changes however. Just as before, egoism will have a highly significant negative effect on w_{SRI} . The coefficient for *PercRet* now has a negative sign. This signals that for an individual with theoretical egoism of zero, a higher return perception results in a lower w_{SRI} .

⁵ The level of altruism changes by $2 = [7.25 - 5.25]$ from the 25th to the 75th percentile. This factor is then multiplied with the coefficient of the direct effect of altruism on w_{SRI} , 0.0485, see Table 5.

⁶ The level of altruism changes by $2 = [7.25 - 5.25]$ from the 25th to the 75th percentile. This factor is then multiplied with the coefficient of the total (that is, direct + indirect) effect of altruism on w_{SRI} , $0.0485 + 0.0218 = 0.0703$, see Table 6.

⁷ The level of egoism changes by $1.8 = [6.2 - 4.4]$ from the 25th to the 75th percentile. This factor is then multiplied with the coefficient of the total effect of egoism on w_{SRI} , -0.0354 , see Table 6.

We estimate simple slopes to scrutinize the conditional effect of egoism on w_{SRI} . This allows us to investigate levels of egoism for individuals who perceive SRI returns to be lower, similar, or higher than those of conventional investments. We report the results in Figure 2. We observe a negative slope for lower or similar SRI return perceptions. Moreover, the slope becomes steeper with a decreasing return perception. This means that for a decreasing SRI return perception in combination with increasing egoism, the weight of an asset’s social responsibility in the utility function decreases. The negative effect of egoism on w_{SRI} is therefore enhanced by a perception of SRI returns to be lower or similar compared to conventional funds. In turn, we observe a positive slope for individuals who perceive SRI returns to be higher than their conventional counterpart. This indicates that with a high SRI return perception, an increase in egoism leads to an increase in w_{SRI} . That is, the weight of the social responsibility of an asset becomes increasingly important in said individual’s utility function. This effect is driven by the payoff an egoistic individual expects from her responsible investment. We argue that this finding can be interpreted as evidence in favor of a pecuniary component to responsible investing. Egoistic individuals care more about their own well-being – here reflected as financial returns – than the social responsibility of an asset. Egoistic investors will only engage in SRI when it pays off to do so.

We further decompose the interaction between egoism and perceived SRI return by studying the significance of the interaction term for various levels of *PercRet*. This in turn yields a higher precision in identifying the moderating effects of an individual’s SRI return perception. The results in Table 9 indicate that significance is mostly present in the extremes of the distribution. Significance occurs when *PercRet* is either “much lower” or “lower” as well as “much higher”. We can confirm hypothesis H6 and find a significantly moderating effect of SRI return perception on w_{SRI} relative to an individual’s egoism level.

To assess the economic significance, again consider percentile changes equivalent to the procedure for the mediating effect of PSE and Norms above. An investor with a much lower SRI return perception has a 17.10 percentage points lower w_{SRI} in her utility function when her level of egoism increases from the 25th to the 75th percentile. When the investor perceives SRI returns to be much higher on the other hand, the same increase in egoism translates into an increase of w_{SRI} by 13.55 percentage points in the utility function.⁸ We have established a moderating role for *PercRet* and link this behavior to return seeking SR investors. Our results speak in favor of a pecuniary component to responsible investments (Beal et al. (2005); Døskeland and Pedersen (2016); Glac (2009); Kumar and Page (2014); Nilsson (2008); Riedl and Smeets (2017)),

⁸ The level of egoism changes by $1.8 = [6.20 - 4.40]$ from the 25th to the 75th percentile. This factor is then multiplied with the respective effect sizes of egoism on w_{SRI} , -0.0950 and 0.0753, as evident from Table 9. Note that for comparability we use the most extreme values. That is, we assume the investor to expect either very low or very high SRI returns.

driven by an individual’s egoistic values.

However now we are interested in the second motive for investing responsibly, non-pecuniary motives. We therefore repeat the analysis and scrutinize a potential interaction between altruism and SRI return perception in Equation 7. Results are reported in Table 8.

$$\begin{aligned}
w_{SRI} = & \beta_{0,w_{SRI}} + \beta_1 \times PercRet + \beta_2 \times Altruism + \beta_3 \times (PercRet \times Altruism) \\
& + \beta_4 \times PSE + \beta_5 \times Norm + \beta_6 \times Egoism + \beta_7 \times Gender + \beta_8 \times Age \\
& + \beta_9 \times InvKH + \beta_{10} \times Income + \epsilon_{w_{SRI}} \quad (7)
\end{aligned}$$

Notably, we outline a negative relationship for the interaction between altruism and *PercRet* that is significant at the 1% level. Note that the interpretation of the coefficients for altruism and return perception of SRI again changes. Like before, the coefficient for altruism is positive and highly significant. The coefficient for *PercRet* is also positive and significant at the 1% level. This implies that an individual with theoretical altruism of zero, a high return perception of SRI results in a higher w_{SRI} . This confirms the findings above for the interaction of egoism and perceived SRI returns. We further depict this relationship through the estimation of simple slopes for the interaction effect in Figure 3.

In general, high levels of altruism imply a high w_{SRI} . Altruism leads to a higher w_{SRI} when a responsible fund’s return is perceived to be lower or similar to a conventional fund. This is in line with evidence reviewed in section 2 that suggests a “warm-glow” or “psychic” return that goes along with the investment and might offset the cost to the individual resulting from lower returns (Andreoni (1989, 1990); Beal et al. (2005); Statman (2004)). When we analyze the case that SRI returns are perceived to be higher than conventional returns, an interesting pattern emerges. Here, an increasing level of altruism leads to a decreasing weight of social responsibility in the investor’s utility function. We again decompose the moderation of *PercRet* to investigate the range in which the conditional effect of altruism on w_{SRI} is significant. We report the results in Table 10. They indicate the conditional effect to be significant for the most extreme outcomes of the distribution. This assures that altruistic individuals tend to place more weight on social responsibility when the perceived SRI return is lower than or equal to conventional investments. On the other hand, in our sample, financial returns – or their perception – can crowd out socially responsible investments. To assess the economic significance, we again focus on the two most extreme scenarios. That is, we assume that an investor either believes in very low or very high returns for responsible investments relative to conventional investments. An investor with a much lower SRI return perception has a 23.06 percentage points higher w_{SRI} in her utility function when her level of altruism increases from the 25th to the 75th percentile. When the investor perceives SRI returns to

