

Financial or environmental-impact information promote ESG investments: Evidence from a large incentivized online-experiment

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Abstract

Effective stimulation of investments in Environmental, Social, and Governance (ESG) requires reliable knowledge of motives that drive investors' decisions. We investigate how information on financial return and environmental impact as well as the combination of both affect the decision to invest sustainably. Moreover, we test whether offering a general or granular choice on sustainability preferences affects investment decisions. An incentivized online experiment with experienced retail investors and a representative sample of the Austrian population (N = 2254) shows that information on financial impact as well as on environmental impact stimulates sustainable investments. However, the combination of both types of information yields no additional positive effect. Information has no strong effect on investor satisfaction. Also, the difference in choice options on sustainability preferences has no large impact on investment decisions or satisfaction. An explorative analysis suggests that women and investors holding high biospheric values as well as investors with high financial literacy, and trust in ESG products are more likely to invest sustainably. Additional results on the revision and stability of investment decisions are discussed.

Keywords: Sustainable investments; ESG investments; socially responsible investments; investor behavior; financial information; environmental information; incentivized experiment

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1. Introduction

Sustainable investments based on Environmental, Social, and Governance (ESG) criteria are seen to have a great potential to contribute to mitigating climate change (Eurosif, 2018). ESG investments are argued to promote a sustainable and fair economy which is one important mechanism to limit global warming to 1.5°C (IPCC, 2018). The importance of ESG investments is mirrored in the European Green Deal Action plan on Sustainable Finance, aiming to mobilize one trillion Euro of sustainable investments (European Commission, 2020). However, at present, sustainable investments account for only one third of all investments (Global Sustainable Investment Alliance, 2020). Besides limited supply of sustainable investment options, literature suggests that investors have insufficient information which is another hindering factor (Brunen & Laubach, 2021; Wins & Zwergel, 2016). To improve information and knowledge, the action plan requires financial institutes to actively inform their clients about the option of ESG investments and to elicit and consider their sustainability preferences. The success of the action plan, starting August 2022, requires an optimal design of information and the assessment of sustainability preferences, which both could contribute to increasing sustainable investments in the next years and decades.

What should be the content of client information? Previous literature provides mixed results. While some studies suggest that financial information on possible returns increases sustainable investment (Døskeland & Pedersen, 2016, 2021), other studies conclude that highlighting the ethical aspect of the sustainable investment increases willingness to invest sustainably (Barreda-Tarrazona et al., 2011; Bassen et al., 2019; Bauer et al., 2021). Yet, it might be less about ethical or moral aspects but more about showing the impact of behavior. Literature from several other domains shows that perceived effectiveness is a strong determinant of pro-environmental behavior (e.g., van Valkengoed & Steg, 2019). Yet, it remains unclear whether information on financial return or on environmental impact increases sustainable investments more effectively. Also, little is known about possible impacts of the combination of financial and environmental information. Moreover, studies on how the choice on sustainability preferences of clients should be designed are scarce. Recently, voting for

sustainable engagement based on selected United Nations' Sustainable Development Goals was suggested as a means to choose sustainability preferences (Bauer et al., 2021).

We investigate the impact of financial and environmental information as well as their combination on sustainable investment decisions in a pre-registered large online field experiment mimicking a financial investment consultation in line with the new EU regulation.¹ Collaboration with the financial authorities and eight leading banks in Austria ensured that the provided information about financial and environmental aspects and the way to elicit sustainability preferences fulfill the requirements of the EU regulation and are relevant to the banks. A total sample of 2254 participants, consisting of retail investors (N = 871) and a sample representative of the Austrian population (N = 1383), participated in the preregistered experiment. In the beginning of the experiment participants received information (financial and/or environmental). Also, participants were given to express their sustainability preferences in a general or granular choice. In the financial information treatment, participants receive information about the financial benefits of a sustainable investment and in the environmental information treatment, they receive information about the investment's impact on the environment. Treatment assignment was randomized. In addition, we randomly assigned participants to have either a general choice on their sustainability preferences, e.g., what is the minimum percentage you want to invest in a way that meets ESG criteria, or a granular choice, additionally asking for the preferred focus of the investment e.g., reducing negative impact on ESG factors and/or invest in activities that are considered as sustainable by law (e.g., the EU taxonomy). By this, we tested two discussed options of the regulation: asking only generally about the sustainability preferences or also giving the choice to specify the focus of sustainability in the investment. In the granular choice, we gave participants control of whether they want to avoid negative impact of investments (e.g., investment in mineral oil) or whether they prefer investments that hold up to legal standards of sustainability (e.g., the EU taxonomy). The mode of the choice (general vs. granular) was randomized. Subsequently, participants were presented with an investment plan based on their preferences. Investment decisions were incentivized by investing the amounts as decided by the participants on the stock exchange for a set of randomly chosen participants. Additionally, we assess participants' satisfaction and the stability of investment decisions in a post-experimental survey.

¹ Pre-registrations can be found on <https://osf.io/pe4g2> and <https://osf.io/3zymq>.

We find that financial as well as environmental information stimulate sustainable investments compared to the control group which received only a short explanation of ESG-factors. The combination of information has no additional impact on sustainable investments. The financial and environmental information do not yield strong indications in terms of increasing investor satisfaction. General or granular choice has no effect on sustainable investments and satisfaction. Regarding differential effects, we find that participants with high biospheric values, financial literacy, higher education, household income, and trust in ESG products are more inclined to investing sustainably than others. Moreover, women and participants with lower risk preference invest more sustainably. Stability of investments is barely affected by information or the mode of choice, however, if sustainable investments perform better than conventional investments, participants tend to increase sustainable investments.

The remainder of this paper is organized as follows: Section 2 holds the literature review and hypothesis development. Section 3 outlines the experimental setup, including the sample and the experimental design and outcome variables. Section 4 presents the empirical results. Section 5 discusses the results in the context of previous literature. Section 5 concludes with practical suggestions.

2. Literature review and hypothesis development

In the following, the theoretical background and hypothesis development for financial and environmental information, individual characteristics, the choice on sustainability preferences are provided. The hypotheses are pre-registered.²

2.1. Financial and environmental-impact information affect ESG-investments

Previous studies show that the way in which information in financial and environmental considerations is explained affects pro-environmental behavior (Bolderdijk et al., 2012) and considerations of sustainable funds (Markowitz et al., 2011). Thereby, financial as well as environmental information are seen as particular relevant. Thus far, environmental information

² All hypotheses are pre-registered separately for two survey waves on <https://osf.io/pe4g2> and <https://osf.io/3zymq>. Both pre-registrations contain identical hypotheses. To keep the present paper straightforward, we only list the most important overarching hypotheses in the paper. Detailed analysis of all pre-registered hypothesis is in the Appendix.

mostly covered ethical or moral aspects, however, it might be more promising to highlight environmental impact. Moreover, the effect of combining both information remains unclear.

Financial information, e.g., information about the possibility to achieve financial gain and reduce specific risks related to environmental factors through sustainable investments, is seen as a classical determinant for sustainable investments (e.g., Nilsson, 2008). A large-scale natural field experiment in Norway with a sample of more than 140,000 investors revealed that newsletters with financial information were most effective in increasing sustainable investments: the results of actual investment behavior indicated that investors bought more green funds within one month after receiving the newsletter (Døskeland & Pedersen, 2016, 2021). Thus, if investors were shown financial information that made them feel to be able to gain returns with sustainable investments, they invested more sustainably. Other studies (Nilsson, 2008; Riedl & Smeets, 2017) showed as well that financial information and considerations increases the willingness for ESG investment to some extent.

Environmental-impact information on the positive impact of a certain investment on the environment, e.g., that a certain investment behavior can mitigate climate change, is another potential determinant for sustainable investments. The belief in the effectiveness of ones own behavior is central to any human action, also climate action, as a meta-analysis on climate change adaptation behavior, however not investment decisions, based 106 studies shows (van Valkengoed & Steg, 2019). Accordingly, survey studies show that perceived-effectiveness is related to sustainable investments in Sweden (Nilsson, 2008), Germany (Wins & Zwergel, 2016), the Netherlands (Apostolakis et al., 2018) or Spain (Palacios-González & Chamorro-Mera, 2018). However, there are only few experiments on the effect of environmental impact on investment decisions. A recent lab-in-the-field experiment with 399 crowdfunding investors revealed that most participants would forgo financial gains for sufficiently large environmental impact (Siemroth & Hornuf, 2021). In addition, Heeb et al. (2021) show in an incentivized field experiment with 537 Dutch retail investors that although there was willingness to pay in terms of fees for sustainable investments, the willingness to pay did not differ between saving different amounts of CO₂. Also, showing the social impact achieved by a fund, promotes socially oriented investments (De Amicis et al., 2020). Instead of outlining the environmental impact, many experiments on investment behavior used moral or ethical information in form of labels (Bassen et al., 2019), explicit naming of the funds (Barreda-Tarrazona et al., 2011) or ethical framing of the decision (Glac, 2009). Yet, investors might be less influenced by moralizing investment behavior (what one *should* achieve) than by information on whether

their investment behavior is effective and has a positive impact on the environment or not (what one *could* achieve).

To the best of our knowledge, there are only two studies which directly compare whether financial or moral information is more effective, resulting in mixed outcomes. While Døskeland and Pedersen (2016, 2021) find that financial information is more effective than moral information Glac (2009) suggests the opposite, that moral considerations are more effective (Glac, 2009). The reasons might be found in differing strength and focus of the manipulation, addressing moral instead of the presumably more important environmental impact or in employing decisions frames and non-incentivized designs. Based on the literature, we hypothesize that financial as well as environmental information should increase sustainable investments. Thus, we pose the following hypothesis:

H1: Financial information and environmental information increase sustainable investments compared to a no-information condition.

Knowledge on the impact of a combination of financial-return and environmental-impact information on sustainable investments is scarce. Given the existing results that both, financial and environmental information are potentially important (Gutsche & Ziegler, 2019; Hartzmark & Sussman, 2019; Hong & Kostovetsky, 2012; Riedl & Smeets, 2017), providing more information and reasons to invest in ESG, might stimulate sustainable investments. Providing a combination of financial and environmental information might therefore be more effective than just providing one form of information. Thus, we pose the following hypothesis:

H1.1: The combination of financial and environmental information increases sustainable investments more than financial or environmental information.

