Comparing those who do, might and will not invest in sustainable funds - A survey among German retail fund investors

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Abstract
In this paper we present the results of an online questionnaire among private German mutual fund investors. Thereby we are the first to analyze the differences between three groups: sustainable investors, conventional investors that are either generally interested or those that are not interested at all to invest in socially responsible (SR) funds. We provide evidence on motives and attitudes of these three investor groups. Showing that SR investors are quite similar to those interested in investing sustainably and very different from those who only consider investing conventionally. All three groups agree that sustainable actions of a company affect its stock price positively. Yet, they all belief that SR funds perform worse than conventional funds. Nevertheless, some still invest in SR funds. Consequently, different motives and attitudes are the determining factors when it comes to making an investment decision. These differences will be extensively discussed on the following pages.

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1. Introduction

During the last two decades the area of socially responsible investments (SRI) has grown substantially. Between 1995 and 2007 SRI assets in the U.S. rose more than 300% to $2.71 trillion in 2007 (Social Investment Forum (2007)). The German market grew about 16.3% with respect to 2011 values. In 2012 it is estimated to have a volume of €73.3 billion (see Forum Nachhaltige Geldanlagen (2013)). One possibility for private investors to participate in the SRI market is to invest in socially responsible (SR) funds. According to Vigeo Rating (2012) their share of the SRI market in Germany is roughly 14%. Currently, this corresponds only to 0.6% of the total volume of the German mutual retail fund market. Therefore, it has great potential to grow strongly in the following years, especially when Germany is compared to Belgium, the European frontrunner, where SR funds amount almost to a total of 9% of the volume of the Belgian mutual retail fund market (see Vigeo Rating (2012)).

Whereas the supply side for sustainable funds is quite visible (vgl. http://www.nachhaltiges-investment.org/) and the products are known, very little information is attainable regarding the demand side. We try to shed light on the people investing in SR funds, so-called sustainable, green, socially conscious or simply SR investors. In the following, we primarily use the latter term since it seems to be the one most commonly used these days. SR investors’ preferences go beyond only considering risk and return when making an investment decision as it is expected for a rational investor (see Statman (2005)). They additionally include non-financial measures like social, ethical, or environmental (SEE) criteria in their considerations when thinking about investing in a corporation. In other words, a company should be profitable and should conform to a certain minimum corporate social responsibility (CSR) standard; otherwise, it is an unsuitable investment for an SR investor.

To date, the survey-based evidence on investors into SR funds is geographically very segmented, and the research questions are fairly diverse. An overview regarding the surveys of the last three decades can be found in Wins and Zwergel (2014). Besides our survey only Dorfleitner and Utz (2012) take a look at German SR investors. They concentrate on German investors in general whom they first segment into three subgroups, namely private investors, asset managers, and institutional investors. There is no strict author-defined differentiation between SR and conventional investors. Nonetheless, their survey gives a very good impression on the general motives for investing in SR funds. However, since they had to keep the questions very general in order to be able to pose meaningful questions for participants from investors to asset managers they did not have the possibility to directly employ questions and constructs that are common in the SR investor survey literature.

The key contributions of this paper are three-fold:

We are first to analyze the differences between three groups: sustainable investors (SR), conventional investors that are either generally interested (INT) or those that are not interested at all (CONV) to invest in SR funds. Thereby we provide evidence on the motives and attitudes of these three investor groups especially concerning pro-social influences. Using the classification tree (CT) method we show that SR investors are quite similar to those interested in investing sustainably and very different from those who only consider investing conventionally. Employing ordinal logistic regression analysis (OLR) we determine influential factors on the percentage of SR funds in an investor’s fund portfolio.

Secondly, we are first to describe the fund investors’ views regarding the influence of sustainability in general and regarding its elements: ecological, ethical, and social issues on the performance of companies.

Thirdly, we examine the question of how SR funds ought to be designed, e.g. which investment strategies they ought to employ, to appeal to investors.

The remainder of the paper is organized as follows. In the next section, we develop hypotheses with respect to the existing literature for SR, INT, and CONV investors, followed by the description of our study design and the demo-
graphic profile of the three investor groups (Section 3). In Section 4, we further survey investor type characteristics and thereby investigate the previously claimed hypotheses. Two different multivariate methods of analysis (OLR, CT method) are applied in Section 5 to fathom influential factors for SR investing behavior as well as an indication for essential investor group differences and reasons of INT investors for not investing in SR funds. A conclusion is drawn in Section 6.1

2. Literature Review and Hypothesis Development

2.1. Demographics

Previous research (e.g. Rosen, Sandler, and Shani (1991), Tippet and Leung (2001), Schueth (2003), McLachlan and Gardner (2004), Nilsson (2008), Junkus and Berry (2010), Cheah, Jamali, Johnson, and Sung (2011), Pérez-Gladish, Benson, and Faff (2012)) concerning the comparison of the demographic profiles of ethical and conventional investors led a priori to some common beliefs concerning different socio-demographic characteristics like gender, age, educational background, income level, or the place of residence. This is quite surprising since study results are rather diverse and sometimes even contradictory: often due to problems of representativeness as well as temporal and/or geographical differences of the respective data. Since our sample is not representative we refrain from explicit comparisons with other survey results. Nonetheless, we will test the following hypothesis fitted to our three investor groups (SR, INT, and CONV investors) concerning the connection between demographics and investment behavior.

Several studies (e.g. Rosen, Sandler, and Shani (1991), Tippet and Leung (2001), Junkus and Berry (2010), Cheah, Jamali, Johnson, and Sung (2011)) have already shown that due to SRI being a recent movement ethical investors tend to be younger and predominantly female as “women (...) [bring] a natural affinity to the concept of socially responsible investing with them” Schueth (2003).

H1a: The proportion of female investors rises with the respondents’ involvement to SR investing (from CONV to INT to SR investors).

H1b: SR investors will be younger than their inactive (INT) or conventional (CONV) counterparts.

“[T]he better-informed investors are, the more responsible their actions tend to be” Schueth (2003). Therefore, it seems to be reasonable to assume a positive link between the respondents’ educational degree and their involvement to SR investing (see also Rosen, Sandler, and Shani (1991), Nilsson (2008), Tippet and Leung (2001), Cheah, Jamali, Johnson, and Sung (2011)).

H1c: The proportion of better educated (university graduate) investors rises with the respondents’ involvement to SR investing (from CONV to INT to SR investors).

Concerning the income and wealth level of ethical compared to conventional investors, contradictory views are advanced in the literature. Whereas Junkus and Berry (2010), Tippet and Leung (2001), and Rosen, Sandler, and Shani (1991) characterize SR investors to be “less affluent” or/and having “lower median household (...) incomes”, McLachlan and Gardner (2004), Nilsson (2008), as well as Cheah, Jamali, Johnson, and Sung (2011) assume that better earning and/or wealthier investors “may be more willing to tolerate ‘ethical penalty’”. Following this reasonable assumption, we suppose:

H1d: The proportion of investors with a higher income level rises with the respondents’ involvement to SR investing (from CONV to INT to SR investors).

Some researchers (e.g. Nilsson (2008), Pérez-Gladish, Benson, and Faff (2012)) a priori propose SEE issues and therefore SR investing to be predominantly relevant for larger cities’ inhabitants, whereas rural areas are less affected. Hence, we adopt:

H1e: The proportion of investors living in urban areas rises with the respondents’ involvement to SR investing (from CONV to INT to SR investors).

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Beyond that, we assume SR investors to be more frequently and stronger involved in social and family structures. Therefore, we suppose:

**H1f:** SR investors will be more likely to be (quasi) married and parents than their inactive (INT) or conventional (CONV) counterparts.

Furthermore, we expect SR investors to be more dedicated to voluntary activities as an additional expression of their responsible lifestyle. This assumption will be reconsidered in detail under hypothesis H2b.

### 2.2. Social, Environmental, and Ethical (SEE) Factors (Pro-social Influence)

Many studies discuss SR investors’ possible motives (e.g. Anand and Cowton (1993), Beal and Goyen (1998), Beal, Goyen, and Phillips (2005), Haigh (2008), and Jansson and Biel (2011)). However, very few papers focus on them and empirically go beyond what we describe in the section on investment strategies (e.g. negative screening criteria). Especially, the question why the topic sustainability is important for them remains unanswered. We apply three scales developed by Nilsson (2008) to fathom the motives that drive SR investors when they assign capital to ethical funds: Pro-social attitudes (PSA), trust and perceived consumer effectiveness (PCE).

PSA and pro-social consumer behavior are interlinked. However, many studies report that this connection is not as strong as one might think. Instead, there seems to be an “attitude-behavior gap” (Boulstridge and Carrigan (2000)). People rarely “put their money where their mouth is” Beal and Goyen (1998)).

Vyvyan, Ng, and Brimble (2007) conduct an investment preference experiment and reveal that all investors, including individuals who rate environmental concerns highly, rank performance-related criteria the highest. This provides further support for an attitude-behavior gap. Nonetheless, Nilsson (2008) shows that PSA regarding the issues addressed by SR funds significantly impact consumer behavior in a positive manner (questions see Appendix A: Pro-social Influence).

**H2a:** PSA regarding the issues addressed in SRI will affect consumer behavior for SR funds in a positive way.

Following this train of thought, it is also plausible to assume that people, who engage in voluntary activities, thus not only stating PSA but acting in a pro-social fashion, will be more likely to invest in SR funds.

**H2b:** Voluntary activities will affect consumer behavior for SR funds in a positive way.

In the pro-social consumer behavior domain, consumer skepticism and confusion about environmental and social claims have become a serious problem (e.g. Crane (2000)). Additionally, green claims used in advertising are not seen as credible and trustworthy, often resulting in the rejection of green products. Accordingly an investor who trusts in pro-social claims made by SR funds should be more likely to invest in SR funds than someone who does not believe in the claims made by SR funds. However, Nilsson (2008) can neither support a positive nor a negative impact of trust in pro-social claims made by SR funds on consumer behavior.

**H2c:** Trust in pro-social claims made in SRI will affect consumer behavior for SR funds in a positive way.

Among others Straughan and Roberts (1999) state that perceived consumer effectiveness (PCE) refers to the assumption that consumers are more likely to act according to environmental appeals if they have confidence that their behavior will help to solve the issue at hand. They show that PCE is the strongest predictor of ecologically conscious consumer behavior. Nilsson (2008) adopts this concept for individuals investing in SR funds. His findings show a significant positive impact of PCE with regard to investing in SR funds.