be much higher on the other hand, the same increase in altruism translates into a decrease of w_{SRI} by 11.74 percentage points in the utility function.⁹ We further disentangle this effect. Our data show that highly altruistic individuals are responsible for this. Individuals in the 90th percentile of altruism have a 7.2% lower w_{SRI} when their SRI return perception changes from low to high. This is in line with previous evidence investigating the impact extrinsic incentives can have on intrinsic motivations. Initially stemming from the idea that a financial compensation will lower individuals’ willingness to donate blood, most of the related research is on charitable behavior (Andreoni and Payne (2011); Frey and Jegen (2001); Gneezy et al. (2011)). Moreover, incentives seem to crowd out motivation and “acceptable behavior” also when norms or social behavior are considered (Ariely et al. (2009); Frey and Oberholzer-Gee (1997); Gneezy and Rustichini (2000a,b)). The potential of a crowding-out effect is discussed in Døskeland and Pedersen (2016). We show that extrinsic incentives crowd out intrinsic motivations also in a socially responsible investment context.

Lastly, we rerun the analyses for a smaller sample to check the consistency of hypotheses H1-H4 and H5-H6. That is, we exclude all participants who display irrational behavior as outlined above in the form of risk or return reversals in the conjoint analysis. Besides the link of PSE and w_{SRI} , all hypothesized relations hold. While insignificant, the coefficient of PSE is of similar magnitude and points in the same direction. We still obtain a significant direct effect of altruism on w_{SRI} . The coefficient is slightly higher at 0.0600 and significant at the 1% level. Moreover we are able to identify a significant total effect of altruism on w_{SRI} with Norm and PSE as mediators. Again, this effect is slightly higher than in the full sample and also significant at the 1% level. As was the case in the full sample, egoism negatively affects w_{SRI} . With a significance level of 10%, we can confirm H5. When we look at H6, we obtain a positive coefficient for the interaction between egoism and PercRet that is significant at the 1% level. By verifying the regions of significance as above we assure that H6 can be confirmed. Taken together, this suggests that our findings do not change and are significant regardless of the level of participants’ rationality.

4.3 Investor Segmentation

In the following, we segment participants according to their investment preferences. We utilize the utility function as specified in section 4.1, in particular the attribute importance weights, to cluster the participants. When applying Ward’s method with squared Euclidean distance, a three cluster solution emerges (Ward (1963)). We present

⁹ The level of altruism changes by $2 = [7.25 - 5.25]$ from the 25th to the 75th percentile. This factor is then multiplied with the respective effect sizes of altruism on w_{SRI} , 0.1153 and -0.0587, as evident from Table 10. Note that for comparability we use the most extreme values. That is, we assume the investor to expect either very low or very high SRI returns.

the final cluster centers in Table 11 while displaying the average attribute importance weights respectively. We subsume the resulting clusters as return-focused, responsibility-focused, and risk-focused, based on the most prominent respective attribute importance weights. The clusters are not equally distributed. As already indicated by the average utility function above, the responsibility-focused cluster comprises the majority of participants. The respective group importance weights are significantly different between all groups except for the importance of expected return between the responsibility- and risk-focused segment and the importance of risk between the responsibility- and return-focused segment.

Based on the three different segments identified from clustering, we further analyze the respective investors' profiles in Table 12. The segment that cares most about returns is the smallest in our sample. Evidently, investors place a high value on expected return in their utility function. They moreover perceive altruistic values to be least important and obtain the highest scores on the egoism scale compared to the other segments. Further, return-focused investors are characterized by the lowest belief in SRI as measured by perceived SRI effectiveness. This effect is even amplified when looking at the moral obligation (norm) to engage in SRI. Here, participants that focus on returns significantly have the lowest score. The self-assessed return perception of SRI speaks in favor of this. It is significantly lowest among the return-focused investors relative to the other clusters. On the other hand, the return-focused cluster rates their investment knowledge to be significantly higher compared to the two other clusters. In unreported results we confirm that the relative fraction of "above average" ("below average") knowledge is highest (lowest) in the return-focused cluster. With respect to demographic characteristics, the clustering also allows some insights. The return-focused segment is dominated by males and this difference is significant compared to the other two segments. Cautious interpretation is required concerning the items Age and Net Income. Constituents of the return-focused cluster seem to be older than those of the responsibility-focused cluster. In addition, and likely related, our results hint toward more high income participants in this segment compared to the responsibility-focused segment. We are however cautious in establishing causality here as only very few people report a monthly net income above €6,000, which we classify as high income here. These differences are significant at the 10% level.

The majority of participants (55%) are included in the responsibility-focused segment. Participants that care most about an investment's social responsibility significantly score highest among the altruistic items. While there is no discernible difference between the responsibility- and risk-focused clusters, the responsibility-focused participants score significantly lower on the egoism scale than the return-focused participants. Unsurprisingly, they have a significantly higher perceived effectiveness of responsible investments compared to the return- and risk-focused

clusters. Responsibility-focused investors are characterized by the highest moral obligation to engage in SRI, as measured by our norm scale. Interestingly, they also have the relatively highest perception of SRI return. In unreported results we show that 62.1% of the participants in this segment expect SRI to perform similar to or even better than conventional investments. Nonetheless it is noteworthy that the remaining 37.9% attribute a high importance to social responsibility even though they expect lower returns. This shows that when people care about an investment's social responsibility, this can arise from an egoistic, pecuniary motive initiated by expecting higher returns. Or, a focus on an investment's social responsibility can stem from an altruistic, non-pecuniary motive. When looking at the self-assessment of investment knowledge, constituents in this segment rate themselves significantly below the return-focused segment. Compared to the individuals who focus on returns, there are less high income individuals in this segment, however the same cautious interpretation of results is required as above. Notably, the average age is the lowest in this segment. This difference is only significant when compared to the return-focused segment. In contrast to the return-focused segment and in line with other findings, the responsibility-focused segment is dominated by females (Beal and Goyen (1998); Junkus and Berry (2010); Nilsson (2008); Schueth (2003); Valor et al. (2009)).