2.2. Financial and environmental information and satisfaction

Investor satisfaction is an important factor for banks as for any other businesses as it guarantees client loyalty and secures profitability (Seiler et al., 2013). Satisfaction is influenced by information content in the online banking portal (Yoon, 2010). Likely, also information on financial considerations and ESG performance of investments might impact satisfaction (Nilsson et al., 2014). Thus, providing financial and environmental information on positive aspects of sustainable investments might increase satisfaction with the information in

participants by feeling more informed about financial or sustainability matters. Based on this line of argument, we pose the following hypothesis:

H2: Financial information and environmental information increase satisfaction with the information compared to a no-information condition.

Also, given this line of argument, presenting financial and environmental information should increase satisfaction more than if only on aspect is presented. Thus, we pose the following hypothesis:

H2.1: The combination of financial and environmental information increases satisfaction with the information more than financial or environmental information.

2.3. General and granular choice on sustainability preferences

In addition to the type of information, also a general and simple versus a more granular and detailed choice on the sustainability preferences (mode of choice) might affect investment decisions. We investigate the effect of a general choice (only one question which percentage of the investment should be in sustainable assets) versus a granular choice (general question and question on focus of the sustainable investment) on sustainable investments and satisfaction with the choice. We do not expect interactions between the manipulation of information and the mode of choice.

Previous studies on the choice on sustainability preferences (see e.g., Bauer et al., 2021 who suggested SDGs in the choice) and satisfaction do not give a clear direction of expected results for sustainable investments and satisfaction. To our knowledge, there is no experimental literature that tests the mode of choice on sustainability preferences in the way it will be mandatory starting in August 2022 (general vs. granular). The effects of different modes of choice might several directions. A general choice might be perceived as straightforward and easy and increase sustainable investments and satisfaction, while it could also have the opposite effect, e.g., that a general choice might be perceived as insufficient or less trustworthy. The granular choice could give more control to decide about the investment and thus increase peoples' utility. With an increasing number of options, a better fit with preferences of investors might be possible (Johnson et al., 2012) and thus increase willingness to invest. Yet, investors might not care about the differences or be subject to information overload – and become

confused. In literature this is referred to as the choice overload hypothesis (Scheibehenne et al., 2010). Thus, we pose the following hypothesis:

H3: There will be a difference in sustainable investments and satisfaction between a general and a granular choice on sustainability preferences.

2.4. Individual characteristics of investors

Individual characteristics (biospheric as well as altruistic values, income, and financial literacy) are determinants for sustainable investments. Previous literature shows that biospheric and social values, e.g., goals and guiding principles regarding environmentally friendly behavior and the consideration of others utility, are positively related to sustainable investments (Bassen et al., 2019; Bauer et al., 2019; Gutsche, et al., 2020). Research on the relationship between household income and sustainable investments finds positive (Cheah et al.2011; Escrig-Olmedo et al., 2013; Gutsche et al., 2020) or no significant relationship (Hoffmann et al., 2019; Nilsson, 2008; Riedl & Smeets, 2017). Financial literacy, understanding of financial concepts, was found to increase sustainable investments in a recent study (Gutsche et al., 2020), that applied an objective measure of literacy developed by Lusardi and Mitchell (2008). However, other studies which employed self-reported financial literacy found a slightly negative effect on sustainable investments (Bauer & Smeets, 2015; Gutsche et al., 2021; Riedl & Smeets, 2017).

H4: Higher biospheric and altruistic values, household income, and financial literacy are related to an increase in sustainable investments.

2.5. Exploratory: Revision and stability of investment decisions

Stable investments are seen as a success factor for long-term investments. Investors with unstable investment decisions might suffer from loss by buying high and selling low (Bucher-Koenen & Ziegelmeyer, 2014). Bollen (2007) shows that sustainable investors respond to positive return of sustainable funds more than conventional investors in an investigation of investor cash flows from 1980 to 2002. At the same time, sustainable investors to a lesser extent respond negatively to negative returns compared to conventional investors and are more loyal to sustainable funds. More recent results from a survey study confirm this

finding and additionally reveal that loyalty to sustainable funds is related to ethical motives while financial motives reduce loyalty (Peifer, 2014). Given the line of argument of financial and environmental information affecting sustainable investment decision positively, we further examine the stability of the investment decision in two hypothetical scenarios and explore the impact of information on stability and to what extent participants revise their investment decisions.

2.6. The current research

Our research expands existing studies by providing results with actual investment behavior in an incentivized experiment with a large sample of experienced investors and the general population ($N = 2254$). With few exceptions (Barreda-Tarrazona et al., 2011; Gutsche et al., 2020; Riedl & Smeets, 2017), literature on investment decisions is based on comparatively small samples (Apostolakis et al., 2018; Nilsson, 2009; Palacios-González & Chamorro-Mera, 2018), no incentivization of the decision (Apostolakis et al., 2018; Glac, 2009) and often only yielded correlational results from cross-sectional questionnaire studies (e.g., Nilsson, 2008; Wins & Zwergel, 2016). Thus, our contribution to literature is twofold.

First, our research aims to contribute to the conversation in literature on how financial and environmental information affect sustainable investments (e.g., Barreda-Tarrazona et al., 2011; Døskeland & Pedersen, 2016, 2021; Glac, 2009; Heeb et al., 2021; Siemroth & Hornuf, 2021). We extend previous findings by investigating the effect of the combination of financial and environmental information on sustainable investments - and thus the additional value of combined financial and environmental information in increasing sustainable investment decisions.

Second, we add to the literature on how to ask investors for their sustainability preferences. Thus far, studies on general vs. more granular choice on sustainability preferences and the factual translation into investment decisions remain scarce (see Bauer et al., 2021 for an exception). We fill this gap by investigating whether allowing subjects to specify the degree of sustainability their investments have to fulfill in a way that is in line EU regulations affects their investment behavior, which is particularly relevant for practical implications, aiming to promote sustainable investments.

3. Data and experimental design

To test our hypotheses, we conducted an incentivized online experiment including two samples: experienced retail investors and a sample of the Austrian population with less experience. We preregistered both samples separately (retail investors: <https://osf.io/pe4g2>; population sample: <https://osf.io/3zymq>). Whereas the material was foremostly identical, we changed small aspects such as the number of selected participants for the incentive.³ The procedure and analysis of this paper follows the pre-registration of the population sample. For clarity, we present all results based on the total sample including a dummy for the population sample and show the results for each sample separately in the Appendix.

3.1. Treatment manipulations

In the following we present the experimental manipulations. We used a between-subjects design. The information was manipulated with a 2 (financial-return yes versus no) x 2 (environmental-impact yes vs. no) factorial design and the choice on the sustainability preferences was manipulated in a 2 x 1 (general vs. granular) factorial design. Thus, we randomly assigned participants to one out of eight different treatments (Table 1). German original and translation can be found in the Appendix.

Table 1. Treatment conditions

		Mode of choice on preferences	
		General	Granular
Information	No	N = 286	N = 277
	Financial-return	N = 274	N = 278
	Environmental-impact	N = 283	N = 289
	Combined	N = 281	N = 286

³ These are all changes in the material and procedure compared to survey wave one, pre-registered for survey wave two: Based on a Power Analysis of the preliminary results of the retail investor sample, we increased the sample size of the population sample to N = 1400. Participants were informed that only five (instead of 10) winners will be selected in the lottery. We adapted the attention check to suit non-investors and added a question on participants' response reliability.

In the *financial-return information* setting, ESG investments were described as a possibility to achieve financial gains and to reduce specific risks. The manipulation text started with a headline (e.g., ESG-investments lead to revenue) and then outlined why ESG investments are a good investment from a financial perspective (e.g., investing in future technologies and reducing specific risks related to ESG factors).

In the *environmental-impact information* setting, ESG investments were described as a possibility to promote sustainability and have an impact sustainability issues and a sustainable economy. Again, the manipulation text started with a headline (e.g., ESG-investments promote sustainability). The information further outlined why ESG investments are a good investment from an environmental impact perspective (e.g., having an impact on the environment and promoting companies that consider ESG criteria).

In the *combined information* setting, the financial as well as the environmental information were shown. In the no-information group (control group), no additional information was provided.⁴

The *general choice* assessed the minimum percentage of investments that should consider ESG-criteria by asking the participants (*What is the minimum amount of your investment that should be invested into investment products that meet ESG sustainability criteria?; 1 = 0 % - no sustainable products; 2 = up to 25%; 3 = up to 50%; 4 = up to 75%, 5 = 100% - only sustainable products*).

In the *granular choice*, the general choice was supplemented with an additional choice-question. After the general choice, participants were asked about the preferred focus of the investment (*If you choose to invest in ESG, you can select one or two of the following two product categories; 1 = Investment products that avoid important negative impacts on ESG*

⁴ A pre-test with 58 participants in September 2021 showed that the information has the intended effect. Participants were randomly presented with the information and were asked for their agreement on three items (*With sustainable investments I can ... earn money; have an impact; follow my values*). All items were answered on a seven-point Likert type scale (1 = I totally disagree/7 = I totally agree). The results of t-Tests show that the financial information ($M = 5.46, SD = 0.98$) received significantly ($p = 0.03$) higher ratings for “Earn Money” than environmental ($M = 4.65, SD = 1.70$). The environmental information was rated higher ($p < 0.01$) on “Have an impact” ($M = 5.62, SD = 1.10$) than the financial information ($M = 4.50, SD = 1.38$). However, the environmental information was not significantly rated higher ($p = 0.144$) for “Follow my values” ($M = 5.74, SD = 1.44$) than the financial information ($M = 5.16, SD = 1.45$).

factors; 2 = Investment products that invest in activities that are considered sustainable according to legal requirements (Disclosure Regulation, Taxonomy Regulation)). If participants chose 25% or more in the general choice, the granular choice was displayed, and participants were bound to determine the preferred focus.

3.2. Data and Measurement

In the following, we present the main outcome variables (sustainable investments and satisfaction with the information as well as with the choice). Additionally, we present variables on individual differences as well as control variables. Finally, we present the measurement of the exploratory variable *stability of investments*.