**H2d:** PCE with regards to SRI will affect consumer behavior for SR funds in a positive way.

### 2.3. Sustainability Defined and its Influence on Return

Many studies’ (e.g. Pérez-Gladish, Benson, and Faff (2012), Sandberg and Nilsson (2011),

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2 For a further discussion on the links between pro-social attitudes, pro-social consumer behavior, perceived consumer effectiveness, and trust in SRI, see Nilsson (2008).
McLachlan and Gardner (2004), Anand and Cowton (1993)) respondents are asked regarding the investment strategies that a fund should employ. Almost every study deals with negative screening criteria somehow or other. We will discuss this topic in a later chapter because we are of the opinion that one should first try to define the term sustainability before investment strategies are discussed. According to the European SRI study from 2012, published by Eurosif (the European Sustainable Investment Forum) “no consensus on a unified definition of SRI exists within Europe”. Instead the term SRI strongly depends on the cultural and historical background of each country. Therefore, we present the definition of FNG (Forum Nachhaltige Geldanlagen)3: “Sustainable investments supplement the traditional criteria of profitability, liquidity and security with environmental, social and ethical evaluation criteria.” But how do investors define sustainability and hence sustainable investments and how important is the topic sustainability for them in general? To our knowledge we are the first to confront investors with these questions in detail.

Since, the three investor groups (SR, INT and CONV), according to our definition, differ in their degree of interest in SRI and their actual investment behavior, it is plausible to expect the following:

**H3a:** SR, INT and CONV investors will hold different views on the constituting elements of sustainability.

We assume that the definition of sustainable investments given by the FNG is the consensus that has been reached by its members. Therefore, it could be representative for German SR investors. Accordingly, we assume:

**H3b:** SR investors will hold a holistic view on sustainability.

As Rosen, Sandler, and Shani (1991) already notes, ethical investors do not regard ethical investments as a charitable donation. Accordingly, SR investors might expect a positive link between sustainability and financial performance. Since INT and CONV investors do not invest in SR funds, we expect them to be of the opinion that sustainability negatively affects stock returns. Subsequently, we assume:

**H3c:** SR investors assume that a positive link between sustainable actions of companies and their financial performance exists.

**H3d:** INT and CONV investors assume that a negative link between sustainable actions of companies and their financial performance exists.

### 2.4. Financial Perceptions of SR funds (Profit Orientated Influence)

Although many studies concerning the performance of equity SR funds have already been conducted and several reviews (e.g. Hoepner and McMillan (2009), Chegut, Schenk, and Scholtens (2011), Rathner (2012), Hofmann and Klein (2013)) have been written, no significant under- or outperformance compared to conventional investments has been proven. But often the subjective assessment fairly differs from the objective one. Nevertheless, the subjective perception of financial return and risk are the central decision-making factors in any investment decision (Nilsson (2008)). As the primary aim of investing money is to receive financial return, these subjective perceptions are expected to raise the probability of holding any SR funds independent of the attitude toward the consideration of SEE issues if the investor is of the opinion that SR funds perform better than conventional funds. This leads to the following hypotheses:

**H4a:** SR, INT and CONV investors’ return perception of ethical funds compared to conventional funds differ with CONV investors assuming the most negative return difference.

**H4b:** SR, INT and CONV investors’ risk perception of ethical funds compared to conventional funds differ with CONV investors assuming the most negative risk difference.

Further hypotheses concerning investors’ expectations toward financial and non-financial issues can be devised following particularly McLachlan and Gardner (2004) and Pérez-Gladish, Benson, and Faß (2012). SR investors

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3 http://www.forum-nng.org/en/sustainableinvestments/sustainableinvestments.html
pursue wealth creation, as the general aim of investments just like a conventional investor. However, SR investors additionally impose the constraint to conform to certain ethical standards, occasionally also described as some kind of ‘ethical penalty’ (Cheah, Jamali, Johnson, and Sung (2011)). Therefore, we expect:

**H4c**: SR investors will be less profit orientated than INT and CONV investors.

According to portfolio theory, an increased risk due to reduced diversification in SR portfolios can be assumed (Pérez-Gladish, Benson, and Faff (2012)). Subsequently, it can be anticipated that:

**H4d**: SR investors will be less risk averse than INT and CONV investors.

Beyond that, according to McLachlan and Gardner (2004), ethical investors will rate ethical issues as more important to their investment decision than conventional investors. Nevertheless, several studies (e.g. Rosen, Sandler, and Shani (1991), Sandberg and Nilsson (2011), Dorfleitner and Utz (2012)) indicate that most SR investors are not willing to sacrifice a considerable amount of financial return. Bringing together both aspects, we assume:

**H4e**: SR investors are concerned about financial as well as non-financial characteristics of their investments.

### 2.5. Investment Strategies

Since the survey of Rosen, Sandler, and Shani (1991), where respondents were asked to list factors that “are most important in determining whether a company’s behavior can be considered socially responsible”, most studies have focused on exclusion as the major investment strategy of SR investors, because Rosen, Sandler, and Shani (1991) report that an “overwhelming majority of responses (83 percent) relate to avoidance activities: “bad” things the firm should not do”. McLachlan and Gardner (2004) are among the first to explicitly include engagement, confrontation and inclusion as possible investment strategies in their survey among conventional and ethical Australian investors. This seems to be very reasonable, since the latter is closely linked to the ‘best in class’ investment approach which has become very popular among fund managers. This approach is very similar to the conventional way of constructing a portfolio where stocks are included given that they meet preset criteria regarding return and risk. In Michelson, Wailes, Van Der Laan, Sandra, and Frost (2004), best in class is described as a means of selecting companies for an SR fund that belong to an apparently ‘bad’ industry, but who are the most responsible in their trade.

Sparkes and Cowton (2004) states that when engagement is practiced “socially responsibility concerns will be implemented not directly in the composition of the portfolio but by using shareholder ownership rights to influence corporate behavior, seeking to steer it in a more socially responsible direction”. Whereas McLachlan and Gardner (2004) describe confrontation as an investment strategy, that seeks to publicly embarrass a company.

According to the above descriptions, exclusion, engagement and confrontation appear to be more closely linked to socially responsible than to conventional investing:

**H5a**: There will be a greater proportion of SR and INT investors than CONV investors choosing exclusion, engagement, or confrontation as their preferred investment strategy, whereas for inclusion the reverse is expected.

Since exclusion seems to be the strategy with the longest tradition among SR investors, we follow Rosen, Sandler, and Shani (1991), Anand and Cowton (1993), McLachlan and Gardner (2004) and Dorfleitner and Utz (2012) through confronting our respondents with topics related to ecological, social, and moral dimensions. These issues are often mentioned in the academic literature and in SR fund prospectuses where they are used as negative screening criteria (e.g. child labor (social), animal experiments (moral), extraction of raw materials (ecological)). Therefore, they seem to be important SRI issues. We expect that SR investors’ concern about sustainability will be mirrored by strong views regarding the importance of the presented issues.

**H5b**: SR and INT investors will rate sustainable issues as more important to their investment decisions than CONV investors.
3. Survey Design and Data Collection

3.1. Sampling Procedure

To gather information about private German mutual fund investors, their attitudes toward SRI, their beliefs, morals and motives, and their investment behavior, as well as to investigate differences between different investor groups (SR, INT, and CONV investors), we created an extensive online survey for the German-speaking market, originally in German. The survey period lasted from January 19, 2012 to July 15, 2012. To reach a link to the relevant research issues in the existing literature, questions from different papers (e.g. Lewis and Mackenzie (2000a), McLachlan and Gardner (2004), Nilsson (2008), and Sandberg and Nilsson (2011)) were brought together and supplemented. Following McLachlan and Gardner (2004), we did not present the study as being about sustainability, to keep participants from shifting their answers in a more socially desirable direction. Thus minimizing the potential impact of social desirability bias (Chung and Monroe (2003)). The questionnaire was published on and distributed via several German investment fund-related (ethical and conventional) fora, websites, and foundations, as well as among other researchers. Hence, we reached a sample independent of any one fund provider or association. The respondents identified themselves as ethical investors (‘I have already invested money in ethical funds’), being interested in SRI (‘I never have invested money in ethical funds, but I am interested in’), or conventional investors (‘I have not invested money in ethical funds, nor am I interested in investing in ethical funds’). After sorting out unusable replies (e.g. no target group member, inconsistent answers, unfeasible duration time, etc.) and those without the above ‘grouping’ question, the dataset comprises 421 respondents: 72 of them being current or former SR investors, 155 being interested in SRI, and 194 being conventional investors. Due to the extensiveness or partial complexity of the questionnaire, not all participants answered all questions. Therefore, the dataset comprises certain missing values. Wherever necessary or reasonable, the relevant number of respondents is given by N.

3.2. Participants’ Demographics

All relevant results are displayed in Table 1. Since there are two coexistent SR investor definitions in the literature (current SR investors; current and former SR investors), we include distribution values as well as p-values for the Chi-squared test and Goodman-Kruskal gammas (rank correlations) for both investor definitions in Table 1. However, due to the small number of twelve former SR investors in the sample, no relevant changes neither in the distribution values nor in the test significances or the rank correlations were observable.

Our whole sample is predominantly male (~83%), young to middle aged and throughout well educated (~69% university graduates). Most participants live in mid-sized or big cities (~72%) and four out of nine respondents have an available monthly household net income above €3,600. A majority is (quasi) married (~55%) and (still) childless (~63%). Furthermore, with about 57% holding a total investment amount of less than €20,000, the majority of our sample seems to be not very wealthy. Significant differences between SR, INT, and CONV investors were discovered for the gender ratio, the age distribution, as well as the variables family status, parenthood, and voluntary activities. Nevertheless, an interpretable relationship due to the significance of Goodman-Kruskal gamma can only be stated for the gender relation and the variables family status and voluntary activities: The proportion of female investors rises significantly with the personal involvement to SR issues (from CONV to INT to SR investors), thus supporting hypothesis H1a. The same (tendency) can be constituted for (quasi) married investors as well as the proportion of volunteers. Significant differences in the age distribution and the status of parenthood for the three investor types are observable, but there is no clear tendency subject to the level of SR involvement: whereas the INT and CONV investors seem to be predominantly young, a majority of the SR investors is middle aged. SR investors are about 1.9 (1.4) times more often parents than INT (CONV) investors. All togeth-
er, these results do not support hypothesis H1b but H1f. However, no significant differences between the three investor types were found for the educational degree, the income level, the place of residence, and the total amount invested. Hence, no significant support for hypotheses H1c to H1e is given.