The risk-focused segment does not stand out as much as the other two segments. While risk is of paramount importance with 53% of the investment decision, also the responsibility seems to play a role (30%). With median and mean of 5.88 for the altruism scale, this segment is significantly positioned in between the other two segments. While significantly lower on the egoism scale than the return-focused segment, there is no discernible difference between risk- and responsibility-focused investors. Just as with altruism, the risk-focused cluster is significantly located in between the other two segments with regards to the perceived effectiveness of SRI. The same can be said for the moral obligation to engage in SRI (Norm) and the return perception. The self-rated investment knowledge is the lowest among the three segments. There is no measurable difference regarding the age and net income of risk-focused investors. While insignificant ($p=0.11$), our data hint towards the risk-focused cluster having the relatively highest fraction of low income individuals. There are slightly more women than men in this segment. However the majority of women (61%) in our sample are located in the responsibility-focused cluster.

In summary, the three segments do not only differ regarding their attribute importance weights. Moreover, there are significant discrepancies regarding demographic and socio-economic characteristics. In line with previous research (Beal and Goyen (1998); Junkus and Berry (2010); Rosen et al. (1991); Valor et al. (2009)) education, parenthood, or perceived risk are not significantly different among the three segments.

5 Conclusion

To our knowledge, we are the first to provide evidence that psychological values, such as altruism and egoism, drive investment decisions. Our results indicate that two motives for responsible investing – pecuniary and non-pecuniary – can coexist. Some individuals are intrinsically motivated and derive non-monetary utility from doing good. Their engagement in SRI stems from an altruistic motive. Egoistic values are negatively associated with the decision to invest responsibly. Egoistic individuals only have a higher relative importance of social responsibility when they expect a financial payoff to their investment. Moreover we identify a crowding-out effect of financial returns. More specifically, when SRI returns are perceived to be higher than conventional fund returns, an increasing level of altruism leads to a decreasing weight of social responsibility in the utility function. Our results confirm the hypothesized relationship between values, beliefs, norms, and the resulting behavior for investing responsibly. We outline a substantial economic significance of this phenomenon.

Based on the relative importance weights in the utility function, we cluster our participants. An individual with a high relative importance of return is categorized as a relatively old, higher income, higher self-reported investment knowledge, highly egoistic male. From the latter investor segment, we can significantly distinguish individuals who have a high relative importance of social responsibility in investing. These have the relatively highest scores for altruism and norms, while being relatively young with less than average income and self-reported investment knowledge. In line with previous studies, they are more likely to be female (Beal and Goyen (1998); Junkus and Berry (2010); Schueth (2003); Nilsson (2008); Valor et al. (2009)).

Potentially, our results can inspire future models for asset prices to incorporate psychological values. Obviously, our paper provides just a first indication of the relationship between values and investment decisions. More research is needed which specifies exactly how values translate into investment decisions.

Our results also have implications for how fund managers should advertise their responsible investment products. First, investors engage in responsible assets for two distinct reasons. An investment in SRI can either stem from an intrinsic motivation caused by non-pecuniary benefits. Or, it is motivated extrinsically from the prospect of financial returns. We provide evidence for both motives. SRI mutual fund prospectuses should therefore not cater exclusively to the needs of intrinsically motivated (or altruistic) investors. Second, if a SRI fund can attract altruistic investors, the fund manager can focus on the environmental and social performance of the portfolio. These altruistic investors are unlikely to sell out if the financial performance of the fund is not as strong as that of conventional funds. Third, a focus on financial returns might even negatively affect investor behavior through crowding out. In future research, it would be

insightful to further disentangle this “trade-off” between a financial and non-financial “return” of responsible investments. Especially, given that firms’ environmental, social, and governance standards are efficiently priced nowadays (Bebchuk et al. (2013); Borgers et al. (2015)), it becomes ever more important to understand people’s non-financial motives to invest responsibly.

Tables

Table 1: Reliability of survey items

Survey Item	Cronbach's Alpha	Source
Egoism	0.820	Schwartz (1992); Nilsson et al. (2004)
Altruism	0.883	Schwartz (1992); Nilsson et al. (2004)
PSE ^a	0.792	Nilsson (2009), adjusted
Norms	0.836	Ibtissem (2010), adjusted
Attitude (Environment & So- cial)	0.918	Peloza et al. (2013), adjusted
Attitude (Weapons)	0.890	Day and Stafford (1997)

Note: This table shows the reliability of the selected survey items. Next to Cronbach's alphas as measure of reliability we report references for the chosen items.

^a Perceived SRI effectiveness

Table 2: Descriptive statistics

Measure	Value	#	%
Gender	Female	159	52.0
	Male	146	47.7
	No answer	1	0.3
Age	<21	19	6.2
	21-30	141	46.1
	31-40	52	17.0
	41-50	38	12.4
	51-60	34	11.1
	>60	16	5.2
	No answer	6	2.0
Education	Sec. modern school	7	2.3
	Secondary school	17	5.6
	Adv. vocational education	18	5.9
	Vocational training	58	19.0
	High school	72	23.5
	University	130	42.5
	Other	3	1.0
	No answer	1	0.3
Occupation	Employee	134	43.8
	Freelancer	29	9.5
	Civil Servant	20	6.5
	Homemaker	10	3.3
	Pensioner	14	4.6
	Unemployed	10	3.3
	School	4	1.3
	University / Apprenticeship	84	27.5
	Other	1	0.3
Net Income	<1499	160	52.3
	1500-3499	107	35.0
	3500-6000	25	8.2
	>6000	8	2.6
	No answer	6	2.0
Marital Status	Single	191	62.4
	Married	97	31.7
	Divorced	14	4.6
	Widowed	4	1.3

Note: This table shows the demographic profile of the 306 participants. # refers to the absolute number of participants in a category. % is the amount of participants in this category relative to the total sample.

Table 3: Self-assessed financial literacy

Measure	Value	#	%
Investment know-how	Poor	141	46.1
	Average	87	28.4
	Good	78	25.5
Investment time	None	195	63.7
	<1 year	4	1.3
	1-3 years	29	9.5
	3-5 years	23	7.5
	5-10 years	19	6.2
	>10 years	36	11.8
SRI awareness	No	109	35.6
	Yes	197	64.4

Note: This table reports the financial literacy of the 306 participants. *Investment know-how* is the self-assessed investment knowledge. *Investment time* indicates how long participants report to be engaged in the financial market. *SRI awareness* states whether a participant has heard about SRI before this survey. # refers to the absolute number of participants in a category. % is the amount of participants in this category relative to the total sample.