3.2.1. Outcome variables

Sustainable investments. The variable *sustainable investments* is defined as the percentage of investments in sustainable funds as proportion of the total investment amount of 600 Euro. For the investment decision, participants were presented four equity funds (similar as in Gutsche et al., 2020) and, based on their stated preferences from the choice, the non-binding investment recommendation.⁵ Participants made an investment decision by allocating 600 Euro to four funds or accepting the non-binding recommendation. Participants knew that the investment decision of randomly selected 15 participants would be invested and paid out after one year – financed by the authors. As Figure 1, displays, the four funds (two conventional and two sustainable equity funds) were identical in terms of risk and performance but differed in the ESG-considerations and thus branches. The names of the funds were not made explicit to participants to ensure that the participants decided based on the information we provided.

⁵ Fund A: AT0000805460 Raiffeisen Osteuropa Aktien T; Fund B: AT0000764758 Raiffeisen US Aktien R T; Fund C: AT000UMWELT5 Kepler Umwelt Aktienfonds T; Fund D: LU2257980289 Mandarine Global Transition R. Please note that performance in the last year was relatively high due to the recovery after COVID-19.

Fund	Fund A	Fund B	Fund C	Fund D
Orientation	conventional		sustainable	
Type	Fund with focus on energy and finance	Fund with focus on information technology and healthcare	Fund that avoids negative impacts on ESG factors	Fund that invests in activities that are considered sustainable by law
Risk and return profile	6	6	6	6
Performance in the last year	Greater than 30 %	Greater than 30 %	Greater than 30 %	Greater than 30 %
Largest shares by sector	Finance, Oil, Gas	Microelectronics, Semiconductors, Agricultural products	Insulation technology, Metal recycling, Electricity	Plant engineering, Wind energy, Semiconductors

Figure 1. The four equity funds with additional information, as displayed to the participants.

Satisfaction with the information on ESG investments was assessed as the aggregated average of four items (*The information I received at the beginning about ESG investing was ... understandable, simple, informative, helpful*; standardized Cronbach $\alpha = 0.91$), all answered on a seven-point Likert type scale (1 = *I totally disagree*/7 = *I totally agree*). Screenshots of the information were shown to remind participants of the information.

Satisfaction with the choice was assessed as the aggregated average of four items (*Asking me how much I would like to invest in ESG investment products was ... understandable, simple, informative, helpful*; standardized Cronbach $\alpha = 0.92$), all answered on a seven-point Likert type scale (1 = *I totally disagree*/7 = *I totally agree*). Screenshots of the choice were shown to remind participants of the choice.

3.2.2. Individual determinants

Biospheric values and altruistic value orientation were assessed as the aggregated average of four items respectively (biospheric values: e.g., *preventing pollution*, Cronbach $\alpha = 0.93$; altruistic values: e.g., *social justice*, $\alpha = 0.98$). These scales were based on De Groot and Steg (2007, 2008) and the German translation of Geiger et al. (2017). Participants were asked to indicate whether the items (four items on biospheric and four items on altruistic values) are guiding principles of their lives on a seven-point Likert type scale (*Please indicate*

how important the following values are to you as guiding principles in your life; 1 = Opposed to my values/7 = Extremely important).

Household income was measured with a standard procedure by dividing the household income of participants by household size. In this calculation adults (*How many people including you live permanently in your household?*) were weighted by 1 and minors under 18 years by 0.5 (*How many of the people in your household are under 18?*). Income was measured with a single choice question in 1,000 Euro increments from *less than 1,000 Euro* to *more than 8,000 Euro*.

As preregistered, we used multiple imputation by chained equations (MICE) (van Buuren & Groothuis-Oudshoorn, 2011) in the R statistical package to impute missing data in the two covariates income (10.3%) and number of children in the household (3.5%). Multiple imputation is considered as appropriate method to complete missing data (Hanss & Böhm, 2013, Tabachnick et al., 2007). We imputed income and number of children in the household for the respective cases with an iterative algorithm by creating 10 datasets that include plausible values for the missing cases, which were then pooled into one dataset and used in the further course of the analysis. Thus, all regression analyses outlined in the main text are calculated with these imputed data.

As an objective measure for financial literacy, we used the scale by Lusardi and Mitchell (2008), which consists of three questions on interest rates, inflation, and risk, e.g., *Suppose you had \$100 in a savings account and the interest rate was 2 percent per year. After 5 years, how much do you think you would have in the account if you left the money to grow?* The number of correct answers (0-3) is combined to an index of financial literacy (0 = *no correct answer*/1 = *all answers correct*).

3.2.3. Control variables

Trust in ESG products (adapted from Nilsson (2008) and Wins & Zwergel (2016)) was assessed with one item, answered on a seven-point Likert type scale (*I trust that providers follow ESG guidelines; 1 = I totally disagree/7 = I totally agree*).

Gender, age, education, number of children in the household, risk preference, years of experience in investing, and perceived relevance of the incentive were assessed as control variables (see experimental material in the Appendix). As additional controls, we added

dummy variables for the provision of the e-mail address (pre-requisite to participate in the incentive-lottery), an attention-check question, and a dummy for the survey wave.

3.2.3. Exploratory outcome variables

For assessing stability of the investment decision, the post-experimental survey contained two hypothetical scenarios of investment performance (conventional funds perform 5% better than sustainable funds and vice versa after 6 months). Participants were then offered the possibility to hypothetically revise their initial investment decision in each of those two scenarios by either increasing or decreasing the invested amount invested in sustainable funds, answered on a on a five-point Likert type scale ($1 = \textit{significantly reduce} / 3 = \textit{neither reduce nor increase} / 5 = \textit{significantly increase}$). Based on these two revision variables, we constructed a binary variable whether participants adapted the investment in at least one scenario (stability = 0) or did not adapt their investment both scenarios (stability = 1).

3.3. Participants

We recruited our sample of 2254 participants in two survey waves between October 2021 and February 2022.⁶ The sample was composed of 56.70% men with an average age of 48.20 years ($SD_{\text{age}} = 15.52$). In the first wave, participants were invited via newsletters or website banners by eight Austrian Banks ($N = 871$) and in the second wave, participants were recruited by a market research agency according to quotas for age and gender in the Austrian population (Talk Online Panel; $N = 1383$).⁷

As displayed in Table A.1 in the Appendix, one-third of the participants had a high school or university degree. Most participants reported an income between 2,001 Euro and

⁶ Corresponding to the two pre-registrations for the retail investor sample and the population sample. The pre-registered exclusion criteria of the population sample were applied. Thus, after finishing the data collection, 25 participants were excluded from the initial sample of completed observations due to repeated participation (retail investor sample: $N = 7$; population sample: $N = 18$).

⁷ We specifically aimed to recruit investors who were invited via investor-specific newsletters – or via an entry on the website/online banking portal in the case of smaller banks. Therefore, we could not determine the exact number of participants ex ante. For orientation we used the available data: one mid-size bank reported to send the newsletter to about 40.000 customers. Smaller banks posted the invitation to the study on their website and online banking tool, which was reported to have about 1,800 clicks per day. We expected a participation rate of 1-2%. Based on this, we aimed to reach a minimum of 1,200 participants. Yet, due to the unexpectedly low participation rate and despite reminders, the sample size could not reach the pre-registered size.

5,000 Euro. Concerning experience with investments, 34.1% reported no prior experience. Notably, 29.8% of the participants indicated more than 11 years of experience (see also Table A.1 in the Appendix for sample descriptions for both waves separately). Financial literacy on average amounts to 0.80 ($SD = 0.28$), which equals to 2.4 out of 3 questions answered correctly, which is comparable to results from a study in Germany (Gutsche et al., 2020). Biospheric and altruistic values received relatively high ratings on the seven-point Likert scale. On average, participants indicated a medium risk preference in financial investments.

3.4. Procedure

Upon invitation to participate in a study on investment decisions, we linked the participants to the survey platform Qualtrics and provided them with general instructions, terms of participation, and privacy statements.⁸ Moreover, we informed about the incentive based on the lottery and that the investment decisions of 10 (survey wave 1) and 5 (survey wave 2) randomly selected participants would be realized. Thus, in line with previous studies (Gutsche et al., 2020), we invested the allocated investment amount of each fund on the stock exchange and, depending on the performance, pay out after one year.

Following the instructions, we asked participants to imagine being in a financial advice situation at a bank, because they want to invest 600 Euro. Moreover, we asked to imagine that the advisor would inform them about ESG investment and an explanation of the term ESG. Participants were informed that next to liquidity, returns and risk, also ESG factors (e.g., climate protection or social labor conditions) can be considered in their investment. Examples of ESG factors were additionally depicted in a graph (see experimental material in the Appendix).

The treatment assignment to one of eight experimental conditions was randomized and manipulated the information on financial returns and/or environmental impact as well as the general versus granular choice. We informed the participants, that the response in the choice was used for a non-binding investment recommendation on the allocation of their 600 Euro in the investment decision (e.g., a choice of 75% in the general choice resulted in a recommendation of 225 Euro in each sustainable fund and 75 Euro in each conventional fund).

⁸ The procedure was approved by the Ethics Committee of the Institute for Advanced Studies and a representative of interests for investors of the Austrian Chamber of Labor. Compliance with the General Data Protection Regulation (GDPR) was audited by the data protection officer of the Institute for Advanced Studies.

After the manipulations, the investment decision into four funds followed. At this stage, we again reminded the participants of the incentive and the lottery. Thereafter, questions on satisfaction with the information and with the choice on sustainability preferences followed.

A post-experimental questionnaire surveyed individual differences, such as altruistic and biospheric values, financial literacy, and household income. Finally, we assessed information related to previous investment experience and sociodemographic characteristics. At the end, participants could leave their email address for participating in the lottery or receiving the results of the study. Finally, participants were thanked for their participation.

4. Results

In the following, we first present descriptive statistics of our outcome. Second, we investigate the effect of financial and environmental information on sustainable investments (*H1*). Third, the effect of information on satisfaction is tested (*H2*). Finally, effect of general and granular choice on sustainability preferences on sustainable investments and satisfaction (*H3*) are analyzed, followed by individual differences (general heterogeneity) in sustainable investments (*H4*). For sake of clarity, we present all results for the total sample. Results for both survey waves separately and other exploratory results are presented in the Appendix.