Table 1: Demographic Characteristics

| Variable                  | current SR (current and former SR) [%] | INT [%] | CONV [%] | Total Sample [%] | $\chi^2$ a | Goodman-Kruskal gamma |
|---------------------------|---------------------------------------|---------|----------|------------------|------------|----------------------|
| Gender                    |                                       |         |          |                  |            |                      |
| Male                      | 76.7 (78.4)                           | 78.9    | 88.3     | 83.3 (83.5)      | 5.078*     | -0.296**              |
| Female                    | 23.3 (21.6)                           | 21.1    | 11.7     | 16.7 (16.5)      |            |                      |
| Age                       |                                       |         |          |                  |            |                      |
| < 36                      | 29.5 (36.5)                           | 57.1    | 50.7     | 49.4 (50.2)      |            |                      |
| 36 - 55                   | 56.8 (50.0)                           | 36.3    | 35.3     | 39.1 (38.4)      |            |                      |
| > 55                      | 13.6 (13.5)                           | 6.6     | 14.0     | 11.4 (11.5)      |            |                      |
| Median                    | 40.5 (38.0)                           | 35.0    | 35.0     | 36.0 (35.0)      |            |                      |
| Mean                      | 41.4 (40.5)                           | 36.3    | 39.3     | 38.6 (38.5)      |            |                      |
| StD                       | 10.5 (11.4)                           | 12.3    | 14.9     | 13.5 (13.5)      |            |                      |
| Education                 |                                       |         |          |                  |            |                      |
| Not university graduate   | 22.7 (26.9)                           | 28.3    | 34.3     | 30.4 (31.0)      | 2.421      | -0.177               |
| University graduate       | 77.3 (73.1)                           | 71.7    | 65.7     | 69.6 (69.0)      |            |                      |
| Income c                  |                                       |         |          |                  |            |                      |
| Lower income (< €3,600)   | 55.3 (55.6)                           | 61.3    | 49.6     | 54.3 (54.4)      | 2.563      | 0.139                |
| Higher income             | 44.7 (44.4)                           | 38.7    | 50.4     | 45.7 (45.6)      |            |                      |
| Place of residence        |                                       |         |          |                  |            |                      |
| Countryside/Small city (< 20,000 inhabitants) | 29.5 (26.9) | 28.6 | 26.8 | 27.8 (27.4) | 0.161 (0.093) | 0.047 (0.015) |
| Mid-size city/Big city    | 70.5 (73.1)                           | 71.4    | 73.2     | 72.2 (72.6)      |            |                      |
| Family Status             |                                       |         |          |                  |            |                      |
| Single/Divorced/Widowed   | 27.3 (32.7)                           | 43.5    | 50.4     | 44.4 (44.9)      | 7.261**    | -0.259***            |
| Married/Partnership       | 72.7 (67.3)                           | 56.5    | 49.6     | 55.6 (55.1)      |            |                      |
| Parenthood                |                                       |         |          |                  |            |                      |
| Yes                       | 52.3 (48.1)                           | 27.5    | 37.5     | 36.5 (36.2)      | 7.978**    | -0.060 (0.043)       |
| No                        | 47.7 (51.9)                           | 72.5    | 62.5     | 63.5 (63.8)      |            |                      |
| Voluntary Activities      |                                       |         |          |                  |            |                      |
| Yes                       | 60.9 (57.4)                           | 35.9    | 36.4     | 40.3 (40.2)      | 9.713***   | 0.221**              |
| No                        | 39.1 (42.6)                           | 64.1    | 63.6     | 59.7 (59.8)      |            |                      |
| Amount Invested           |                                       |         |          |                  |            |                      |
| Co                        | 0.0 (5.7)                             | 12.9    | 12.7     | 10.5 (11.4)      |            |                      |
| €1-€20,000                | 53.3 (51.4)                           | 54.8    | 36.7     | 46.2 (46.0)      | 17.678     | 0.073 (0.103)        |
| €20,001-€40,000           | 16.7 (14.3)                           | 14.5    | 15.2     | 15.2 (14.8)      |            |                      |
| €40,001-€60,000           | 10.0 (11.4)                           | 9.7     | 8.9      | 9.4 (9.7)        |            |                      |
| €60,001-€80,000           | 0.0 (0.0)                             | 0.0     | 7.6      | 3.5 (3.4)        |            |                      |
| €80,001-€100,000          | 3.3 (2.9)                             | 0.0     | 2.5      | 1.8 (1.7)        |            |                      |
| >€100,000                 | 16.7 (14.3)                           | 8.1     | 16.5     | 13.5 (13.1)      |            |                      |

* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level

a Chi-squared test based on case numbers of current SR, INT and CONV investors

b Chi-squared test based on case numbers of current and former SR, INT and CONV investors

c household net income per month
4. Investor Type Characteristics

4.1. Social, Environmental, and Ethical (SEE) Factors (Pro-social Influence)

According to Nilsson (2008) pro-social attitudes (PSA) towards the SEE issues addressed by SR funds, trust in SR funds and the perceived consumer effectiveness (PCE) regarding the ability of SR funds to solve the issues addressed in SRI describe the pro-social influences on socially responsible investment behavior. Since each of the three constructs is composed of several questions (see Appendix A) that relate to social, environmental, and ethical factors, we think that PSA, PCE, and trust go beyond the aspect of social influence: They additionally incorporate possible morals and motives of investors. Table 2 displays the results of the three constructs for our sample.

| Table 2: Pro-social attitudes (PSA), Perceived consumer effectiveness (PCE), Trust in SR funds and their connections to the percentage of capital invested in SR funds |
|---------------------------------|----------|----------|----------|----------|----------|----------|-------------------|
|                                | CONV     | INT      | 0% in SRI | 1-20% in SRI | 21-80% in SRI | 81-100% in SRI | Cronbach’s Alpha |
| PSA                             | Mean     | 2.71     | 3.71      | 3.33       | 3.61       | 4.34       | 4.26             | 0.894            |
|                                | Std      | (1.05)   | (0.80)    | (1.37)     | (1.21)     | (0.75)     | (0.96)           |
| PCE                             | Mean     | 2.88     | 3.98      | 3.44       | 4.16       | 4.23       | 4.68             | 0.785            |
|                                | Std      | (0.84)   | (0.76)    | (1.21)     | (0.76)     | (0.67)     | (0.47)           |
| Trust                           | Mean     | 2.57     | 3.20      | 3.07       | 3.41       | 3.87       | 3.54             | 0.807            |
|                                | Std      | (0.94)   | (0.70)    | (1.03)     | (0.81)     | (0.64)     | (0.82)           |
| % of total sample               |          | 49.2     | 31.9      | 3.1        | 7.8        | 4.7        | 3.4              |                  |
| % of SR investors               |          | 16.1     | 41.1      | 25.0       | 17.9       |            |                  |

5-point Likert scale (1 = ‘not at all important’ ... 5 = ‘very important’)

It is obvious that conventional investors do not only have the lowest average values of the three investor groups, but also that their values are the only ones below 3.0 (on a 5-point Likert scale anchored by ‘not at all important’ (1) and ‘very important’ (5)). The group with the second lowest average values are the INT investors. The SR investors, combined over all investment levels, show the highest average values (PSA: 3.86, PCE: 4.15, trust: 3.57). Hence, this is a clear indication supporting hypothesis H2a, H2c and H2d, that PSA, PCE, and trust impact consumer behavior for socially responsible investments in a positive fashion.

When looking at the results for the different levels of investment in SR funds among the SR investors, two effects are evident. First, values for all three constructs tend to increase with the percentage of capital invested in SR funds. However, it is worth noting that the values of those SR investors that once had SR funds but currently have not allocated any money to SR funds (0% in SRI: former SR investors) is always below the INT investors’ values but above the CONV investors’ values. Second, standard deviations (Std) tend to decrease with the percentage of capital invested in SR funds. Again former SR investors (0% in SRI) hold a prominent position. The standard deviations of this group are highest among all investor groups, not only among SR investors. This circumstance brought us to take a closer look at its constituents and their individual PSA, PCE and trust values. Roughly half of the former SR investors have values for the three constructs that are closer to those of the typical CONV investor and the rest has values that are more similar to those of the typical current SR investor. Yet, more than half of the individuals of the former investor group have only two values of the three constructs that correspond either to the typical current SR investor or the typical CONV investor. For example there is an individual with PSA 4.40, PCE 3.75 but trust 2.00. The first two values are similar to those of SR investors whereas the third value more likely corresponds to the
CONV investor. Due to this great heterogeneity within the group of former SR investors and within the individual’s attitudes regarding the three constructs, we decided to drop these investors from our sample and from section 4.2 on, we only report results concerning current SR investors. Nonetheless, as a robustness check (not reported), we computed the values of the SR group consisting of current and former SR investors leaving most results quantitatively unchanged as can be seen in the Table 1.

As mentioned earlier pro-social attitudes and pro-social consumer behavior (i.e. buying SR funds) are interlinked. However, many studies report that this connection is not as strong as one might think. Instead, there seems to be an “attitude-behavior gap” (Boulstridge and Carrigan (2000)). This gap becomes obvious when we look at the PSA value of a typical INT investor: this value is higher than the average value of SR investors, who invest 1-20% of their capital in SR funds. Additional support for the existence of this attitude-behavior gap is given by another fact: SR investors more often engage in voluntary activities than INT and CONV investors (see Table 1) thus supporting H2b. This supports the notion, that ethical investing is particularly done by people, who in general favor more sustainable lifestyles/views. Yet, this leaves one question unanswered: What must happen to an INT investor to become an SR investor? Although we give some possible answers to this question in section 5.2 they remain superficial and therefore this question is an interesting topic for further research.