Table 4: Return and risk perceptions of SRI relative to conventional investments

Return perception	%	Risk perception	%
Much lower	4.60	A lot less risky	3.30
Lower	43.80	Less risky	27.50
About the same	36.60	About the same	54.20
Higher	12.10	More risky	14.40
Much higher	2.60	A lot more risky	0.30
Total	99.70	Total	99.70
(Missing)	(0.30)	(Missing)	(0.30)

Note: This table reports the return and risk perceptions of the 306 participants. *Return perception* is how the participant perceives the return of socially responsible relative to conventional investments. *Risk perception* indicates how the participant perceives the risk of socially responsible relative to conventional investments. % is the amount of participants relative to the total sample.

Table 5: Linear regressions with PSE, Norm and w_{SRI} as dependent variables

	PSE	Norm	w_{SRI}
Constant	3.9956*** (8.1180)	-1.1270* (-1.7384)	-0.1093 (-0.9755)
PSE	-	0.5244*** (7.6438)	0.0263* (1.9367)
Norm	-	-	0.0213** (2.0214)
Altruism	0.3694*** (8.4398)	0.3771*** (7.1256)	0.0485*** (4.5856)
Egoism	-0.1669*** (-2.7381)	-0.0928 (-1.3025)	-0.0272*** (-2.5967)
Gender	0.0299 (0.2188)	-0.0186 (-0.1222)	-0.0383 (1.4340)
PercRet	-0.1347* (-1.8343)	0.1467* (1.7525)	0.0843*** (5.0545)
Age	-0.0088 (-1.5256)	-0.0051 (-0.9496)	-0.0019 (-1.4883)
InvKH	0.0742 (1.1600)	0.1387** (2.0103)	0.0034 (0.2564)
Income	-0.1072 (-1.0916)	0.0842 (0.8137)	0.0335* (1.8938)
R ²	0.3071	0.4751	0.3702

Note: Linear regression results (for Equations 3 to 5) with PSE, Norm, and w_{SRI} as dependent variables. *PSE* is the perceived SRI effectiveness and measures whether an individual believes her engagement in SRI to be feasible. *Norm* is a scale measuring how far the individual feels morally obliged to engage in SRI. w_{SRI} is an individual's relative importance weight for an investment's social responsibility as determined from the conjoint analysis. *Altruism* and *Egoism* assess an individual's values. *Gender* is a dummy variable and takes the value of 1 if the individual is female. *PercRet* is the individual's return perception of SRI relative to conventional investments. Higher values indicate higher perceived SRI returns. *Age* is the individual's age. *InvKH* is the individual's self-reported investment know-how. Higher values indicate a higher know-how. *Income* is a scale measuring net income. Higher values indicate higher net income.

t-statistics (in parentheses) are derived from heteroscedasticity consistent standard errors (Long and Ervin (2000)).

Variance inflation factors (unreported) for all covariates are below 2, suggesting no multicollinearity to be present.

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Table 6: Total Effect Model with w_{SRI} as dependent variable

	w_{SRI}
Constant	0.0164 (0.1671)
Altruism	0.0703*** (8.2939)
Egoism	-0.0354*** (-3.3889)
Gender	0.0391 (1.4333)
PercRet	0.0824*** (4.8410)
Age	-0.0023* (-1.8101)
InvKH	0.0091 (0.6892)
Income	0.0313* (1.7343)
R ²	0.3371

Note: We report regression results for the Total Effect Model without mediators. w_{SRI} is an individual's relative importance weight for an investment's social responsibility as determined from the conjoint analysis. This model serves as comparison to the last column in Table 5 with w_{SRI} as dependent variable in order to assess the mediation of PSE and Norm. For definitions of the other variables see Table 5.

t -statistics (in parentheses) are derived from heteroscedasticity consistent standard errors (Long and Ervin (2000)).

Variance inflation factors (unreported) for all covariates are below 2, suggesting no multicollinearity to be present.

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Table 7: Egoism and financial incentives as motives for SRI

	w_{SRI}
Constant	0.5201** (2.3856)
PercRet	-0.1670** (-2.1968)
Egoism	-0.1375*** (-4.2324)
(PercRet \times Egoism)	0.0426*** (3.5269)
PSE	0.0221* (1.6783)
Norm	0.0233** (2.2401)
Altruism	0.0499*** (4.7955)
Gender	0.0449* (1.7129)
Age	-0.0017 (-1.4021)
InvKH	0.0045 (0.7229)
Income	0.0387** (2.2720)
R ²	0.4004

Note: Linear regression results for Equation 6 with w_{SRI} as dependent variable. w_{SRI} is an individual's relative importance weight for an investment's social responsibility as determined from the conjoint analysis. $PercRet \times Egoism$ is an interaction term between perceived SRI return and Egoism. For definitions of the other variables see Table 5.

t -statistics (in parentheses) are derived from heteroscedasticity consistent standard errors (Long and Ervin (2000)).

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Table 8: Altruism and financial incentives as motives for SRI

	w_{SRI}
Constant	0.7274** (-4.8603)
PercRet	0.3267*** (7.8657)
Altruism	0.1588*** (6.8396)
(PercRet \times Altruism)	-0.0435*** (-5.5178)
PSE	0.0249* (1.8498)
Norm	0.0210** (2.0370)
Egoism	-0.0293*** (-2.7829)
Gender	0.0414 (1.6128)
Age	-0.0018 (-1.4468)
InvKH	0.0075 (0.5904)
Income	0.0384** (2.1470)
R ²	0.4257

Note: Linear regression results for Equation 7 with w_{SRI} as dependent variable. w_{SRI} is an individual's relative importance weight for an investment's social responsibility as determined from the conjoint analysis. $PercRet \times Altruism$ is an interaction term between perceived SRI return and Altruism. For definitions of the other variables see Table 5.

t -statistics (in parentheses) are derived from heteroscedasticity consistent standard errors (Long and Ervin (2000)).