4.1. Descriptive statistics

As shown in Table 2, participants invest on average 394.38 out of 600 Euro, equal to 65.73% ($SD = 27.94$), in sustainable funds. Satisfaction with the information and with the choice on sustainable preferences is relatively high on the seven-point Likert scale. In the general choice on sustainability preferences, that all participants answered, 3.86% of the participants indicate a preference for 0% sustainable products, while 26.31% indicate a preference for 100% sustainable products. In the granular choice on sustainable preferences, that only participants in the granular choice condition answered, participants prefer products that are sustainable according to the law (e.g., the EU taxonomy). See Table A.2 in the Appendix for descriptive statistics for both waves separately

Table 2. Summary Statistics

Variable	M (SD), f (%)
Sustainable investments (%)	0.66 (0.28)
Conventional Fund A (Euro)	83.74 (96.42)
Conventional Fund B (Euro)	121.87 (107.92)
Sustainable Fund C (Euro) ^a	176.99 (131.16)
Sustainable Fund D (Euro) ^a	217.40 (146.70)
Satisfaction with info	5.60 (1.13)
Satisfaction with choice on preferences	5.64 (1.16)
General choice on sustainability preferences	
0% - no sustainable products	87 (3.86%)
Up to 25%	372 (16.50%)
Up to 50%	649 (28.79%)
Up to 75%	553 (24.53%)
100% - only sustainable products	593 (26.31%)
Granular choice on sustainability preferences ^b	
Avoid negative impact	351 (32.59%)
Sustainable according to law	527 (48.93%)
Both	199 (18.48%)

Note. f = frequency, % = percent of the full sample (N = 2254), M = mean, SD = standard deviation. For categorical variables (general choice, granular choice), frequencies, and percentage of the sample (in brackets) are displayed. For the other variables, the mean and standard deviation is presented.

^a Fund C and D match the mode of choice: Fund C avoids negative impacts on ESG-factors while fund D invests in activities that are considered sustainable by law.

^b Only participants in the respective treatment and who chose 25% or more in the general choice were shown the granular choice. Thus, the reported sample size of the granular choice is reduced to N = 1077.

4.2. Financial and environmental information promote sustainable investments

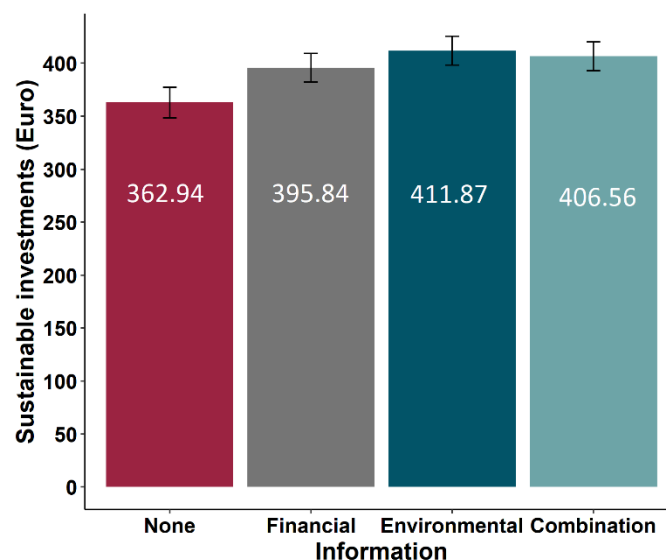
To test our hypotheses on whether financial and environmental-impact information increase sustainable investments compared to a no-information condition (*HI*) we conduct OLS regression analyses (Table 3). In Model 1, the outcome variable sustainable investments is regressed on the financial and environmental information. In Model 2, the mode of choice on sustainability preferences (Model 1b) is included. In Model 3, income, biospheric and altruistic values, and financial literacy are added. In Model 4, we include control variables for age, gender, number of children, experience, risk preference, the importance of the incentive and dummy variables indicating whether participants submitted their e-mail address, failed the attention check and for the two survey waves (see Table B.1. in the Appendix). These control

variables will also be used as controls in other following models. All models are highly significant ($p < 0.001$).

Results show that across all models, financial information significantly increases sustainable investments compared to the no-information condition with about 5 percentage points (pp) across all models (as an example, in Model 1, this equals to 19.05% of the standard deviation of the control). Also, environmental-impact information significantly increases sustainable investments with about 7pp (e.g., in Model 1, this increase is 28.33% of the standard deviation of the control or an increase of 13.48% relative to the control condition). In other words, and as shown in Figure 2, investors who are provided environmental information invest, on average, 411.87 Euro sustainably, while in the control condition, only 362.94 Euro are invested sustainably. However, there is no significant difference between the financial-return and environmental impact treatments (Wald test for coefficient equality, $\chi^2(1) = 2.60$, $p = 0.11$).

Finally, we find a negative interaction effect of financial and environmental information indicating that both types of information are substitutes rather than complements. The negative interaction of financial and environmental information is reflected in Figure 2, where sustainable investments are slightly lower when information is presented in combination.

Figure 2. Sustainable investments in Euro by information treatment.



Note. Mean of sustainable investments (in Euro) and 95% confidence interval is presented for each treatment of the information (no information: $N = 563$; financial information: $N = 552$; environmental information: $N = 572$; combination: $N = 567$).

Table 3. OLS-models: prediction of sustainable investments by information.

	(1)	(2)	(3)	(4)
Financial	0.055*** (0.017)	0.055** (0.017)	0.049** (0.016)	0.041** (0.015)
Environmental	0.082*** (0.016)	0.082*** (0.016)	0.071*** (0.016)	0.063*** (0.015)
Financial * environmental	-0.064** (0.023)	-0.064** (0.023)	-0.058** (0.022)	-0.045* (0.022)
Granular choice		0.001 (0.012)	0.003 (0.011)	0.005 (0.011)
Biospheric values			0.071*** (0.009)	0.063*** (0.009)
Altruistic values			0.003 (0.009)	-0.014 (0.009)
Household income			0.018** (0.006)	0.024** (0.007)
Financial literacy			0.090*** (0.021)	0.074*** (0.022)
Constant	0.605*** (0.012)	0.604*** (0.013)	0.062. (0.037)	0.001 (0.058)
Control variables	NO	NO	NO	YES
N	2254	2254	2254	2254
R2 adjusted	0.012	0.011	0.116	0.172
F	9.797	7.349	37.795	24.338
p	0.000	0.000	0.000	0.000

Note. ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Control variables: age, gender, education, children, experience, risk preference, relevance of the incentive, email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), sample dummy (1 = retail investor sample, 2 = population sample).

4.3. The effect of financial and environmental information on satisfaction

To test whether financial and environmental information affect satisfaction with the information (*H2*) we also conducted OLS-regression analyses (Table C.1 in the Appendix). We find no significant effect of information on satisfaction with the information.

4.4. The effect of general vs. granular choice on sustainable investments and satisfaction with the choice

To analyze the relationship between the mode of choice and sustainable investments (*H3*), we calculate OLS models including sustainable investments and satisfaction with the choice as outcome variables (details can be found in Appendix). While Models 2-4 are identical as for sustainable investments (Table 3), in the respective Model 1 (min. $p > 0.36$), only the mode of choice is included as predictor. The results show that the mode of choice has no large effect on sustainable investments and satisfaction with the choice (Table E.1).

4.5. Differences in values, income, and financial literacy as determinants for sustainable investments

To examine which individual differences determine sustainable investments, OLS regression results from Models 3 and 4 depicted in Table 3 are used. These results show that biospheric values, higher household income and financial literacy are related to a significant increase in sustainable investments while altruistic values indicate no significant relationship.

The results also show that among the control variables particularly increased trust in ESG ($b = 0.043, p < 0.001$) and higher education ($b = 0.017, p < 0.001$) are associated with an increase in sustainable investments. Higher preference for risk taking ($b = -0.011, p < 0.001$) is related to a decrease of sustainable investments. Sustainable investments are lower in men than in women ($b = -0.038, p < 0.01$). The effect for non-binary gender is not interpretable, due to few observations. We show the results for treatment heterogeneity in the Appendix.

4.6. Exploratory Analysis

In the following, results on explorative analyses are presented. In the general and granular choice on sustainability preferences, participants were offered a choice on their preferences. Based on their stated preferences, non-binding recommendations for the investment decisions were provided.

4.6.1. The impact of information on stated sustainability

To explore whether the financial and environmental information affect participants' sustainability preferences in the general choice on sustainability preference, we calculate ordered logistic (probit) models. Identical to the models for sustainable investments (Table 3), however with the ordinal outcome of the sustainability preferences in general choice as outcome variable.

Results (Table 4) show that across all models, financial information significantly increases the probability of choosing higher percentages of sustainability in the general choice. Also, environmental-impact information significantly increases the probability that participants chose higher percentage of sustainability in the general choice. The results on the negative interaction coefficient of financial and environmental information indicates that the effect of the environmental information might be stronger when presented alone, compared to when presented in combination with financial information.

To compare the size of effects of the financial versus environmental information, a Wald-test is conducted for Model 1 to test for coefficient equality. Results show that environmental information more strongly increases the probability of choosing higher percentages than the financial information ($\chi^2(1) = 6.57, p = 0.01$).

We also explore whether financial and environmental information affect the choice of options in the granular choice on sustainability preferences (avoid negative impact and/or sustainability according to the law). The χ^2 -Test did not indicate a significant influence of the information on the choice of options in the granular choice ($\chi^2(6) = 4.84, p = 0.56$).

4.6.2. Stability of investment decisions

In the post-experimental survey, participants could revise their initial investment decision in each of those two scenarios of investment performance by either increasing or decreasing the invested amount invested in sustainable funds, answered on a on a five-point Likert type scale ($1 = significantly\ reduce / 3 = neither\ reduce\ nor\ increase / 5 = significantly\ increase$). The results indicate that participants stick with or increase sustainable investment if sustainable funds perform better ($M = 3.64, SD = 0.84$), while sustainable investments are less reduced if conventional funds perform better ($M = 3.04, SD = 0.72$).

Table 4. Probit models: prediction of sustainability preference by information.