4.2. Sustainability Defined and its Influence on Return

When the respondents of our survey were asked to state the importance of the topic sustainability for them, SR and INT investors perceived it to be important averaging 4.04 and 3.91 on a 5-point Likert scale anchored by ‘not at all important’ (1) and ‘very important’ (5). Unsurprisingly, the average of CONV investors is much lower at 2.75. However, without knowing what these groups subsume under the term ‘sustainability’ the above averages are difficult to interpret. Therefore, we asked our respondents which issue comes first to mind when thinking about the term sustainability. Table 3 shows how the different expressions (ecological, social, ethical, and economic issues) are connected to it. At first glance it is evident, that the three investor groups have different views on the subject of sustainability. This impression is confirmed by the result of a Chi-squared test ($\alpha = 1\%$) on the equality of the distribution of the votes for the constituting elements of sustainability, thus supporting hypothesis H3a. Whereas 86.2% of SR investors are of the opinion that sustainability comprises ecological, social, ethical, and economic issues, only 66.2% of the INT investors and 42.1% of the CONV investors share this view. This finding supports H3b, that SR investors have the most holistic view on sustainability ($\alpha = 1\%$). Many respondents of the two other groups have more narrow views on sustainability: 16.2% and 18.4% of INT and CONV investors respectively think that ecological issues are the most dominant element of sustainability. Economic issues are believed to be the most prevalent topic by 9.7% of INT investors and almost one fifth of CONV investors.

### Table 3: Sustainability Defined

| Issues          | SR [%] | INT [%] | CONV [%] |
|-----------------|--------|---------|----------|
| Ecological Issues | 3.4     | 16.2    | 18.4     |
| Social Issues   | 1.7     | 3.2     | 1.1      |
| Ethical Issues  | 0.0     | 3.2     | 3.2      |
| Economic Issues | 6.9     | 9.7     | 19.5     |
| All of the above | 86.2   | 66.2    | 42.1     |
| None of the above | 1.7   | 1.3     | 15.8     |

Subsequent to the different ‘sustainability’ comprehensions, it makes sense to look at the investor groups’ assessments of how ecological, social, ethical, or sustainable actions affect the stock price of a company, in the long run. Table 4 shows, that all three groups are on average of the opinion that ethical, social, as well as ecological actions (at least slightly) positively affect a company’s stock price. Whereas ecological actions are expected to have mostly a more positive influence than the other two.

The combination of the three previously mentioned actions, sustainable actions, is expected to have the most positive influence on a company’s stock price. Accordingly all three investor
groups seem to be of the opinion that the whole (sustainability) is more than the sum of its parts. These results support hypothesis H3c, which states that SR investors assume a positive link between sustainable actions of companies and their financial performance (\( \alpha = 1\% \)). However, hypothesis H3d, which states that INT and CONV investors assume a negative link between sustainable actions of companies and their financial performance, cannot be supported, since their averages are higher than three. This raises the question why INT and CONV investors do not invest in sustainable funds, since they represent a portfolio of stocks that undertake sustainable actions? In the following section we will present potential explanations why this might be the case.

### Table 4: Influential Factors on a Company’s Stock Price

| Actions     | SR Mean | Std  | N   | INT Mean | Std  | N   | CONV Mean | Std  | N   | T   | T   | T   |
|-------------|---------|------|-----|----------|------|-----|-----------|------|-----|-----|-----|-----|
| Ecological  | 4.24    | 0.90 | 55  | 3.96     | 0.93 | 113 | 3.30      | 1.11 | 137 | 6.082 | (>)** | 1.817 | (>)** | 5.176 | (>)** |
| Social      | 4.02    | 1.01 | 55  | 3.78     | 0.95 | 116 | 3.29      | 1.15 | 138 | 4.340 | (>)** | 1.442 | (>)*  | 3.748 | (>)** |
| Ethical     | 3.96    | 0.94 | 55  | 3.66     | 1.03 | 116 | 3.09      | 1.09 | 137 | 5.544 | (>)** | 1.939 | (>)*  | 4.194 | (>)** |
| Sustainable | 4.35    | 0.80 | 55  | 4.06     | 0.88 | 114 | 3.51      | 1.10 | 136 | 5.865 | (>)** | 2.099 | (>)** | 4.444 | (>)** |

5-point Likert scale (1 = ‘negative’... 5 = ‘positive’)
* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level

direction of the alternative hypothesis: > “greater”; ≠ “two-sided”; < “less”

### 4.3. Financial Perceptions of SR funds (Profit Orientated Influence)

From Table 5 it becomes obvious that the respondents’ return perception differ (\( \alpha = 1\% \)) among the three investor types: Whereas the SR investors predominantly perceive ethical funds’ performance to be not considerably worse or even almost equal to conventional funds’ performance, a majority of 66.1% of the INT investors and even 68.9% of the CONV investors expect at least slightly or even much lower financial returns of ethical funds compared to conventional funds.

However, the three investor groups’ risk perceptions don’t differ significantly with most respondents expecting ethical funds to be as risky as or just slightly riskier than conventional funds. Nevertheless, the CONV investors’ view is by trend again the most critical one (see line with mean values in Table 6). Hence, hypothesis H4a could statistically be confirmed, whereas hypothesis H4b could only be supported by trend.

### Table 5: Perception of Return

| Financial Return of ethical funds compared to conventional funds | SR [%] N=51 | INT [%] N=106 | CONV [%] N=122 |
|---------------------------------------------------------------|-------------|--------------|---------------|
| Much lower (1)                                                | 7.8         | 14.2         | 28.7          |
| Slightly lower (2)                                            | 39.2        | 51.9         | 40.2          |
| Similar rate of financial return (3)                          | 39.2        | 26.4         | 29.5          |
| Slightly higher (4)                                           | 11.8        | 4.7          | 1.6           |
| Much higher (5)                                               | 2.0         | 2.8          | 0.0           |
| Mean                                                          | 2.61        | 2.30         | 2.04          |
| Std                                                           | 0.87        | 0.87         | 0.81          |

\[ \chi^2 = 25.708**, df = 8, p = 0.001 \]
For further investigations concerning financial perceptions of SR funds and the influence on the respondents’ virtual investment behavior, we confronted the SR and INT investors with three different scenarios: two with ethical funds’ under- and one with ethical funds’ outperforming conventional funds. The aim was to research the degree of the investors’ willingness to sacrifice financial returns in favor of sustainable investment behavior or in general their affinity to change their portfolio composition of ethical and conventional funds. Relevant results are displayed in Table 7. SR and INT investors’ fictitious investment behavior significantly differs for the two underperforming scenarios, with INT investors acting more price elastic. This impression is even more pronounced in the 5% vs. 10% scenario, where almost 65% of INT compared to less than 40% of SR investors would reduce their ethical investments slightly or even substantially. Remarkably, almost every second SR investor would not change his portfolio composition in this investment scenario with this inferior performance of SR funds. Instead, he accepts reduced financial returns in favor of his continued commitment to his sustainable investment. Altogether, this suggests that the INT investors hold a more profit-orientated view than current SR investors, which is also supported by their self-assessment concerning the importance of high returns for investments in general (cp. Table 8). Corresponding to the appropriate one-sided two-sample t-test, high returns are on average significantly (α = 5%) more important for INT than for SR investors. The same result is obtained for the comparison between CONV and SR investors (α = 5%), whereas no significant difference between INT and CONV investors can be proven. Hence, hypothesis H4c is statistically confirmed.

Analogically, no significant differences in the self-assessments concerning the average importance of low risk for investments in general (cp. Table 8) were obtained between SR, INT and CONV investors. Therefore, hypothesis H4d, suggesting SR investors to be less risk averse than INT or CONV investors, could not be confirmed. We can rather conclude that low risk is on average equally important for the three investor groups.

To investigate differences of the considered aspects in the investment process by the three investor groups, the respondents were asked to rate various financial and non-financial issues (cp. Table 8) on a 5-point Likert scale anchored by ‘not important at all’ (1) and ‘very important’ (5). Significant differences (α = 1%) were observable for SR, INT and CONV investors concerning the average rating of the importance of considering social, ethical, and environmental criteria, resulting in a significantly higher rating of SR than INT (α = 1%) and INT than CONV investors (α = 1%). But how do the different investor groups assess the importance of different financial aspects (apart from a low expected risk) compared to the group-specific importance of the non-financial criterion of SEE considerations? Therefore, we compared for each investor type the group specific mean value of the issue ‘consideration of SEE criteria’ (e.g. SR: 3.56) with the group specific mean values of the non-financial criterion ‘high return’ (e.g. SR: 3.86), ‘low asset-based fees’ (e.g. SR: 3.80), ‘low total expense ratio’ (e.g. SR: 3.79), ‘low performance fee’ (e.g. SR: 3.57), and ‘low transaction costs’ (e.g. SR: 3.79), resulting in five mean value comparisons (t-tests) per investor group. No significant difference between the average rating of financial criteria and the non-financial criterion of SEE considerations were observable for the SR investors, whereas CONV

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4 This issue has been excluded from the following comparisons due to its obviously different impact than return, cost, or fee-based topics.
and INT investors ascribe on average significantly ($\alpha = 1\%$) more importance to all of the financial issues than to considerations of SEE criteria. These results support hypothesis H4e, suggesting SR investors to be simultaneously concerned about financial and non-financial characteristics, whereas CONV as well as INT investors are primarily concerned about financial issues.