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Table 9: Conditional effect of Egoism on w_{SRI} for different values of PercRet

PercRet	Effect	t
1.0000	-0.0950***	-4.4252
1.2000	-0.0864***	-4.4559
1.4000	-0.0779***	-4.4705
1.6000	-0.0694***	-4.4524
1.8000	-0.0609***	-4.3736
2.0000	-0.0524***	-4.1892
2.2000	-0.0439***	-3.8404
2.4000	-0.0354***	-3.2790
2.6000	-0.0269**	-2.5178
2.7281	-0.0214*	-1.9684
2.8000	-0.0183*	-1.6551
3.0000	-0.0098	-0.8208
3.2000	-0.0013	-0.0999
3.4000	0.0072	0.4845
3.6000	0.0157	0.9454
3.8000	0.0242	1.3071
4.0000	0.0327	1.5928
4.2000	0.0412*	1.8211
4.3560	0.0479*	1.9684
4.4000	0.0497**	2.0060
4.6000	0.0583**	2.1578
4.8000	0.0668**	2.2842
5.0000	0.0753**	2.3905

Note: In this table we depict the effect of Egoism on w_{SRI} for varying levels of PercRet. w_{SRI} is an individual's relative importance weight for an investment's social responsibility as determined from the conjoint analysis. *PercRet* is the individual's return perception of SRI relative to conventional investments. Higher values indicate higher perceived SRI returns.

Results obtained through the Johnson-Neyman technique (Hayes (2012, 2013)). t -statistics are derived from heteroscedasticity consistent standard errors (Long and Ervin (2000)).

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Table 10: Conditional effect of Altruism on w_{SRI} for different values of PercRet

PercRet	Effect	t
1.0000	0.1153***	6.9598
1.2000	0.1066***	6.9326
1.4000	0.0979***	6.8645
1.6000	0.0892***	6.7365
1.8000	0.0805***	6.5244
2.0000	0.0718***	6.2002
2.2000	0.0631***	5.7377
2.4000	0.0544***	5.1233
2.6000	0.0457***	4.3671
2.8000	0.0370***	3.5083
3.0000	0.0283***	2.6065
3.1433	0.0221*	1.9684
3.2000	0.0196*	1.7228
3.4000	0.0109	0.9031
3.6000	0.0022	0.1721
3.8000	-0.0065	-0.4634
4.0000	-0.0152	-1.0081
4.2000	-0.0239	-1.4719
4.4000	-0.0326*	-1.8664
4.4574	-0.0351*	-1.9684
4.6000	-0.0413**	-2.2028
4.8000	-0.0500**	-2.4907
5.0000	-0.0587***	-2.7386

Note: In this table we depict the effect of Altruism on w_{SRI} for varying levels of PercRet. w_{SRI} is an individual's relative importance weight for an investment's social responsibility as determined from the conjoint analysis. *PercRet* is the individual's return perception of SRI relative to conventional investments. Higher values indicate higher perceived SRI returns.

Results obtained through the Johnson-Neyman technique (Hayes (2012, 2013)). t -statistics are derived from heteroscedasticity consistent standard errors (Long and Ervin (2000)).

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Table 11: Attribute importance weights for investor segments

	Cluster		
	Return-focus	Responsibility-focus	Risk-focus
Expected return	0.64	0.15	0.17
Risk	0.19	0.17	0.53
Social responsibility	0.17	0.67	0.30
Frequency	18.4%	55.4%	26.2%

Note: Reported are the average attribute importance weights per cluster. These weights are determined from the conjoint analysis, see Equation 2. The *Return-focused* cluster constitutes participants who mostly care about return in their investments. We cluster as *Responsibility-focused* those participants that mainly care about social responsibility. In the *Risk-focused* cluster we aggregate participants who are primarily concerned about risk. The values indicate how much weight an individual in a respective cluster places on average on the factors *Expected return*, *Risk*, and *Social responsibility*, respectively. *Frequency* indicates how many participants are elements of the three respective clusters relative to the total sample.

Table 12: Investor cluster profiles

	<u>Investor Cluster</u>		
	<u>Return</u> vs. <u>Responsibility</u>	<u>Responsibility</u> vs. <u>Risk</u>	<u>Risk</u> vs. <u>Return</u>
Altruism			
Median (Mean)	4.50 (4.68)	7.00 (6.59)	5.88 (5.88)
Significance	p<0.01	p<0.01	p<0.01
Egoism			
Median (Mean)	6.20 (6.18)	5.00 (4.97)	5.10 (5.12)
Significance	p<0.01	p=0.24	p<0.01
PSE^a			
Median (Mean)	4.00 (3.97)	5.25 (4.99)	4.50 (4.65)
Significance	p<0.01	p<0.05	p<0.01
Norm			
Median (Mean)	2.50 (2.62)	4.75 (4.37)	3.50 (3.64)
Significance	p<0.01	p<0.01	p<0.01
Age			
Median (Mean)	35 (37.24)	28 (33.53)	30 (34.78)
Significance	p<0.10	p=0.53	p=0.23
Net Income			
Median (Mean)	2.00 (1.82)	1.00 (1.54)	1.00 (1.58)
Significance	p<0.10	p=0.79	p=0.11
Perceived Return^b			
Median (Mean)	1.00 (1.36)	2.00 (1.81)	1.00 (1.56)
Significance	p<0.01	p<0.01	p<0.10
Gender^c			
Median (Mean)	1.00 (1.32)	2.00 (1.58)	2.00 (1.55)
Significance	p<0.01	p=0.69	p<0.01
Investment KH^d			
Median (Mean)	2.00 (2.20)	2.00 (1.77)	2.00 (1.56)
Significance	p<0.01	p<0.10	p<0.01

Note: For each cluster (underlined), we report median and mean for a list of variables. Moreover, we report p-values for Mann-Whitney-U tests between the respective clusters. The column “Return vs. Responsibility” for instance depicts p-values for Mann-Whitney-U tests of significance between the Return-focused and Responsibility-focused clusters.

^a Perceived effectiveness of socially responsible investments.

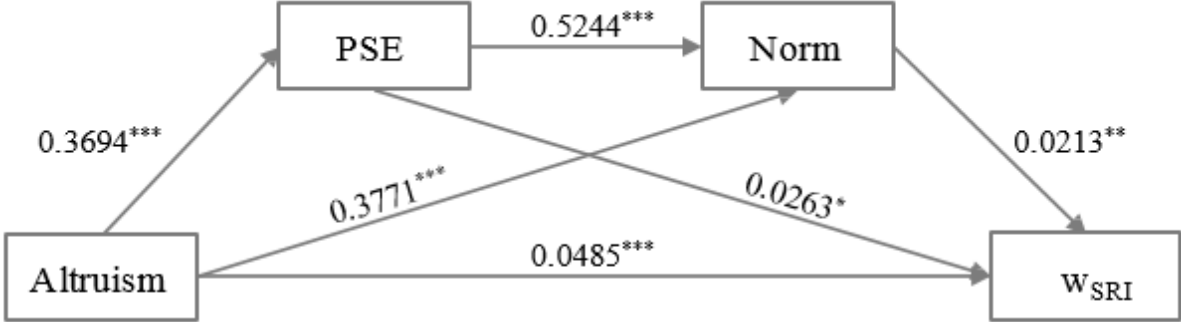
^b Self-reported perception of SRI returns recoded in “lower”, “same”, and “higher” to simplify interpretation.