	(1)	(2)	(3)	(4)
Financial	0.169*** (0.063)	0.170*** (0.063)	0.157* (0.064)	0.132* (0.064)
Environmental	0.318*** (0.063)	0.318*** (0.063)	0.293*** (0.063)	0.276*** (0.064)
Financial * environmental	-0.207* (0.089)	-0.208* (0.089)	-0.198* (0.090)	-0.184* (0.090)
Granular choice		-0.036 (0.045)	-0.031 (0.045)	-0.019 (0.045)
Biospheric values			0.307*** (0.035)	0.274*** (0.036)
Altruistic values			0.036 (0.036)	-0.028 (0.036)
Household income			0.044 ⁺ (0.026)	0.057 ⁺ (0.030)
Financial literacy			0.267*** (0.084)	0.188* (0.093)
Control variables	NO	NO	NO	YES
N	2254	2254	2254	2254
Pseudo R ²	0.014	0.015	0.140	0.167

Note. ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. The depended variable is the general choice (*What is the minimum amount of your investment that should be invested into investment products that meet ESG sustainability criteria?*, 1 = 0 % - no sustainable products; 2 = up to 25%; 3 = up to 50%; 4 = up to 75%, 5 = 100% - only sustainable products). Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Control variables: age, gender, education, children, experience, risk preference, relevance of the incentive, email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), sample dummy (1 = retail investor sample, 2 = population sample). The pseudo R² is calculated with the Nagelkerke (also known as Cragg & Uhler) approach.

We then explored whether those participants who invested more sustainably than the median of sustainable investments differed in the decision to revise. As Table 5 shows, participants did not differ in the revision of conventional investments, depending on their initial degree of investment sustainability. However, participants who invested equal or above the

median of sustainable investments, also significantly increased sustainable investments in the hypothetical scenario, where sustainable investments perform better.

Table 5. Revision of investment by median-split

Revision of investment	Sustainable Investments		<i>p</i> -Value (U-test)
	Below median	Equal or above median	
Scenario: Conventional investments perform better	3.44	3.80	< 0.001
Scenario: Sustainable investments perform better	3.06	3.01	0.29

Note. The revision in both scenarios (conventional perform better than sustainable and vice versa) is categorized in two groups (sustainable investments below median or equal and above median). The revision is then compared by calculating a Mann-Whitney-U-test, indicating whether participants who invested below/above median did show different revision inclinations. Revisions was the choice to either increase or decrease the invested amount invested in sustainable funds, answered on a on a five-point Likert type scale (1 = significantly reduce / 3 = neither reduce nor increase / 5 = significantly increase).

To explore whether financial and environmental-impact information increase stability of investments compared to a no-information condition, we calculate logit models with stability of investment (SOI) as binary outcome variable (0 = no stability of investments, 1 = stability of investments, $M = 0.33$, $SD = 0.47$). The included predictors and control variables are identical to the previous models for sustainable investments (Table 3). The results do not indicate significant effects of financial and environmental information on stability of investments (minimum $p > 0.1$, see Appendix G.1 for detailed information).

4.7. Multiple hypothesis testing

We control for multiple hypothesis testing by applying the Benjamini-Hochberg procedure (Benjamini & Hochberg, 1995) of the “p.adjust” package in R-studio (see Appendix for results on all (sub)hypotheses). All hypotheses (H1 – H4) reported and tested main text hold multiple hypothesis testing correction.

5. Discussion

To increase the share of investments that consider ESG-criteria, it is of essence to understand how information about sustainable investments as well as the choice on sustainability preference in a financial advice situation need to be designed. Asking clients for their sustainability preferences is required by a regulation of the European Union starting in August 2022 (Commission Delegated Regulation (EU) 2021/2616, 2021). In the literature, financial return information is a classical determinant for sustainable investments (Døskeland & Pedersen, 2016). In the present research, environmental impact information and, closely related, perceived effectiveness (van Valkengoed & Steg, 2019) on environmental issues was identified as potential avenue to successfully increase sustainable investments. Both, financial and environmental information and their combination as well as different modes of choice on sustainability preferences were examined in an incentivized experiment with real money at stake. We recruited sample of retail investors and the general population to investigate the effect on sustainable investment decisions and satisfaction.

The results show that both, financial information (“you can achieve returns”) and environmental-impact information (“you can have an impact”) increases sustainable investments compared to the control condition in which only a short explanation of ESG was provided. However, showing both types of information in combination has no additional positive effect on sustainable investments. We observe no significant effect of information on satisfaction. A granular and more detailed choice does not affect investment decisions and satisfaction compared to a general choice. In general, we observe that higher biospheric values, financial literacy, household income, education, being female and trust relate to more sustainable investments, while higher risk propensity was negatively related.

5.1. Financial and environmental information promote sustainable investments

In agreement with *Hypothesis 1*, we find that the emphasis of financial considerations increases sustainable investments by about 5pp. Also, environmental-impact information increases sustainable investments by about 7pp. Contrasting *Sub-Hypothesis 1.1.*, however, the combination of financial and environmental information does not increase sustainable investments more than each information separately. Reasons for this finding might be that there is an upper bound (or ceiling effects) of sustainable investments, that participants do not want to exceed. This upper bound might be determined by a simple $1/n$ heuristic or in other words,

naïve diversification of the investment (Benartzi & Thaler, 2001), based on which we would expect 25% per fund or 50% sustainable investments. If financial and environmental information by themselves already increase sustainable investments to this upper bound, the combination of information has no additional room for increasing sustainability. Yet, also looking at the revision of the investments, we see that with better performance of sustainable investments compared to conventional investments, the participants (and particularly those with more sustainable investments) tend to revise towards more sustainability. It might thus be, that the upper bound might increase, if performance of sustainable investments is better.

The results of our study challenge the claim that financial considerations are the single most important driver for sustainable investments (Døskeland & Pedersen, 2016, 2021). Environmental-impact information turns out to be comparably effective. By emphasizing potential environmental impact of sustainable investments and potentially due to addressing perceived effectiveness (van Valkengoed & Steg, 2019), sustainable investments might be motivated, as pointed out by several non-experimental studies (Apostolakis, 2018; Nilsson, 2008; Palacios-González & Chamorro-Mera, 2018; Wins & Zwergel, 2016). Thus, our results align with previous literature, which highlights the positive effect of environmental impact on investments (Heeb et al., 2021, Siemroth & Hornuf, 2021).

In our control group, sustainable investments amounted to 60.49% of the investment sum. These results are slightly higher than in similar papers, where no information on ESG was provided and about 57% were invested in sustainable funds (Gutsche et al., 2020). However, we note that the explanation of ESG-factors in the baseline no-information group could already be considered as information, that explains this slight difference. Financial and environmental information adds up on this and include the effectiveness of the investment (returns or environmental impact). This contrasts with previous literature where the manipulations are compared to a control condition with factually no information (Døskeland & Pedersen, 2021). We however start with a general explanation of ESG which might induce sensitivity for the topic. The results of our study provide support to use financial return and environmental-impact information aiming to address perceived effectiveness to promote sustainable investments.

5.2. Information and satisfaction

In contrast to *H2* and *H2.1*, we do not find evidence that information increases satisfaction. Among the variables (*understandable, simple, informative, helpful*) that form the index for satisfaction, we find high accordance. Thus, it does not seem that there, e.g., one lower-rated variable obliterating the positive effect of others. The reasons why the manipulation of information did not yield increased satisfaction might be manifold, for example be related to the layout or length of the information. Moreover, in particular, the heterogeneity variables such as financial literacy as well biospheric and altruistic values relate to higher satisfaction.

5.3. Granular choice does not reduce investments and satisfaction

Testing *H3* reveals no evidence that a granular choice on sustainability preferences significantly reduces the amount invested in sustainable funds or satisfaction with the mode of choice. Thus far, comparable research that increases the understanding of how to assess sustainability preferences is limited (Bauer et al., 2021). We fill this gap in literature and provide practical evidence to understand whether a general or a granular choice increases sustainable investments, which is particularly relevant for practical implications, aiming to promote sustainable investments. In line with the argument of the upcoming EU regulations, the results are in support of a mandatory choice on sustainability preferences, even in a more granular and detailed format. The participants' decision to invest sustainably does not seem to suffer from choice overload (Scheibehenne et al., 2010) by the more extensive granular choice. Giving more options to choose the focus of the investment and thus taking more control over the way money is invested does not make a strong difference. Nonetheless, it should be considered that a feeling of being overwhelmed might arise, if the choice contains too many questions, is too detailed or complicated. Nonetheless, a granular choice, that considers the clients' preferences can advisors' recommendations for investment as precise as possible and aligned with the investors' values.

5.4. Individual differences in sustainable investments

Testing *Hypothesis 4* we find that higher biospheric values, financial literacy and income are positive determinants of sustainable investments. These results do not come as a surprise and are in line previous literature on values (Gutsche et al., 2020), literacy (Gutsche et al., 2020) and wealth (Cheah et al., 2011; Escrig-Olmedo et al., 2013; Gutsche et al., 2020).

Additionally, we test the widespread notion that sustainable investors are female, young, and educated (Dorfleitner & Nguyen, 2016; Nilsson, 2008). We find that women and more educated people are indeed more likely to invest sustainably, while we do not find a significant effect that higher age is related to more sustainable investments. We further observe that trust in ESG is a determinant of sustainable investments, aligned with other studies (Gutsche et al., 2020; Gutsche & Zwergel, 2016, 2020; Nilsson, 2008). Higher risk preferences are negatively associated with sustainable investments. Regarding experience, we do not find a strong effect. This finding is in line with other studies that claim no effect of experience (Lagerkvist, Edenbrandt, Tibbelin, & Wahlstedt, 2020).

5.5. Stability of investment decisions (exploratory)

Finally, we explore the effect of our manipulated variables, information, and choice on sustainability preferences on stability of the investment decision when facing different scenarios of performance. The results do not indicate that information or the mode of choice affects the stability of investment. However, if participants adapt their initial investment decisions, they often increase investments in sustainable funds, particularly when the conventional fund performed worse in the hypothetical scenario. Particularly, participants who invested more sustainably tended to increase sustainable investments in this scenario. Although this does not imply stability of the decisions, the findings could be regarded as aligned with previous literature which indicate higher loyalty to sustainable investments (Bollen, 2007; Peifer, 2014). These results could also be a sign of willingness to follow the trend of sustainable investing if these investments perform well.

5.6. General discussion

Information, that addresses financial return or environmental impact of sustainable investments can contribute to the goal of increasing sustainable investments that consider ESG criteria. Still, presenting the combination of both does not have an additional value to increase sustainability.