Table 7: Price Elasticity

| Comparative return [%] | SR [%] | INT [%] | SR [%] | INT [%] | SR [%] | INT [%] | $X^2$ |
|------------------------|--------|---------|--------|---------|--------|---------|------|
| Ethical 5              | 38.6   | 64.7    | 47.7   | 20.6    | 13.6   | 14.7    | 11.570*** |
| Ordinary 10            |        |         |        |         |        |         |      |
| Ethical 8              | 6.8    | 25.5    | 65.9   | 50.0    | 27.3   | 24.5    | 6.908**  |
| Ordinary 10            | 2.3    | 6.8     | 27.3   | 18.4    | 70.5   | 74.8    | 2.376    |
| Ethical 12             |        |         |        |         |        |         |      |
| Ordinary 10            |        |         |        |         |        |         |      |

* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level

Table 8: Importance of Financial Issues

| Financial Issues                  | SR     | INT    | CONV   | SR vs. CONV | SR vs. INT | INT vs. CONV |
|-----------------------------------|--------|--------|--------|-------------|------------|--------------|
|                                   | Mean   | Std    | N      | Mean        | Std        | N            | T   | T   | T   |
| High return                       | 3.86   | 0.94   | 51     | 4.20        | 0.77       | 94           | -1.897 (-) | -2.210 (-) | 0.393 (-) |
| Low risk                          | 3.27   | 1.04   | 51     | 3.42        | 1.02       | 90           | -0.012 (-) | -0.817 (-) | 1.009 (-) |
| Consideration of SEE criteria     | 3.56   | 1.30   | 52     | 2.61        | 1.17       | 92           | 10.796 (>) *** | 4.352 (>) *** | 8.157 (>) *** |
| Low asset-based fees              | 3.80   | 0.94   | 51     | 4.13        | 0.88       | 95           | -1.841 (-) ** | -2.023 (-) ** | 0.118 (-) |
| Low total expense ratio           | 3.79   | 0.96   | 52     | 4.06        | 0.88       | 94           | -1.149 (-)   | -1.715 (-) ** | 0.638 (-) |
| Low performance fee               | 3.57   | 1.06   | 51     | 3.79        | 0.99       | 95           | -1.584 (-) ** | -1.226 (-) | -0.455 (-) |
| Low transaction costs             | 3.79   | 1.00   | 52     | 4.09        | 0.89       | 94           | -2.373 (-) *** | -1.789 (-) ** | -0.744 (-) |

* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level

5-point Likert scale (1 = 'not important at all' ... 5 = 'very important')

4.4. Investment Strategies
In this section we take a detailed look at the investors’ considerations when investing money. Furthermore, we describe the opinions of SR and INT investors regarding the strategies used by sustainable equity funds. Roughly one-third of German SR (28.8%) and INT (37.9%) investors and more than two-thirds of CONV (69.5%) investors neither prefer inclusion, exclusion, engagement, nor confron-
tation as their primary investment strategy. However, most investors of all three groups prefer an investment strategy that primarily focuses on actively including stocks in their portfolio. This approach corresponds to the positive screening done by SR funds. Whereas exclusion is ranked second with SR investors, it is only ranked third with INT and CONV investors (Table 9). As in McLachlan and Gardner (2004), almost no one chose confrontation as their key investment strategy. Furthermore, when the percentages are adjusted, omitting our last response option ('none of the above strategies') more CONV (67.4%) than SR (51.4%) investors chose inclusion as their preferred investment strategy and more SR (35.1%) than CONV (9.3%) investors chose exclusion as their number one strategy. A Chi-squared test on the equality of the distributions of the three groups confirms (α = 5%) that investment strategies between the three investor groups differ. Yet, hypothesis H5a, that there will be a greater proportion of SR investors than CONV investors in all investment stages with the exception of inclusion, cannot be supported.

Table 9: Investment Strategies

|               | SR [%] | INT [%] | CONV [%] |
|---------------|--------|---------|----------|
| Exclusion     | 25.0   | 12.6    | 2.8      |
| Inclusion     | 36.5   | 32.6    | 20.6     |
| Engagement    | 9.6    | 16.8    | 5.7      |
| Confrontation | 0.0    | 0.0     | 1.4      |
| None of the above strategies | 28.8 | 37.9 | 69.5 |

At first glance, the above contrasts with our findings and that of Sandberg and Nilsson (2011) where ethical investors are asked whether SR funds should avoid investing in companies perceived by investors to be ethically problematic (Table 10). Approximately 94% of the Swedish ethical investors, 79.6% of the German SR and 87.9% of the INT investors are of the opinion that SR funds should not invest in companies considered to be ethically problematic.

How can the contradiction between the evidence presented in Tables 9 and 10 be reconciled? A possible explanation might be that the SR and INT investors primarily prefer an investment strategy after having employed some negative screens. This assumption is supported by the fact that, on the one hand, 44.4% of SR and INT respondents share the view that an SR fund should never invest in companies considered to be ethically problematic, while, on the other hand, 40.0% of SR and 39.4% of INT investors state that it varies from case to case to what extent an SR fund should avoid investing in ethically problematic companies (Table 11).

Table 10: Avoidance of Ethically Problematical Companies

|                          | SR [%] | INT [%] |
|--------------------------|--------|---------|
| Do you think that ethical funds should avoid investing in companies that you perceive to be ethically problematic? (several options possible) |        |         |
| No, they should not avoid investment in any businesses/industries. | 20.4   | 12.1    |
| Yes, they should avoid companies that use child labor. | 67.3   | 78.8    |
| Yes, they should avoid companies that use Cheng strategy | 40.8   | 49.5    |

This explanation goes well together with the finding that German SR and INT investors are of the view that the most effective strategy an ethical fund could use to influence companies into becoming more socially responsible is to invest directly in companies with an ethical or environmental profile. To avoid investing in companies that fail to comply with certain ethical criteria ranks second with both investors groups (Table 12). Despite the fact that inclusion seems to be the preferred strategy among SR and INT investors most research has been done regarding exclusion, which we turn to in the next section.

Exclusion (negative screening)

Following Anand and Cowton (1993), we asked for reasons according to which companies should be excluded from the respondent’s investment universe. Additionally, we followed...
McLachlan and Gardner (2004) and asked our respondents to rate each issue on a 4-point scale from ‘yes, would invest in’ (1) to ‘never invest in’ (4) (Table 13). When a ranking is formed according to the mean values of each issue, the three investor groups agree that social issues such as ‘child labor’ (1), ‘exploitation of people’ (2), and ‘racism or sexism’ (3), are the most important when labeling companies as ‘not investable’.

Table 11: Extension of Avoidance of Ethically Problematical Companies

| To what extent ought an ethical fund to avoid investing in ethically problematic companies? | SR [%] | INT [%] |
|-----------------------------------------------|--------|--------|
| An ethical fund should never invest in any of these companies. | 44.4  | 44.4   |
| It may be acceptable to invest in companies that get less than 5% of their turnover from these products/practices, but no more. | 13.3  | 12.1   |
| It varies from case to case to what extent an ethical fund should avoid investing in these companies. | 40.0  | 39.4   |

In order to test hypothesis H5b, which states that SR and INT investors rate sustainable issues as more important to their investment decisions than CONV investors, we performed one-sided t-tests for each issue, making pairwise comparisons between the three investor groups. Looking at Table 13 it is obvious that hypothesis H5b is confirmed: SR and INT investors rate the presented issues as more important than CONV investors. When it comes to the comparison of SR and INT investors, Table 13 indicates that the picture is less clear but still recognizable since SR investors rate the issues as significantly ($\alpha = 10\%$) more important than INT investors in 9 of 20 cases. This finding again supports the claim that SR investors have a more holistic view on sustainability (H3b), since those nine cases all correspond to moral and ecological issues. Consequently SR and INT investors’ views are only equally strong when social issues are concerned.

Table 12: Perceived Effectiveness of Engagement Strategies

| Below are a number of strategies which an ethical fund could use to influence companies into becoming more socially responsible. How effective do you think that these strategies are? | SR N=40-43 | INT N=79-87 |
|---------------------------------------------------------------|------------|------------|
| To avoid investing in companies which fail to comply with certain ethical criteria. | 3.93       | 4.01       |
| To vote at the annual general meetings of “unethical” companies. | 3.70       | 3.59       |
| To conduct an active dialogue with “unethical” companies. | 3.79       | 3.42       |
| To expose “unethical” companies in the media. | 3.67       | 3.75       |
| To invest directly in companies with an ethical or environmental profile. | 4.48       | 4.21       |
| To be an active owner in both “ethical” and “unethical” companies. | 2.88       | 3.19       |
| To donate part of the returns to charity. | 2.09       | 2.28       |

5-point Likert scale (1 = 'totally ineffective' ... 5 = 'very effective')

For the strategies of inclusion and exclusion a decision on how sustainable a company is has to be made. We asked our respondents who, in their opinion, should make this decision. Table 14 shows that SR and INT investors do not trust the fund management with this task, nor do they want a fund’s investment universe to be restricted to those of sustainable stock indices. SR investors either want to assign an independent advisory committee or an external agency to evaluate stocks’ sustainability.
| Ethical Issues                     | SR   | INT   | CONV  | SR vs. CONV | SR vs. INT | INT vs. CONV |
|----------------------------------|------|-------|-------|-------------|------------|-------------|
|                                  | Mean | Std   | N     | Mean        | Std        | N           | T  | T  | T    |
| Child labor                      | 3.83 | 0.56  | 47    | 3.77        | 0.57       | 98          | 3.14 | 0.96 | 132  |
| Exploitation of people           | 3.68 | 0.78  | 47    | 3.71        | 0.52       | 98          | 2.98 | 1.02 | 130  |
| Racism/sexfism                   | 3.67 | 0.67  | 46    | 3.60        | 0.65       | 99          | 2.91 | 1.06 | 130  |
| Nuclear weapons                  | 3.66 | 0.76  | 47    | 3.53        | 0.85       | 99          | 2.73 | 1.24 | 130  |
| Trade with oppressive regimes    | 3.51 | 0.86  | 47    | 3.32        | 0.93       | 100         | 2.59 | 1.05 | 133  |
| Poor environmental record        | 3.49 | 0.78  | 47    | 3.31        | 0.66       | 98          | 2.38 | 0.96 | 132  |
| Arms exporter                    | 3.47 | 0.86  | 47    | 3.12        | 1.08       | 98          | 2.11 | 1.09 | 134  |
| Pesticide use                    | 3.32 | 0.98  | 47    | 2.92        | 0.93       | 99          | 2.27 | 1.05 | 132  |
| Industrial cattle breeding       | 3.30 | 0.95  | 47    | 3.08        | 0.96       | 100         | 2.43 | 1.09 | 132  |
| Animal experiments               | 3.26 | 0.92  | 47    | 3.30        | 0.84       | 98          | 2.38 | 1.05 | 133  |
| Inaccurate advertising           | 3.17 | 0.88  | 46    | 3.07        | 0.84       | 101         | 2.78 | 1.06 | 134  |
| Nuclear Power                    | 3.11 | 1.17  | 47    | 2.91        | 1.09       | 100         | 1.92 | 1.04 | 133  |
| Pornography                      | 3.09 | 1.07  | 46    | 2.74        | 1.13       | 100         | 2.16 | 1.03 | 133  |
| Gambling                         | 2.98 | 1.01  | 47    | 2.63        | 1.10       | 100         | 2.05 | 1.07 | 134  |
| Tobacco                          | 2.89 | 1.05  | 47    | 2.41        | 1.12       | 101         | 1.82 | 0.95 | 136  |
| Genetic engineering              | 2.87 | 1.12  | 47    | 2.57        | 1.14       | 97          | 1.70 | 0.92 | 136  |
| Oil production                   | 2.74 | 1.21  | 47    | 2.18        | 1.06       | 100         | 1.43 | 0.75 | 135  |
| Extraction of raw materials      | 2.40 | 1.12  | 47    | 2.00        | 1.03       | 100         | 1.38 | 0.73 | 136  |
| Care of health and geriatric care| 1.64 | 0.94  | 47    | 1.37        | 0.72       | 99          | 1.55 | 0.78 | 135  |
| Renewable energies               | 1.17 | 0.56  | 47    | 1.30        | 0.69       | 98          | 1.88 | 1.04 | 137  |