^c 1=male, 2=female.

^d Self-reported investment know-how.

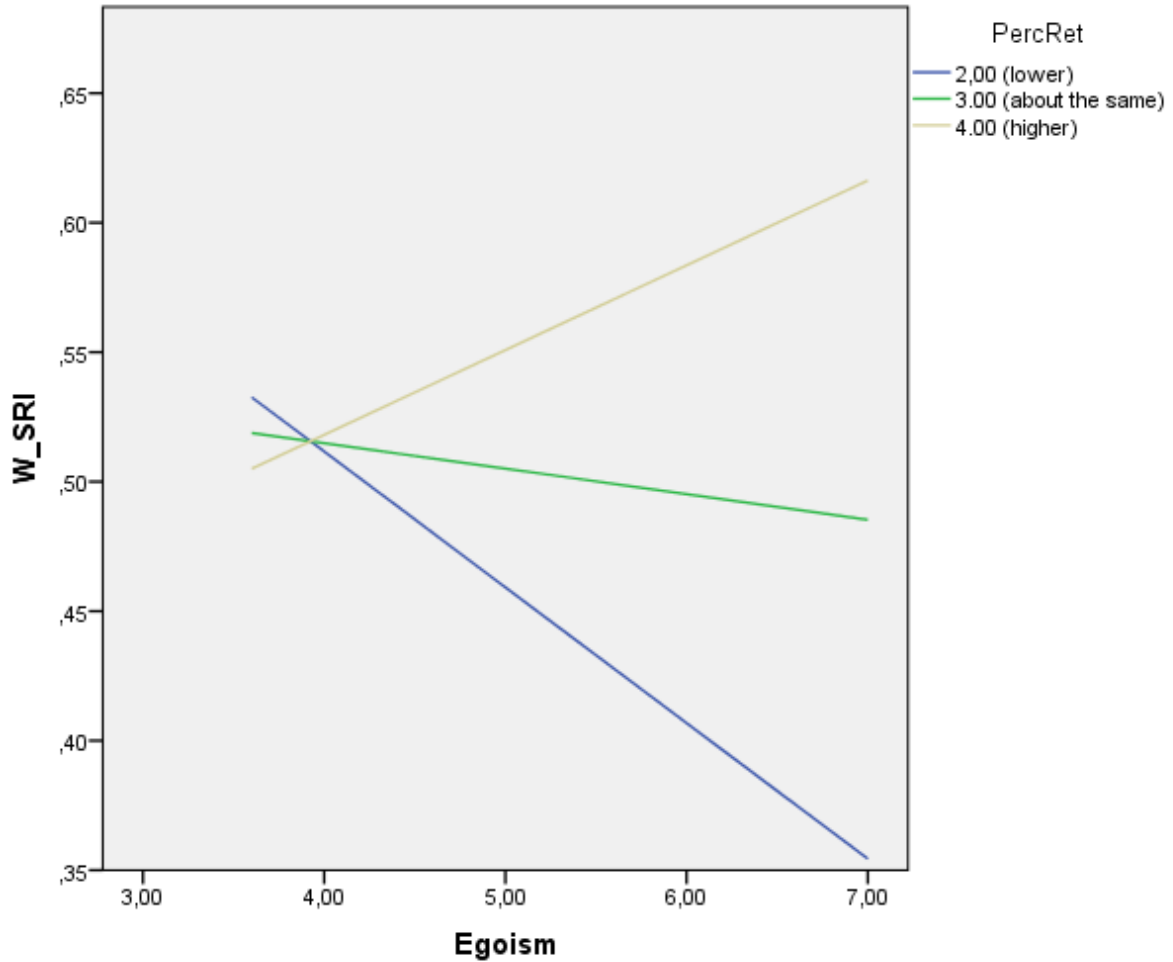
Figures

Figure 1: Causal chain for multiple mediation model



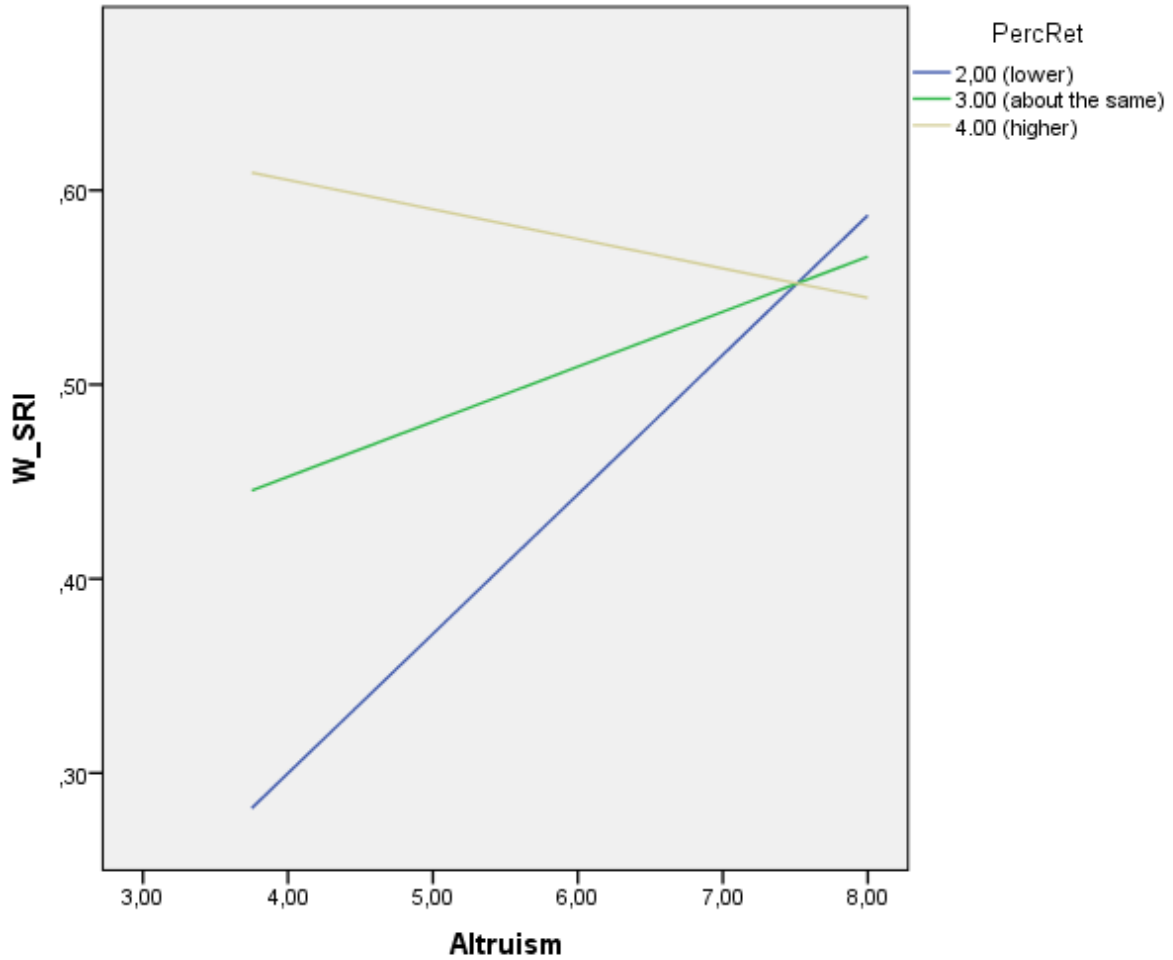
Note: Adapted causal chain from the Value-Belief-Norm theory (Stern et al. (1999)).
 The effect of Altruism on w_{SRI} is mediated through perceived SRI effectiveness (PSE) and Norm.
 The total effect coefficient is the sum of the product of all paths:
 $0.0485 + 0.3694 \times 0.5244 \times 0.0213 + 0.3771 \times 0.0213 + 0.3694 \times 0.0263 = 0.0703$.
 Coefficients are obtained from the linear regressions reported in Table 5.
 ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Figure 2: Relation between Egoism and w_{SRI} at different levels of PercRet



Note: The effect of Egoism on w_{SRI} is estimated at values of SRI perceived returns from the 10th up to the 90th percentile. More specifically, PercRet of 2 (“lower” on the Likert-scale) corresponds to the 10th and 25th, PercRet of 3 (“about the same”) corresponds to the 50th and 75th, and PercRet of 4 (“higher”) corresponds to the 90th percentile. w_{SRI} is an individual’s relative importance weight for an investment’s social responsibility as determined from the conjoint analysis. *PercRet* is the individual’s return perception of SRI relative to conventional investments. Higher values indicate higher perceived SRI returns. *Egoism* is a scale assessing how much an individual identifies with egoistic values.

Figure 3: Relation between Altruism and w_{SRI} at different levels of PercRet



Note: The effect of Altruism on w_{SRI} is estimated at values of SRI perceived returns from the 10th up to the 90th percentile. More specifically, PercRet of 2 (“lower” on the Likert-scale) corresponds to the 10th and 25th, PercRet of 3 (“about the same”) corresponds to the 50th and 75th, and PercRet of 4 (“higher”) corresponds to the 90th percentile. w_{SRI} is an individual’s relative importance weight for an investment’s social responsibility as determined from the conjoint analysis. *PercRet* is the individual’s return perception of SRI relative to conventional investments. Higher values indicate higher perceived SRI returns. *Altruism* is a scale assessing how much an individual identifies with altruistic values.

Appendix

A Survey

1. Values										
How important are the following values to you as a guiding principle in life ?										
1	<i>Authority (the right to lead or command)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
2	<i>Social power (control over others, dominance)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
3	<i>Wealth (material possessions, money)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
4	<i>Ambition (hard working, aspiring)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
5	<i>Success (achieving goals)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
6	<i>Equality (equal opportunity for all)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