In practice, this increase in sustainable investments equals to considerable amounts of money. According to the Global Sustainable Investment Alliance (2020), the European market for sustainable investment grew to \$12 trillion in 2020. Sustainable investments account for about one third of all assets under management, with stark growth in the last years. This growth could even be accelerated by providing information on sustainable investments. To promote sustainable investments, not only the financial gains should be included in the narrative of financial debates. In fact, it is well recommended to include the aspect of environmental impact, that addresses perceived effectiveness regarding environmental issues, to the economic ideology. The decision to invest sustainably could not only be perceived as a way to financial return, but as an avenue for personal impact.

For individual investors and people interested in investing, emphasizing the environmental impact of investments might be an important tool to mobilize sustainable investments, already starting at the level of sustainability preferences. Our results also show that environmental information increases the probability of choosing higher percentages of sustainability in the general choice than financial information. So, if in doubt, which information to provide to clients, it might be well-recommended to employ environmental-impact information.

Next to information, also the choice on sustainability preferences is of relevance. While sustainable investments gained prominence and became better known in the recent past, investors and those who want to invest, might still not be aware of such investment options (Brunen & Laubach, 2021; Gutsche & Zwergel, 2016; Wins & Zwergel, 2016). Thus, the EU requires asking investors for preferences regarding ESG-factors and aligned recommendations. At the time of designing this study, two options were likely to be implemented. While the banks preferred a more general choice, the financial authority favored a more granular choice. The goal of our study was to test whether there are differences between the general and granular choice. Our results showed that a more granular choice did not negatively affect the decision to invest sustainably or satisfaction. At the time of writing this paper, it is likely that the

granular choice will be mandatory. Our results thus add to the practical debate and show beforehand, that with a granular choice there might not be a strong negative effect compared to the granular choice.

Given these results, it might be well-recommended to include information on financial as well as environmental impact, and a choice on sustainable preferences in the financial advice. Including both, information and a choice on sustainability preferences might also help to align clients' values and their investment decision. If clients are not asked and informed regarding sustainable investments, they might not be aware of the option to invest sustainably and not demand for this option, especially if they are less literate clients. This lack might also contribute to the emergence of a value-action gap, defined as the incomplete translation of values into actions (Blake, 1999; Haider et al., 2019; Kollmuss & Agyeman, 2002; Momsen & Stoerk, 2014), which is also assumed to be existent in investment decisions (Bauer et al., 2021; Brunen & Laubach, 2021; Diouf et al., 2016; Nilsson, 2008; Paetzold & Busch, 2014; Srivastava & Roy, 2021; Vyvyan et al., 2007; Wins & Zwergel, 2016). Thus, the results of our study are in support of the upcoming EU regulations that come into force in August 2022 (Commission Delegated Regulation (EU) 2021/2616, 2021).

Greenwashing or cheap talk (Bingler et al., 2021), however, might in the long term not be sufficient to promote long-lasting sustainable investments. If environmental impact considerations are part of a future economic ideology, investors might become more aware of non-impactful investments that only are under the guise of being green. Trust is a central determinant of sustainable investments (Gutsche et al., 2020; Gutsche & Zwergel, 2016, 2020; Nilsson, 2008). Lack of trust due to greenwashing and cheap talk might in the end be contra productive for a successful transformation towards a more sustainable and fair economy. Thus, to promote this transition, also policy measures are of necessity. On the one hand strict and clear guidelines for sustainable investment products that make impact of investments transparent and dismantles cheap talk. Also, the results indicate that products that are sustainable by law are preferred. Examples for this can be found in the Austrian Ecolabel or the FNG-Label. Given the global nature of investments, however, also international standards such as the EU Ecolabel and the EU Taxonomy are important. On the other hand, regulations that provide the legal basis for environmental-impact information and an optimal choice on sustainability preferences are welcome.

The following limitations of this study should be considered. First, the investment decisions were made with windfall gains, in contrast to actual investment decisions where money mostly is self-earned. Previous studies indicate that such windfall gains increase readiness to invest sustainably (Hoffmann et al., 2019). While the percentage of sustainable investments might be slightly higher than with self-earned money, the same mechanisms apply for the decisions and the variance in the decisions might be comparable to real-world decisions. For a setting, in which investors' own money is invested, and thus no windfall gain, future studies might find lower sustainable investments on average, however there might be more potential to stimulate sustainable investments. Moreover, the design did not include a financial tradeoff or tradeoff in risk when investing in sustainable funds compared to conventional funds, which additionally might contribute to more sustainable investments. Second, we observe investments in a controlled experimental context. To address and increase external validity, we created an experimental design close to an actual investment decision. Moreover, by employing an incentivized design, we address the need to study actual behavior with incentivized decisions and real money at stake instead of self-reported attitudes (Bauer et al., 2021; Brunen & Laubach, 2021; Siemroth & Hornuf, 2021).

6. Conclusion and policy implications

This paper contributes to literature by investigating how financial-return information, addressing the financial benefits of investing sustainably, and environmental-impact, information addressing perceived effectiveness of impact, as well as the combination of the two affect sustainable investments. Financial and environmental information reflect the two main arguments for sustainable investments of the upcoming EU-regulations the European Green Deal: financial considerations (e.g., avoidance of stranded assets) and environmental impact (e.g., capital flow to sustainable investments). Next to the contribution to the literature, this paper also provides policy-oriented insights in recent EU regulations, that come into effect in August 2022 (Commission Delegated Regulation (EU) 2021/2616, 2021).

The experimental results draw a multi-faceted picture of investment decisions indicate that emphasizing the impact of sustainable investments (“you can promote sustainability and change the economy”) can increase the amount invested in sustainable funds. While also financial information (“you can achieve returns and reduce specific risks”) increased sustainable investments, we find that the combination of both has no additionally positive

effect. Satisfaction remained unaffected by information. A granular choice on sustainability preferences did not negatively affect investment decisions and satisfaction. Funds that are sustainable according to law, e.g., the EU taxonomy are preferred. Overall, we find that women and investors with higher biospheric values and financial literacy are more likely to invest sustainably. In literature, perceived effectiveness is a prominent determinant of environmental behavior and sustainable investments. The current results support this notion and contribute to the debate on the role of information in sustainable investment decisions by showing that environmental information increases sustainable investments.

Policy implications for promoting sustainable investments are manifold. We argue that information provided to clients should also address environmental impact considerations and the financial advice does not suffer from a granular choice on sustainability preferences. We underline the importance of new EU regulations that address information and choice. Sole greenwashing or cheap talk might not be sufficient to evoke long-term perceived effectiveness. Thus, further policy measures should aim at transparent outline of impact of investments. Financial advisors and bank institutes should uptake these regulatory standards. Presenting sustainable products as well-performing or as sustainable according to law, could promote investments. By this, benefits for banks due to increased willingness to invest sustainably and reducing the risk of sunk assets, also benefits for a fair and just economy can be fostered. A recent example for sunk assets is Fund A of our experiment, which was suspended for trading and redemption due to the Russian-Ukrainian war, which potentially results in a loss for the investors.

Further research should investigate the role of financial and environmental information in stock market participation. Not only the decision, whether to invest sustainably or conventionally but also the decision of investing versus saving money on a regular bank account should be focused. Given the need for more sustainable investments and issues such as the high inflation and old-age poverty, research should delve into the role of information as measure to increase stock market participation and, at the same time, sustainable investments. Also, different levels of environmental impact could be tested, e.g., whether low or high impact differently affect sustainable investments. Finally, future research should investigate potential measures in field experiments to guarantee external validity, promote practical implementation and successfully foster the transition towards sustainable investments.

References

- Apostolakis, G., Van Dijk, G., Blomme, R. J., Kraanen, F., & Papadopoulos, A. P. (2018). Predicting pension beneficiaries' behaviour when offered a socially responsible and impact investment portfolio. *Journal of Sustainable Finance and Investment*, 8(3), 213-241. doi:10.1080/20430795.2018.1429148
- Barr, S. (2006). Environmental Action in the Home: Investigating the 'Value-Action' Gap. *Geography*, 91(1), 43-54. doi:10.1080/00167487.2006.12094149
- Barreda-Tarrazona, I., Matallín-Sáez, J. C., & Balaguer-Franch, M. R. (2011). Measuring investors' socially responsible preferences in mutual funds. *Journal of Business Ethics*, 103(2), 305-330. doi:10.1007/s10551-011-0868-z
- Bassen, A., Gödker, K., Lüdeke-Freund, F., & Oll, J. (2019). Climate information in retail investors' decision-making: Evidence from a choice experiment. *Organization and Environment*, 32(1), 62-82. doi:10.1177/1086026618771669
- Bauer, R., Ruof, T., & Smeets, P. (2021). Get real! Individuals prefer more sustainable investments. *The Review of Financial Studies*, 34(8), 3976-4043. doi:https://doi.org/10.1093/rfs/hhab037
- Bauer, R., & Smeets, P. (2015). Social identification and investment decisions. *Journal of Economic Behavior and Organization*, 117, 121-134. doi:10.1016/j.jebo.2015.06.006
- Benartzi, S., & Thaler, R. H. (2001). Naive Diversification Strategies in Defined Contribution Saving Plans. *American Economic Review*, 91(1), 79-98. https://doi.org/10.1257/aer.91.1.79
- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: a practical and powerful approach to multiple testing. *Journal of the Royal statistical society: series B (Methodological)*, 57(1), 289-300.
- Bingler, J. A., Kraus, M., Leippold, M., & Webersinke, N. (2021). Cheap talk and cherry-picking: What climatebert has to say on corporate climate risk disclosures. *Finance Research Letters*, 102776.
- Blake, J. (1999). Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience. *Local environment*, 4(3), 257-278.
- Bolderdijk, J. W., Steg, L., Geller, E. S., Lehman, P. K., & Postmes, T. (2012). Comparing the effectiveness of monetary versus moral motives in environmental campaigning. *Nature Climate Change*, 3(4), 413-416. doi:10.1038/nclimate1767