4-point scale (1 = ‘yes, would invest’, 2 = ‘don’t care’, 3 = ‘less likely to invest in’, 4 = ‘Never invest in’)

* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level

direction of the alternative hypothesis: > “greater”; ≠ “two-sided”; < “less”
Table 14: To what extent do you agree to the following statements?

| Statement                                                                 | SR       | INT      | SR vs. INT |
|---------------------------------------------------------------------------|----------|----------|------------|
| The fund manager should be supported by an independent investment advisory committee when evaluating the sustainability of stocks. | 4.36     | 3.76     | 3.497**    |
| The sustainability rating of stocks should be carried out by external agencies. | 4.35     | 4.09     | 1.634*     |
| The fund manager should only invest in stocks that are part of a sustainable stock index. | 2.64     | 2.95     | -1.219*    |
| The sustainability rating of stocks should be carried out by the fund's management. | 2.61     | 2.64     | -0.137*    |

5-point Likert scale (1='totally disagree' ... 5='totally agree')
* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level
direction of the alternative hypothesis: > "greater"; ≠ "two-sided"; < "less"

Engagement
In this section a look at the last undiscussed investment strategy from Table 9 shall be taken: Engagement.
According to Hellsten and Mallin (2006), funds that employ engagement as a part of their investment strategy try to identify areas for improvement in the ethical, social, and environmental policies of the companies they are invested in. Then the funds try to motivate the companies via letters, meetings with top management, etc. to make improvements.
Although engagement is only preferred by few people as their primary investment strategy (Table 9) an overwhelming majority of investors expect their fund to engage: 86.4% of SR and 82.4% of INT investors are of the opinion that an ethical fund should influence companies to take stronger social responsibility (Table 15). This is in line with the results of Sandberg and Nilsson (2011) and Lewis and Mackenzie (2000b). Concerning the costs of engagement, most SR and INT investors in Germany do not want to sacrifice ‘any’ or at least ‘some’ of the funds’ return to reach this goal. Only a minority (SR: 13.6% and INT: 11.0%) believes that an ethical fund should dedicate considerable resources or all of its resources to influence companies and therefore should accept much lower returns. This supports the view that investors in Germany mainly see an SR fund as an investment and not as a charitable organization.

Table 15: Return Sacrifice for Engagement

| Do you think that ethical funds ought to try to make the world a better place, for instance by influencing companies to take a stronger social responsibility? If so, to what extent ought they to be dedicated to this? (choose one) | SR [%] | INT [%] |
|---------------------------------------------------------------|--------|--------|
| No, an ethical fund ought not to be engaged in influencing companies at all. | 13.6   | 17.6   |
| Yes, an ethical fund ought to try to influence companies as best as it can. But without sacrificing any financial return. | 31.8   | 31.9   |
| Yes, an ethical fund ought to dedicate some resources to influencing companies, investors will have to accept somewhat lower returns. | 40.9   | 39.6   |
| Yes, an ethical fund ought to dedicate considerable resources to influencing companies, investors will have to accept much lower returns. | 13.6   | 6.6    |
| Yes, an ethical fund ought to dedicate all of its resources to influencing companies, this is much more important than returns. | 0.0    | 4.4    |
Although the majority both investor groups expect their funds to actively lobby for sustainable improvements in companies, they perceive conducting an active dialogue with ‘unethical’ companies as only somewhat effective, and being an active owner in both ‘ethical’ and ‘unethical’ companies even as somewhat ineffective (Table 12).

The importance of engagement for SR investors and their preferred ways to influence companies are not very well researched. In addition to the above, just fragmented information can be found. The only further evidence on German SR investors is presented by Dorfleitner and Utz (2012) who state that about one-third of their respondents implement their personal moral values through the exertion of voting rights.

5. Multivariate Methods of Analysis

In the following two subsections we seek to identify significant investor group differences and influential factors on the SR investor behavior from an objective point of view by using two multivariate methods of analysis: ordinal logistic regression analysis (OLR) and the classification tree (CT) method.

5.1. Ordinal Regression Analysis Using the Logit Link Function

Apart from researching investor group differences between SR, INT and CONV investors, one aim of this study is to examine influential factors on the SR investor behavior, i.e. the intensity of involvement into SRI. For this purpose we choose the variable ‘amount (%) of portfolio invested in SR funds’ as the dependent variable and categorized it into four groups (0%, 1–20%, 21–80% and 81–100%). Therefore, the dependent variable was of an ordinal nature. Preparatory investigations indicated that it was not reasonable to comprise the group of INT investors into the estimation. As these investors were frequently not classifiable into the ordered arrangement of the SRI intensity groups (e.g. see Table 2), estimations resulted in very poor or even insignificant model fits. Hence, the first (0%) category of the dependent variable comprises the complete group of CONV investors, the second category the group of current SR investors with an amount of 1-20% of their investment portfolio devoted to SR funds, and the third (21–80%) and fourth (81–100%) category comprise current SR investors with accordingly stronger SRI involvements.

In order to comprise a meaningful but still clear and manageable amount of possibly influential factors, the independent variables used in this estimation concern three different categories: attitudinal scale values (PSA, trust, and PCE), demographic characteristics (age, gender, education, income, and place of residence), and subjective perceptions concerning risk and financial performance of SR funds compared to conventional ones. For the sake of clarity, some of the influencing variables were also grouped: perception of return (SR funds’ performance is perceived better, similar, or worse), perception of risk (SR funds’ risk is perceived lower, similar, or higher), place of residence (middle-size cities or larger cities, countryside or smaller cities: cutoff point 20,000 inhabitants), education (university graduate or not) and income (lower or higher income level: cutoff point €3,600 monthly household net income).

Methodical background

The cumulative link model with the logit link function, also known as the proportional odds model, is specified as:

\[
\log \left( \frac{\gamma_j(x)}{1 - \gamma_j(x)} \right) = \alpha_j - \beta' x, \quad j = 1, ..., J - 1
\]

with \( \beta \) and \( x \) being vectors of dimension \( l \times 1 \) (\( l = \) number of independent metric or dummy variables) and \( \gamma_j(x) \) being the cumulative response probabilities:

\[
\gamma_j(x) = P(y \leq j | x), \quad j = 1, ..., J - 1
\]

\( J = \) number of categories of the ordinal dependent variable. The model assumes that the coefficients \( \beta_i, i = 1, ..., l \) do not depend on the level \( j \) (proportional odds assumption or assumption of parallel lines). The \( \alpha_i \)'s satisfy the following constraint since the \( \gamma_j(x) \) increase as a function of \( j \):

\[
\alpha_1 \leq \alpha_2 \leq \cdots \leq \alpha_{J-1}
\]

Therefore, the estimated coefficients \( \hat{\beta}_i, i = 1, ..., l \) indicate whether the probability of belonging to a higher group increases (positive

\[5\] For a deeper insight into the technical details, see McCullagh (1980).
sign) or decreases (negative sign) with increasing values of the independent variable respectively the membership to the corresponding category in comparison to the reference category.

Results of the ordinal logistic regression analysis (OLR)

Ordinal regression analysis with the logit link function was applied. The results are displayed in Table 16. The essential model assumption of parallel lines was not violated, since the corresponding test result was not significant (p=0.998). We can therefore assume that the effect of each independent variable on the SR investor behavior does not differ among two successive SRI intensity groups. The model’s overall fit was significant ($\chi^2$(df=12; $N=114$) = 77.009, $p = 0.000$), and beyond that, the three different pseudo R² measures indicate quite a good overall model fit, implying that a good amount of SR investor behavior can be explained.

Two of the three social responsibility constructs showed a significant influence on the SRI behavior: pro-social attitudes (PSA) ($\alpha = 5\%$) and perceived consumer effectiveness (PCE) ($\alpha = 1\%$). Both estimates are positive, indicating that investors with higher PSA and/or PCE values are more likely to invest greater amounts of their portfolio in SR funds. Although trust in pro-social claims made by SR funds has, as expected, a positive estimate, the impact on SRI behavior is not significant.