7	<i>Social justice (correcting injustice, care for the weak)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
8	<i>Protecting the environment (preserving nature)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
9	<i>Unity with nature (fitting into nature)</i>									
	Not important at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Of supreme importance
		1	2	3	4	5	6	7	8	
2. Investment preferences										
<p>In the following part (on the next page) you will be presented with 11 profiles of different mutual funds. Imagine that you have already made your asset allocation and now have to evaluate the funds independently from your current portfolio. Please compare and rate the following funds on how much they are in line with your preferences, stating their attractiveness to you on a scale from 1 (not attractive at all) to 10 (very attractive).</p> <p>Definition of sustainable investments: <i>"Sustainable Investment is the general term for sustainable, responsible, ethical, social, ecological investment and any other investment processes, which includes the impact of ESG (Environment, Social and Governance) criteria in their financial analysis."</i></p> <p style="text-align: right;"><i>Forum Nachhaltige Geldanlagen (2015)</i></p>										

1	Expected Return: 15%	Risk: High	Focus: Sustainable investments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
2	Expected Return: 10%	Risk: High	Focus: Arms industry, weapons and defense technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
3	Expected Return: 15%	Risk: Low	Focus: Arms industry, weapons and defense technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
4	Expected Return: 15%	Risk: Medium	Focus: no focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
5	Expected Return: 5%	Risk: Medium	Focus: Arms industry, weapons and defense technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
6	Expected Return: 5%	Risk: Low	Focus: Sustainable investments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
7	Expected Return: 10%	Risk: Low	Focus: no focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
8	Expected Return: 10%	Risk: Medium	Focus: Sustainable investments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
9	Expected Return: 5%	Risk: High	Focus: no focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
10	Expected Return: 15%	Risk: Low	Focus: no focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
11	Expected Return: 5%	Risk: Low	Focus: no focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Very attractive
	Not attractive at all	1	2	3	4	5	6	7	8	9	10	
12	Please rate your top 3 funds in descending order.											
	<div style="display: flex; justify-content: space-around; width: 100%;"> <div style="border-bottom: 1px solid black; width: 20%;"></div> <div style="border-bottom: 1px solid black; width: 20%;"></div> <div style="border-bottom: 1px solid black; width: 20%;"></div> </div> <p style="text-align: center;">(please indicate number of the respective fund (1-11))</p>											
	Top 1	Top 2	Top 3									