- Bollen, N. P. B. (2007). Mutual fund attributes and investor behavior. *Journal of Financial and Quantitative Analysis*, 42(3), 683-708. doi:10.1017/s0022109000004142
- Brunen, A.-C., & Laubach, O. (2021). Do sustainability-conscious individuals prefer socially responsible investments? A study among the users of robo advice. *SSRN Electronic Journal*. doi:10.2139/ssrn.3778610
- Bucher-Koenen, T., Alessie, R., Lusardi, A., & van Rooij, M. (2021a). Fearless Woman: Financial Literacy and Stock Market Participation (No. w28723). National Bureau of Economic Research. <https://doi.org/10.3386/w28723>
- Bucher-Koenen, T., Hackethal, A., Koenen, J., & Laudenbach, C. (2021b). Gender Differences in Financial Advice (2021). SAFE Working Paper No. 309, <http://dx.doi.org/10.2139/ssrn.2572961>
- Bucher-Koenen, T., & Ziegelmeyer, M. (2014). Once Burned, Twice Shy? Financial Literacy and Wealth Losses during the Financial Crisis*. *Review of Finance*, 18(6), 2215-2246. doi:10.1093/rof/rft052
- Cheah, E. T., Jamali, D., Johnson, J. E. V., & Sung, M. C. (2011). Drivers of corporate social responsibility attitudes: The demography of socially responsible investors. *British Journal of Management*, 22(2), 305-323. doi:10.1111/j.1467-8551.2011.00744.x
- Chekima, B., Igau, A., Wafa, S. A. W. S. K., & Chekima, K. (2017). Narrowing the gap: Factors driving organic food consumption. *Journal of Cleaner Production*, 166, 1438-1447.
- Commission Delegated Regulation (EU) 2021/2616. (2021). *Commission Delegated Regulation (EU) 2021/2616 amending Delegated Regulation (EU) 2017/565 as regards the integration of sustainability factors, risks and preferences into certain organisational requirements and operating conditions for investment firms*. Brussels: European Commission
- De Amicis, L., Binenti, S., Maciel Cardoso, F., Gracia-Lázaro, C., Sánchez, Á., & Moreno, Y. (2020). Understanding drivers when investing for impact: An experimental study. *Palgrave Communications*, 6(1), 1-9. doi:10.1057/s41599-020-0447-y
- De Groot, J. I. M., & Steg, L. (2007). Value orientations and environmental beliefs in five countries: Validity of an instrument to measure egoistic, altruistic and biospheric value orientations. *Journal of cross-cultural psychology*, 38(3), 318-332.
- De Groot, J. I. M., & Steg, L. (2008). Value orientations to explain beliefs related to environmental significant behavior: How to measure egoistic, altruistic, and biospheric value orientations. *Environment and behavior*, 40(3), 330-354.

- Diouf, D., Hebb, T., & Touré, E. H. (2016). Exploring factors that influence social retail investors' decisions: Evidence from Desjardins fund. *Journal of Business Ethics*, 134(1), 45-67.
- Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association*, 9(3), 522-550. doi:10.1111/j.1542-4774.2011.01015.x
- Dorfleitner, G., & Nguyen, M. (2016). Which proportion of SR investments is enough? A survey-based approach. *Business Research*, 9(1), 1-25. doi:10.1007/s40685-016-0030-y
- Døskeland, T., & Pedersen, L. J. T. (2016). Investing with brain or heart? A field experiment on responsible investment. *Management Science*, 62(6), 1632-1644. doi:10.1287/mnsc.2015.2208
- Døskeland, T., & Pedersen, L. J. T. (2021). Does wealth matter for responsible investment? Experimental evidence on the weighing of financial and moral arguments. *Business and Society*, 60(3), 650-683. doi:10.1177/0007650319826231
- Escrig-Olmedo, E., Muñoz-Torres, M. J., & Fernández-Izquierdo, M. Á. (2013). Sustainable Development and the Financial System: Society's Perceptions About Socially Responsible Investing. *Business Strategy and the Environment*, 22(6), 410-428. doi:10.1002/bse.1755
- European Commission. (2020). Financing the green transition: The European Green Deal Investment Plan and Just Transition Mechanism. [Press release]
- Eurosif. (2018). *European SRI Study*. Retrieved from <https://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf>
- Geiger, S. M., Fischer, D., & Schrader, U. (2017). *Technischer Bericht zum quantitativen Studiendesign von BiNKA*. Retrieved from http://achtsamkeit-und-konsum.de/wp-content/uploads/2017/06/2017_Geiger_TechnischerReport.pdf
- Glac, K. (2009). Understanding socially responsible investing: The effect of decision frames and trade-off options. *Journal of Business Ethics*, 87, 41-55. doi:10.1007/s10551-008-9800-6
- Global Sustainable Investment Alliance. (2020). *Global sustainable investment review 2020*. Retrieved from <http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf>

- Gutsche, G., Nakai, M., & Arimura, T. H. (2021). Revisiting the determinants of individual sustainable investment—The case of Japan. *Journal of Behavioral and Experimental Finance*, *30*, 100497-100497. doi:10.1016/j.jbef.2021.100497
- Gutsche, G., Wetzel, H., & Ziegler, A. (2020). Determinants of individual sustainable investment behavior: A framed field experiment. *MAGKS Joint Discussion Paper Series in Economics*, No. 33-2020.
- Gutsche, G., & Ziegler, A. (2019). Which private investors are willing to pay for sustainable investments? Empirical evidence from stated choice experiments. *Journal of Banking and Finance*, *102*, 193-214. doi:10.1016/j.jbankfin.2019.03.007
- Gutsche, G., & Zwergel, B. (2016.). *Information barriers and individual participation in the sustainable and responsible investment market— Can sustainability and transparency labels help?* Joint Discussion Paper Series in Economics No. 24-2016
- Gutsche, G., & Zwergel, B. (2020). Investment barriers and labeling schemes for socially responsible investments. *Schmalenbach Business Review*, *72*(2), 111-157. doi:10.1007/s41464-020-00085-z
- Haider, S. W., Zhuang, G., & Ali, S. (2019). Identifying and bridging the attitude-behavior gap in sustainable transportation adoption. *Journal of Ambient Intelligence and Humanized Computing*, *10*(9), 3723-3738. doi:10.1007/s12652-019-01405-z
- Hanss, D., & Böhm, G. (2013). Promoting purchases of sustainable groceries: An intervention study. *Journal of Environmental Psychology*, *33*, 53-67. doi:10.1016/j.jenvp.2012.10.002
- Hartzmark, S. M., & Sussman, A. B. (2019). Do investors value sustainability? A natural experiment examining ranking and fund flows. *Journal of Finance*, *74*(6), 2789-2837. doi:10.1111/jofi.12841
- Heeb, F., Kölbel, J. F., Paetzold, F., & Zeisberger, S. (2021). Are Investors Sensitive to Impact? *SSRN Working Paper No 3765659*.
- Hoffmann, R., Cam, M. A., & Camilleri, A. R. (2019). Deciding to invest responsibly: Choice architecture and demographics in an incentivised retirement savings experiment. *Journal of Behavioral and Experimental Economics*, *80*, 219-230. doi:10.1016/j.socec.2019.04.005
- Holmen, M., Holzmeister, F., Kirchler, M., Stefan, M., & Wengström, E. (2021). Economic preferences and personality traits among finance professionals and the general population. *Available at SSRN*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3779944

- Hong, H., & Kostovetsky, L. (2012). Red and blue investing: Values and finance. *Journal of Financial economics*, 103(1), 1-19. doi:10.1016/j.jfineco.2011.01.006
- IPCC. (2018). *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]*. Retrieved from https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_Low_Res.pdf
- Johnson, E. J., Shu, S. B., Dellaert, B. G. C., Fox, C., Goldstein, D. G., Häubl, G., Larrick, R. P., Payne, J. W., Peters, E., Schkade, D., Wansink, B., & Weber, E. U. (2012). Beyond nudges: Tools of a choice architecture. *Marketing Letters*, 23(2), 487–504. <https://doi.org/10.1007/s11002-012-9186-1>
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental education research*, 8(3), 239-260.
- Lagerkvist, C. J., Edenbrandt, A. K., Tibbelin, I., & Wahlstedt, Y. (2020). Preferences for sustainable and responsible equity funds: A choice experiment with Swedish private investors. *Journal of Behavioral and Experimental Finance*, 28. doi:10.1016/j.jbef.2020.100406
- Lusardi, A., & Mitchell, O. S. (2008). Planning and financial literacy: How do women fare? *American Economic Review*, 98(2), 413–417.
- Markowitz, L., Cobb, D., & Hedley, M. (2011). Framing ambiguity: insider/outside and the successful legitimation project of the socially responsible mutual fund industry. *Organization*, 19(1), 3-23. doi:10.1177/1350508411398055
- Momsen, K., & Stoerk, T. (2014). From intention to action: Can nudges help consumers to choose renewable energy? *Energy Policy*, 74, 376-382.
- Nilsson, J. (2008). Investment with a conscience: Examining the impact of pro-social attitudes and perceived financial performance on socially responsible investment behavior. *Journal of Business Ethics*, 83(2), 307-325. doi:10.1007/s10551-007-9621-z

- Nilsson, J. (2009). Segmenting socially responsible mutual fund investors: The influence of financial return and social responsibility. *International Journal of Bank Marketing*, 27(1), 5-31. doi:10.1108/02652320910928218
- Nilsson, J., Jansson, J., Isberg, S., & Nordvall, A.-C. (2014). Customer satisfaction with socially responsible investing initiatives: The influence of perceived financial and non-financial quality. *Journal of Financial Services Marketing*, 19(4), 265-276. doi:10.1057/fsm.2014.24
- Paetzold, F., & Busch, T. (2014). Unleashing the powerful few: Sustainable investing behaviour of wealthy private investors. *Organization and Environment*, 27(4), 347-367. doi:10.1177/1086026614555991
- Paetzold, F., Busch, T., & Chesney, M. (2015). More than money: Exploring the role of investment advisors for sustainable investing. *Annals in Social Responsibility*.
- Palacios-González, M. M., & Chamorro-Mera, A. (2018). Analysis of the predictive variables of the intention to invest in a socially responsible manner. *Journal of Cleaner Production*, 196, 469-477. doi:10.1016/j.jclepro.2018.06.066
- Peifer, J. L. (2014). Fund Loyalty Among Socially Responsible Investors: The Importance of the Economic and Ethical Domains. *Journal of Business Ethics*, 121(4), 635-649. doi:10.1007/s10551-013-1746-7
- Riedl, A., & Smeets, P. (2017). Why do investors hold socially responsible mutual funds? *The Journal of Finance*, 72(6), 2505-2550. doi:10.1111/jofi.12547
- Scheibehenne, B., Greifeneder, R., & Todd, P. M. (2010). Can There Ever Be Too Many Options? A Meta-Analytic Review of Choice Overload. *Journal of Consumer Research*, 37(3), 409-425. https://doi.org/10.1086/651235
- Schwartz, D., Bruine de Bruin, W., Fischhoff, B., & Lave, L. (2015). Advertising energy saving programs: The potential environmental cost of emphasizing monetary savings. *J Exp Psychol Appl*, 21(2), 158-166. doi:10.1037/xap0000042
- Seiler, V., Rudolf, M., & Krume, T. (2013). The influence of socio-demographic variables on customer satisfaction and loyalty in the private banking industry. *International Journal of Bank Marketing*, 31(4), 235-258. https://doi.org/10.1108/IJBM-10-2012-0101
- Siemroth, C., & Hornuf, L. (2021). Do retail investors value environmental impact? A lab-in-the-field experiment with crowdfunders. *CESifo Working Paper No. 9197*. doi:http://dx.doi.org/10.2139/ssrn.3892621