Also insignificant are the perceptions of risk and financial return as well as each of the socio-demographic variables. Nonetheless, it should be mentioned that except for the variables income (cp. H1d) and the perception of risk (cp. H4d), the signs of the parameter estimates are consistent with the hypotheses developed in section 2. Summarized, it can be said, that particularly attitudinal properties are influential, whereas subjective perceptions concerning risk and financial performance and/or demographic characteristics do not significantly affect the intensity of SRI behavior. This conclusion is also robust towards the selection of the first category (0%) of the dependent variable (e.g. CONV and former SR investors).

| Variable                  | Estimate  |
|---------------------------|-----------|
| 0% a                      | 10.339*** |
| 1–20%                     | 12.032*** |
| 21–80%                    | 13.493*** |
| PSA (metric)              | 0.705**   |
| Trust (metric)            | 0.147     |
| PCE (metric)              | 1.773***  |
| Age (metric)              | -0.011    |
| Gender Male (0)           | -0.159    |
| Male (1)                  | 0         |
| Education Not university graduate | -0.990 |
| University graduate       | 0 b       |
| Income Lower income (1)   | 0.813     |
| Higher income (2)         | 0 b       |
| Place of residence Middle-size/larger cities (1) | 0.152 |
| Countryside/smaller cities (2) | 0 b |
| Perception of return Above average return (1) | 0.808 |
| Similar return (2)        | 0.496     |
| Below average return (3)  | 0 b       |
| Perception of risk Lower risk (1) | 0.957 |
| Similar risk (2)          | 0.207     |
| Higher risk (3)           | 0 b       |
| Results Cox & Snell R²    | 0.491     |
| Nagelkerke R²             | 0.583     |
| McFadden R²               | 0.366     |
| $\chi^2$(df=12; $N=114$) | 77.009*** |

* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level

As our questionnaire has been conducted in dependence on the existing literature and particularly the three socially responsible scales (PSA, trust, and PCE) have been developed following Nilsson (2008), our findings are best comparable to his results. But basically, previous research for other countries using (ordinal) (logit or probit) regression models to estimate the influence of different independent variables on the investors’ intensity of SRI involvement or the SRI behavior in general predominantly led to comparable findings: strong dependencies towards attitudinal characteristics, whereas demographic variables seem to be less or rather

Table 16: Results of the Ordinal Logistic Regression Analysis (OLR)
unimportant (e.g. Williams (2007), Nilsson (2008)). The above supports the assumption that our sample is quite representative for SR and CONV investors.

5.2. Classification Tree Method

The OLR is well suited for explaining the determinants of the percentage of the portfolio invested in SR funds for those who already invest in SR funds. But it fails to discover the reasons for INT investors not investing in SR funds though being interested in SEE issues. Therefore, we try using classification (and regression) tree methods to detect essential investor group differences. At first, we looked for a subset of possibly relevant variables resulting in the following choice concerning four different categories: attitudinal scale values (PSA, Trust, and PCE), different financial statements (subjective perceptions concerning risk (percRisk) and financial performance (percReturn) of SR funds compared to conventional ones, the personal rating of the importance of low risk (expRisk) and high financial return (expReturn) for investments in general, and the expected effect of sustainable actions on a company’s stock price (effect)) and non-financial criteria (importance of considerations of SEE criteria in the investment process (SEE)), as well as variables concerning the level of information of the respective respondents (scale value Knowledge as the mean value of all the topics mentioned in Table 17, and sustainable investments (sustInv) solely). This variable selection predominantly results from the comparison of the group specific mean values, where significant differences between at least two of the three investor groups were observable and additionally under the restriction of covering all possibly relevant topics.

CONV investors already distinguish from SR and INT investors due to their considerably lower attitudinal scale values (cp. Table 2). Especially the significant influence of PSA and PCE toward the SRI behavior is already confirmed by the results of the OLR presented in chapter 5.1. The remaining difficulty is to separate INT form SR investors. The t-test results of the pairwise comparisons of the mean values concerning the level of knowledge about SR terms of the three investor groups (cp. Table 17) suggest this scale to be useful for separating INT from SR investors since their average knowledge about SR terms differ significantly, with INT investors possessing on average no higher level of knowledge than CONV investors.

Methodological background

The most popular algorithm for binary recursive partitioning is based on the work of Breiman, Friedman, Stone, and Olshen (1984). Due to the necessity of cost-complexity pruning and the regular criticism of not being founded on a statistical criterion, Hothorn, Hornik, and Zeileis (2006) readapted the theory to overcome the associated problems of overfitting and biased variable selection. Hence, they present a unified framework for binary recursive partitioning which embeds tree-structured regression models into a well-defined theory of conditional inference procedures. Additionally, stopping criteria based on multiple test procedures are implemented.

The algorithm contains the following three steps:

1. Test the global null hypothesis of independence between any of the covariates \( X_i \) \((i = 1, ..., I \) with \( I \) number of independent variables) and the response variable \( Y \). Stop if this hypothesis cannot be rejected. Otherwise select the covariate \( X_i \) with the strongest association to \( Y \) measured by test statistics or p-values indicating the deviation from the partial hypotheses \( H_0^i: D(Y|X_i) = D(Y), i = 1, ..., I \) (i.e. there is no information about the response variable \( Y \) covered by covariate \( X_i \)).

2. Split the data according to \( X_i \) into two disjoint subsets \( A' \) and \( X_i \setminus A' \). Thereby, the optimal split in covariate \( X_i \) exhibits the greatest discrepancy between each possible subset \( A \) and \( X_i \setminus A \).

3. Recursively repeat step 1 and 2.

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6 For a deeper insight into the technical details, see Hothorn, Hornik, and Zeileis (2006).
Table 17: Knowledge about SR Terms

| Have you ever heard of the following terms? | SR | INT | CONV | SR vs. CONV | SR vs. INT | INT vs. CONV |
|-------------------------------------------|---|----|-----|-------------|-----------|-------------|
| Mean | Std | N  | Mean | Std | N  | Mean | Std | N  | T  | T  | T  |
| Sustainable Investments | 2.72 | 0.56 | 57  | 2.31 | 0.59 | 134 | 2.20 | 0.58 | 154 | 5.927 | (>) *** | 4.595 | (>) *** | 1.517 | (>) * |
| Eco. / Green Investments | 2.68 | 0.57 | 57  | 2.31 | 0.68 | 137 | 2.22 | 0.53 | 156 | 5.302 | (>) *** | 3.953 | (>) *** | 1.143 | (>) |
| Microfinance | 2.62 | 0.56 | 56  | 2.19 | 0.69 | 133 | 2.24 | 0.64 | 153 | 4.224 | (>) *** | 4.579 | (>) *** | -0.683 | (>) |
| Social / Ethical Investments | 2.61 | 0.65 | 57  | 2.14 | 0.70 | 135 | 2.00 | 0.63 | 155 | 6.152 | (>) *** | 4.506 | (>) *** | 1.778 | (>) |
| CSR (Corp. Social Responsibility) | 2.05 | 0.87 | 57  | 1.72 | 0.79 | 130 | 1.54 | 0.71 | 155 | 4.000 | (>) *** | 2.443 | (>) *** | 2.089 | (>) |
| Socially Resp. Investing | 2.05 | 0.87 | 57  | 1.45 | 0.70 | 132 | 1.44 | 0.66 | 155 | 4.824 | (>) *** | 4.565 | (>) *** | 0.196 | (>) |
| Green Eco-Tech Investing | 1.81 | 0.77 | 57  | 1.40 | 0.60 | 132 | 1.49 | 0.63 | 154 | 2.764 | (>) *** | 3.548 | (>) *** | -1.260 | (>) |
| ESG (Environmental, Social, and Governance) | 1.66 | 0.79 | 56  | 1.40 | 0.63 | 134 | 1.33 | 0.62 | 153 | 2.796 | (>) *** | 2.230 | (>) *** | 0.845 | (>) |
| Community Investing | 1.63 | 0.79 | 57  | 1.33 | 0.58 | 132 | 1.34 | 0.59 | 154 | 2.494 | (>) *** | 2.562 | (>) *** | -0.157 | (>) |
| UN PRI (UN Principles for Responsible Investment) | 1.53 | 0.71 | 57  | 1.24 | 0.55 | 131 | 1.29 | 0.56 | 153 | 2.225 | (>) ** | 2.741 | (>) *** | -0.868 | (>) |
| Impact Investing | 1.49 | 0.71 | 55  | 1.17 | 0.47 | 133 | 1.17 | 0.41 | 155 | 3.247 | (>) *** | 3.106 | (>) *** | 0.099 | (>) |
| Knowledge a | 2.08 | 0.50 | 55  | 1.69 | 0.40 | 120 | 1.66 | 0.39 | 147 | 5.711 | (>) *** | 5.413 | (>) *** | 0.717 | (>) |

3-point scale (1 = 'never heard of it', 2 = 'heard of it before', 3 = 'looked into it')
* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level
direction of the alternative hypothesis: > “greater”; ≠ “two-sided”; < “less”
a mean value (scale) of the above mentioned topics; Cronbach’s Alpha = 0.882

Summarized, the first step defines the variable selection criteria as well as the stopping rule. In the second step the splitting procedure, with respect to determining the best binary split, is described. Step 3 simply presents the recursive character of the algorithm. Therefore, each node of a tree is represented trough a case weights vector \( w = (w_1, \ldots, w_n) \) (\( n \) = total number of observations) with \( w_i = 0 \) if the respective node contains the corresponding observation, else \( w_i = 0 \). Hence, \( w \) indicates the relevant data for the next possible split.
The approach by Hothorn, Hornik, and Zeileis (2006) is applicable to regression problems with arbitrary scaled response variables and covariates. Therefore, it is well suited for the classification problem at hand.

7 The variable selection criteria as well as the splitting procedure are based on the permutation test framework developed by Strasser and Weber (1999). The stopping rule is based on multiple test procedures.
Figure 1: Classification Tree for SR, INT, and CONV investors

Results of the classification tree (CT) method
A classification tree based on the eleven variables above is created following statistical test criteria and the result is displayed in Figure 1. Identified relevant variables to separate between the three investor groups are again the two attitudinal scale values PCE and PSA, the investors’ rating of the importance of considerations of SEE criteria in their investment process (SEE), as well as the investors’ average knowledge about SR terms. All the other variables under consideration do not significantly raise the purity of the separation between SR, INT and CONV investors and are therefore not included in the classification tree in Figure 1. The main investor group characteristics resulting from the CT method can be summarized as follows: CONV investors consider SEE issues as (completely) unimportant for their investment process and state lower PCE values (e.g. cp. Node 3 and 7). On the contrary, current SR investors predominantly show values for the scales PCE, Knowledge, and PSA in the upper value range (e.g. cp. Node 14 and 15). In comparison to SR investors, INT investors particularly stand out due to their lesser knowledge about SR terms (cp. Node 12), but are hardly distinguishable from SR investors when knowledge values are also above average (cp. Node 14). Besides, slightly lesser PSA values for INT investors than for SR investors might be expected.

These results confirm former test results for investor group differences based on t-tests or descriptive values compiled in section 4.
The goodness of fit results of the CT method are noted in Table 18, displaying the cross tabulation of the observed versus the predicted group membership of the investors. Overall, 68.2% of the investors could be accurately classified. Compared to the goodness of classification by chance (47.4%, being the a priori probability for the largest investor group, the CONV investors ($N_{CONV}=194$)), the model fit leads to a noticeable improvement, but it is not completely satisfying.