3. Investment knowledge and beliefs about SRI	
In the following part some questions considering your investment experience and your perceptions of socially responsible investments will be asked.	
1	<p><i>How would you rate your investment knowledge?</i></p> <p style="text-align: center;">Very poor Poor Average Good Very good</p> <p style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
2	<p><i>How long have you been investing?</i></p> <p style="text-align: center;"><input type="checkbox"/> not at all <input type="checkbox"/> 1 to 3 years <input type="checkbox"/> 5 to 10 years</p> <p style="text-align: center;"><input type="checkbox"/> up to 1 year <input type="checkbox"/> 3 to 5 years <input type="checkbox"/> more than 10 years</p>
3	<p><i>Have you heard of socially responsible investments (e.g socially responsible mutual funds) before this survey?</i></p> <p style="text-align: center;">No Yes</p> <p style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/></p>
4	<p><i>How do you assess the risk of socially responsible investments in comparison to conventional ones?</i></p> <p style="text-align: center;">A lot less risky Less risky About the same More risky A lot more risky</p> <p style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
5	<p><i>How do you assess the performance of socially responsible investments in comparison to conventional ones?</i></p> <p style="text-align: center;">Much lower Lower About the same Higher Much higher</p> <p style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
Please indicate below your level of agreement with the following statements.	
6	<p><i>By investing in SRI every investor can have a positive effect on the environment.</i></p> <p style="text-align: center;">I do not agree at all <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 I strongly agree</p>
7	<p><i>Every person has the power to influence social problems by investing in responsible companies.</i></p> <p style="text-align: center;">I do not agree at all <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 I strongly agree</p>
8	<p><i>It does not matter if I invest in socially responsible mutual funds since one person acting alone cannot make a difference.</i></p> <p style="text-align: center;">I do not agree at all <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 I strongly agree</p>
9	<p><i>It is useless for the individual investor to contribute to the reduction of pollution with investments in SRI.</i></p> <p style="text-align: center;">I do not agree at all <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 I strongly agree</p>

4. Norms								
Please indicate below your level of agreement with the following statements.								
1	<i>I feel morally obliged to invest in SRI, regardless what others do.</i>							
	I do not agree at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I strongly agree
		1	2	3	4	5	6	7
2	<i>I would be a better person if I invested in SRI.</i>							
	I do not agree at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I strongly agree
		1	2	3	4	5	6	7
3	<i>I feel personally obliged to contribute to the solution of social problems with my investments.</i>							
	I do not agree at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I strongly agree
		1	2	3	4	5	6	7
4	<i>I feel a sense of personal obligation not to invest in companies that harm the environment.</i>							
	I do not agree at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I strongly agree
		1	2	3	4	5	6	7
5	<i>To what degree do you value taking care of the environment?</i>							
	Not at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To a great extent
		1	2	3	4	5	6	7
6	<i>How much do you value making environmentally and socially sustainable choices?</i>							
	Not at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To a great extent
		1	2	3	4	5	6	7
7	<i>To what degree do you value conserving our natural resources?</i>							
	Not at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To a great extent
		1	2	3	4	5	6	7
8	<i>To what degree do you think it is important to consider our impact on the environment?</i>							
	Not at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To a great extent
		1	2	3	4	5	6	7
9	<i>My feelings towards weapons are:</i>							
	bad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	good
		1	2	3	4	5	6	7
10	<i>I feel favorable / unfavorable towards weapons.</i>							
	unfavorable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	favorable
		1	2	3	4	5	6	7
11	<i>I have negative / positive feelings towards weapons.</i>							
	negative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	positive
		1	2	3	4	5	6	7

Please indicate below how important you consider the following aspects in (your) investment decisions.	
12	<p><i>Governance issues (e.g. management board remuneration, bribery, corruption)</i></p> <p>Not important at all <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Very important</p> <p>1 2 3 4 5 6 7</p>
13	<p><i>Social issues (e.g. animal testing, child labor, human rights)</i></p> <p>Not important at all <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Very important</p> <p>1 2 3 4 5 6 7</p>
14	<p><i>Environmental issues (e.g. nuclear power, genetic engineering, pollution, climate change)</i></p> <p>Not important at all <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Very important</p> <p>1 2 3 4 5 6 7</p>
5. Demographics	
1	<p><i>What is your gender?</i></p> <p><input type="checkbox"/> male <input type="checkbox"/> female</p>
2	<p><i>What is your age?</i></p> <p>_____ years old (please enter your age)</p>
3	<p><i>Marital status?</i></p> <p><input type="checkbox"/> single <input type="checkbox"/> divorced <input type="checkbox"/> married <input type="checkbox"/> widowed</p>
4	<p><i>Do you have children (if yes, how many)?</i></p> <p><input type="checkbox"/> no <input type="checkbox"/> yes _____ children (please enter number)</p>
5	<p><i>What is your highest degree of education?</i></p> <p><input type="checkbox"/> Secondary modern school <input type="checkbox"/> High school / matriculation standart <input type="checkbox"/> Secondary school <input type="checkbox"/> University degree <input type="checkbox"/> Advanced vocational education <input type="checkbox"/> other: _____ <input type="checkbox"/> Vocational training</p>
6	<p><i>What is your current employment?</i></p> <p><input type="checkbox"/> Employed <input type="checkbox"/> Housewife/houseman <input type="checkbox"/> in school <input type="checkbox"/> Self-employed <input type="checkbox"/> Retired <input type="checkbox"/> in university/apprenticeship <input type="checkbox"/> Civil servant <input type="checkbox"/> looking for work <input type="checkbox"/> other: _____</p>
7	<p><i>What is your monthly net income?</i></p> <p><input type="checkbox"/> up to 1.499€ <input type="checkbox"/> 3.500€ to 6.000€ <input type="checkbox"/> 1.500€ to 3.499€ <input type="checkbox"/> more than 6.000€</p>
8	<p><i>Do you belong to a church or religious community? If yes, please specify.</i></p> <p><input type="checkbox"/> Yes, catholic <input type="checkbox"/> Yes, orthodox <input type="checkbox"/> Yes, protestant <input type="checkbox"/> Yes, other: _____ <input type="checkbox"/> Yes, muslim <input type="checkbox"/> No, undenominational</p>

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