A more detailed investigation of sources for misclassification by regarding the group specific rates of accuracy particularly points to the SR investors, predominantly being predicted as INT investors due to a considerably lower a priori probability (14.7% compared to 37.9%). Therefore, differing a priori probabilities for group membership turn out to be a nontrivial problem of the CT method. The precision of classification, i.e. the probability of once being predicted actually belonging to the predicted group, is lowest for INT investors (59.4%) and highest for SR investors (78.9%). However, CONV investors were predicted with an accuracy rate of 75.0% and a precision rate of 75.0%.

Altogether, these results emphasize the difficulty to separate between SR and INT investors, whereas CONV investors are quite well distinguishable. A possible modification to improve the goodness of classification might be to take the results of the CT method from Table 18 and to merge the SR and INT investors, representing the group of investors being generally reachable for SR investing (REACH) due to being already active or at least interested in this topic. Despite the obviously remaining heterogeneity within the two resulting investor groups (REACH and CONV), the overall correct classification rate increases to 77.5% and is quite satisfactory with an accuracy rate of 76.3% and a precision rate of 80.0% for the merged group of SR and INT investors (cp. Table 19). To identify an investor as at least interested in SR investing and then providing him with additional information on SRI might help to overcome investors’ inhibitions/prejudices and raise the number of active SR investors as well as the average portfolio amount invested in SR funds.

### Table 18: Classification Quality of the classification tree method

| Obs. | Pred. | Total | A priori Probability [%] | Accuracy [%] |
|------|-------|-------|--------------------------|--------------|
|      | SR    | INT   | CONV                     |              |
| SR   | 12    | 37    | 11                       | 60           | 14.7          | 20.0         |
| INT  | 1     | 114   | 40                       | 155          | 37.9          | 73.5         |
| CONV | 0     | 41    | 153                      | 194          | 47.4          | 78.9         |
| Total| 13    | 192   | 204                      | 409          |              |              |
| Precision [%] | 92.3 | 59.4 | 75.0 | | 68.2 |

Obs.: observed group; Pred.: predicted group

Stated reasons for not investing / not being interested in SR funds of INT and CONV investors

Apart from the above attempt to identify reasons of INT investors for not investing in SR funds though being interested, we asked them to state on a 5-point Likert scale anchored by ‘totally disagree’ (1) and ‘totally agree’ (5) their personal level of agreement concerning different possible reasons for not investing in SR funds. Besides, we confronted the CONV investors with identical options for reasons for not being interested in SR funds at all and asked them to state their subjective point of view. The results (mean values and t-tests) are displayed in Table 20.
The main reasons for not (yet) investing in SR funds obviously differ. Whereas INT investors widely agree with the statements of being insufficiently informed (‘I feel uninformed about SR funds’, ‘I do not know enough about SR funds’) and blame their banks’ inactivity (‘My bank did not offer SR funds’), CONV investors are predominantly convinced that ‘SR funds do not help to solve SEE problems’, they ‘[…] cannot follow the SEE attributes of SR funds’, and perceive SR funds’ performance to be too bad. Apart from the above mentioned reasons, significant differences in the average dis/agreement are observable for the statements ‘the number of available SR funds is not sufficient’ and ‘SR funds are not transparent’. Summarized, the received results predominantly coincide with the investors’ personal view. INT investors are insufficiently informed, whereas their own initiative for changing it is not very pronounced. On the contrary, CONV investors are particularly doubtful about SR funds’ effectiveness.

Table 20: Reasons for not investing / not being interested in SR funds

| Statement                                      | INT    | CONV     | INT vs. CONV |
|------------------------------------------------|--------|----------|--------------|
| I feel uninformed about SR funds              | 3.91   | 2.67     | 8.144 ***    |
| My bank did not offer SR funds                 | 3.89   | 3.16     | 3.179 ***    |
| I do not know enough about SR funds            | 3.67   | 3.00     | 4.018 ***    |
| The number of available SR funds is not sufficient | 3.47   | 2.44     | 6.429 ***    |
| The investment criteria of SR funds are unclear to me | 3.35   | 3.25     | 0.594 (≠)    |
| SR funds perform too bad                       | 3.20   | 2.74     | -2.175 **    |
| I do not have enough liquid funds              | 3.03   | 2.74     | 1.403 (≠)    |
| SR funds are not transparent                   | 2.99   | 3.33     | -2.087 **    |
| SR funds do not help to solve SEE problems     | 2.74   | 4.12     | -8.954 ***   |
| I cannot follow the SEE attributes of SR funds | 2.70   | 3.41     | -4.343 ***   |
| SR funds are too risky                         | 2.46   | 2.22     | 1.471 (≠)    |
| SR funds are too complicated                   | 2.31   | 2.31     | -0.016 (≠)   |

5-point Likert scale (1= 'totally disagree' ... 5= 'totally agree')
* significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level
direction of the alternative hypothesis: > "greater"; ≠ "two-sided"; < "less"
6. Conclusion

We have shown that SR investors are quite similar to those interested in investing sustainably (INT) and very different from those who only consider investing conventionally (CONV). The following is a condensed recapitulation regarding the characteristics of the three investor groups focusing on SR investors. The latter are more likely to be female, married and a parent, when comparing them to INT and CONV investors. Furthermore sustainable investors exhibit on average higher values for the pro-social constructs: pro-social attitudes (PSA), perceived consumer effectiveness (PCE) and trust in SR funds than the two other investor groups. The results of the OLR have shown that PSA and PCE even have a significantly positive impact on the investment behavior: the percentage invested in SR funds of an investor’s portfolio rises in accordance with these variables.

When it comes to the definition of sustainability, SR investors have the most holistic view: 86.2% of SR investors are of the opinion that sustainability comprises ecological, social, ethical, and economic issues, whereas only 66.2% of the INT investors and 42.1% of the CONV investors share this view. Surprisingly all three investor groups are (on average) of the opinion that ethical, social, as well as ecological actions (at least slightly) positively affect a company’s stock price. Yet, SR, INT, and CONV investors perceive ethical funds to perform worse compared to conventional funds with CONV investors assuming the most negative return difference.

Nevertheless, SR investors still invest in SR funds as they are less profit orientated than INT and CONV investors.

Additionally, SR investors are not only concerned about financial issues but about non-financial characteristics of their investments as well. Despite these facts it is quite difficult to explain why INT investors do not invest in SR funds since they have very similar values for almost all the variables when compared to SR investors’ values. In our view, the most probable explanation is that SR investors do not only think in a pro-social manner but also act in this fashion. First, SR investors more often engage in voluntary activities than INT (and CONV) investors do. Second, the knowledge about SR terms is significantly higher among SR than among INT investors, thus making ‘knowledge’ a very useful variable in the classification tree in order to distinguish between SR and INT investors. The fact that SR investors are better informed can be interpreted in the way that they actively acquire information whereas INT investors might be more passive since they state that they feel uninformed about SR funds (see Table 20). In general SR investors seem to favor more sustainable lifestyles/views and rather ‘put their money where their mouth is’ Beal and Goyen (1998).

Beside describing the characteristics of SR, INT, and CONV investors, the survey results can be used to point out how an SR fund ought to be designed in order to be attractive for investors. Since SR investors’ behavior is strongly influenced by their PCE it is important to strengthen this impression by the ‘right’ asset selection process of the SR fund e.g. through selecting the most important negative screening criteria (see Table 13) and/or by supporting the fund manager with an independent investment advisory committee when evaluating stocks’ sustainability (see Table 14). Furthermore, SR investors are of the opinion that SR funds ought to practice engagement (Table 15) and that the most effective strategy an ethical fund could use to influence companies into becoming more socially responsible is to invest directly in companies with an ethical or environmental profile. As clear-cut as the above may seem, more research on the design of SR funds preferred by investors is necessary since answers are quite heterogeneous when it comes to questions like: To what extent ought an ethical fund avoid investing in ethically problematic companies? (Table 11).

However, according to our survey the greatest obstacle for further growth of SR funds seems to be the misconception that SR funds perform worse than conventional funds. Apart from this, INT investors feel insufficiently informed, whereupon their own initiative for changing it is not very pronounced. On the contrary, CONV investors are particularly doubtful about SR funds’ effectiveness. The latter is a good point and an interesting area for further research.
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Appendix A: Pro-social Influence (Adapted from Nilsson (2008))

Background information for questionnaire participant: During their lifetime most people in today’s society make many purchases. You make purchasing decisions about everything from large items (i.e. trips, cars, houses) to small everyday items (i.e. groceries).

When you make these purchasing decisions, how important is it for you that the companies you buy from: (5 point Likert scale anchored by very important (5) and not at all important (1)).

**Pro-social attitudes (PSA) towards issues relevant to SRI**
1. Respect workplace rights (i.e. possibility to freely join trade unions).
2. Work actively with environmental issues (i.e. by reducing environmental effect of products and production).
3. Respect human rights (work against discrimination based on race, gender, or religion).
4. Do not produce goods that could harm people (i.e. weapons).
5. Do not use unethical business practices (i.e. bribery and corruption).

**PCE of SRI** (5 point Likert scale anchored by totally agree (5) and totally disagree (1)).
1. By investing in SRI every investor can have a positive effect on the environment.
2. Every person has power to influence social problems by investing in responsible companies.
3. It does not matter if I invest my money in SRI mutual funds since one person acting alone cannot make a difference (reversed).
4. It is useless for the individual consumer to do anything about pollution (reversed).

**Trust in SRI** (5 point Likert scale anchored by totally agree (5) and totally disagree (1)).
1. I trust that SRI providers follow the socially responsible guidelines used in their marketing.
2. The SRI funds offered by SRI providers are an honest attempt to improve social issues such as pollution.
3. I trust providers of SRI mutual funds to do their best in trying to get companies to act in a way that reduces social problems such as pollution and third world poverty.
4. I trust that providers of SRI profiled mutual funds do not invest their capital in companies that manufacture weapons and tobacco.
5. Providers of SRI profiled mutual funds have no genuine interest in improving the environment since they, like every other company, primarily wants to make a profit (reversed).