- Srivastava, S., & Roy, S. (2021). Impact of Equity Investment Intention Towards Behaviour: An Empirical Analysis. *Vision: The Journal of Business Perspective*. doi:10.1177/09722629211004374
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (Vol. 5). Pearson, Boston, MA.
- Van Buuren, S., & Groothuis-Oudshoorn, K. (2011). mice: Multivariate imputation by chained equations in R. *Journal of statistical software*, 45, 1-67.
- van Valkengoed, A. M., & Steg, L. (2019). Meta-analyses of factors motivating climate change adaptation behaviour. *Nature Climate Change*, 9(2), 158-163. doi:10.1038/s41558-018-0371-y
- Vyvyan, V., Brimble, M., & Burling, J. (2007). Socially responsible investing: Green attitudes and grey choices. *Corporate Governance: An International Review*, 15(2), 370-381. doi:10.1111/j.1467-8683.2007.00567.x
- Wins, A., & Zwergel, B. (2016). Comparing those who do, might and will not invest in sustainable funds: A survey among German retail fund investors. *Business Research*, 9(1), 51-99. doi:10.1007/s40685-016-0031-x
- Yoon, C. (2010). Antecedents of customer satisfaction with online banking in China: The effects of experience. *Computers in Human Behavior*, 26(6), 1296–1304. <https://doi.org/10.1016/j.chb.2010.04.001>

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Appendix A. Sample characteristics and descriptive statistics

We provide characteristics of both survey waves and the full sample in Table A.1. The representative sample is equally balanced in terms of gender while the investor sample mirrors the overrepresentation of males among investors (Ebert, Grote, & Christine, 2019; Holmen, Holzmeister, Kirchler, Stefan, & Wengström, 2021). No significant difference concerning age were detected. We find that within the retail investor sample education, household income, experience in investing and financial literacy are higher compared to the representative sample. Compared to other studies (Gutsche et al., 2020), financial literacy of the retail investor is slightly higher, while literacy was lower in the representative sample. This finding and the observed higher risk preference of the retail investor sample are in line with previous research which compared finance professionals with the general population (Holmen et al., 2021). Further, we observe that biospheric as well as altruistic values higher in the retail investor sample.

Table A.1. Descriptive statistics of sample characteristics

	Retail investor	Population	Full sample
	$M(SD)$, f (%)	$M(SD)$, f (%)	$M(SD)$, f (%)
Gender			
Female	261 (30.0%)	711 (51.4%)	972 (43.1%)
Male	606 (69.6%)	672 (48.6%)	1278 (56.7%)
Non-binary	4 (0.5%)	-	4 (0.2%)
Age (in years)	47.69 (13.83)	48.52 (16.50)	48.20 (15.52)
Income ^a			
Less than 1000 €	11 (1.26%)	62 (4.49%)	73 (3.24%)
1001 € to 2000 €	67 (7.68%)	309 (22.36%)	376 (16.68%)
2001 € to 3000 €	167 (19.15%)	321 (23.22%)	488 (21.65%)
3001 € to 4000 €	189 (21.67%)	298 (21.56%)	487 (21.61%)
4001 € to 5000 €	181 (20.76%)	214 (15.48%)	395 (17.52%)
5001 € to 6000 €	117 (13.42%)	93 (6.73%)	209 (9.27%)
6001 € to 7000 €	57 (6.54%)	37 (2.68%)	94 (4.17%)
7001 € to 8000 €	22 (2.52%)	20 (1.45%)	42 (1.86%)
8001 € or more	61 (7.00%)	28 (2.03%)	90 (3.99%)
Household: children ^a	0.47 (0.82)	0.40 (0.78)	0.42 (0.80)
Household income ^a	2.29 (0.99)	1.92 (0.86)	2.06 (0.93)
Highest educational level			
Prim/Sec Deg.	12 (1.38%)	39 (2.82%)	51 (2.26%)
Vocational Train.	101 (11.60%)	289 (20.90%)	390 (17.30%)
Sec. Degr. (no A-levels)	72 (8.27%)	173 (12.51%)	245 (10.87%)
High School (A-levels)	287 (32.95%)	456 (32.97%)	743 (32.96%)
College/foreperson	42 (4.82%)	43 (3.11%)	85 (3.77%)
University deg.	337 (38.69%)	371 (26.83%)	708 (31.41%)
Other degree	20 (2.29%)	12 (0.87%)	32 (1.42%)
Experience			
Not invested	53 (6.08%)	722 (52.21%)	775 (34.3%)
Less than 1 year	34 (3.90%)	59 (4.27%)	93 (4.1%)
1 – 2 years	75 (8.61%)	98 (7.09%)	173 (7.7%)
3 – 4 years	87 (9.99%)	93 (6.72%)	180 (8.0%)
5 – 6 years	67 (7.69%)	91 (6.58%)	158 (7.0%)
7 – 8 years	56 (6.43%)	47 (3.40%)	103 (4.6%)
9 – 10 years	51 (5.86%)	50 (3.62%)	101 (4.5%)
More than 11 years	448 (51.44%)	223 (16.12%)	671 (29.8%)
Financial Literacy	0.90 (0.20)	0.74 (0.31)	0.80 (0.28)
Biospheric Values	6.21 (0.81)	5.87 (1.18)	6.00 (1.07)
Altruistic Values	6.04 (0.80)	5.78 (1.16)	5.88 (1.04)
Risk preference	6.51(2.20)	4.85 (2.33)	5.49 (2.42)

Note. f = frequency, % = percent of the full sample ($N = 2254$), M = mean, SD = standard deviation. For categorical variables (gender, income, education, experience), frequencies, and percentage of the sample (in brackets) are displayed. For the other variables, the mean and standard deviation is presented.

^a Statistics on income, number of children in the household and the resulting household income are calculated over the 10 imputed datasets, as described in Section 3.2.2. Individual differences.

Table A.2. Summary statistics by survey wave

Variable	Retail investor	Population	Full sample
	<i>M(SD)</i> , f (%)	<i>M(SD)</i> , f (%)	<i>M(SD)</i> , f (%)
Sustainable investments (%)	0.69 (0.26)	0.64 (0.29)	0.66 (0.28)
Conventional Fund A (Euro)	68.58 (88.10)	93.29 (100.17)	83.74 (96.42)
Conventional Fund B (Euro)	119.52 (106.13)	123.36 (109.05)	121.87 (107.92)
Fund C (Euro)	181.98 (127.35)	173.84 (133.44)	176.99 (131.16)
Fund D (Euro)	229.93 (138.30)	209.51 (151.27)	217.40 (146.70)
Satisfaction with info	5.83 (0.96)	5.45 (1.21)	5.60 (1.13)
Satisfaction with choice	5.86 (1.02)	5.50 (1.22)	5.64 (1.16)
General choice on sust. pref.			
0% - no sustainable products	27 (3.10%)	60 (4.34%)	87 (3.86%)
Up to 25%	108 (12.40%)	264 (19.09%)	372 (16.50%)
Up to 50%	244 (28.01%)	405 (29.28%)	649 (28.79%)
Up to 75%	264 (30.31%)	289 (20.90%)	553 (24.53%)
100% - only sustainable products	228 (26.18%)	365 (26.39%)	593 (26.31%)
Granular choice on sust. pref. ^a			
Avoid negative impact	124 (30.02%)	227 (34.19%)	351 (32.59%)
Sustainable according to law	195 (47.22%)	332 (50.00%)	527 (48.93%)
Both	94 (22.76%)	105 (15.81%)	199 (18.48%)
Acceptance of recommendation	239 (26.41%)	547 (39.55%)	776 (34.42%)
Deviation from recommendation	15.81 (95.99)	14.48 (117.11)	15.00 (109.41)
Stability of investment	0.33 (0.47)	0.34 (0.47)	0.34 (0.47)

Note. f = frequency, % = percent of the retail investor sample (N=871), the population sample (N=1383), and the full sample (N = 2254), *M* = mean, *SD* = standard deviation. For categorical variables (general choice, granular choice), frequencies, and percentage of the sample (in brackets) are displayed. For the other variables, the mean and standard deviation is presented.

^a Only participants in the respective treatment and who chose 25% or more in the general choice were shown the granular choice. Thus, the reported sample size of the granular choice is reduced to N = 1077.

^b Stability of investment decisions equals is binary: the investment is revised on one or both hypothetical scenarios (stability = 0); the investment is not revised (stability = 1).

Appendix B. Full models for information and sustainable investments

Table B.1. OLS-models: prediction of sustainable investments by information.

	(1)	(2)	(3)	(4)
Financial	0.055*** (0.017)	0.055** (0.017)	0.049** (0.016)	0.041** (0.015)
Environmental	0.082*** (0.016)	0.082*** (0.016)	0.071*** (0.016)	0.063*** (0.015)
Financial * environmental	-0.064** (0.023)	-0.064** (0.023)	-0.058** (0.022)	-0.045* (0.022)
Granular choice		0.001 (0.012)	0.003 (0.011)	0.005 (0.011)
Biospheric values			0.071*** (0.009)	0.063*** (0.009)
Altruistic values			0.003 (0.009)	-0.014 (0.009)
Household income			0.018** (0.006)	0.024** (0.007)
Financial literacy			0.090*** (0.021)	0.074*** (0.022)
Age				-0.001 (0.000)
Male				-0.038** (0.012)
Non-binary				-0.323* (0.129)
Education				0.017*** (0.004)
Children				0.012 ⁺ (0.007)
Experience				0.003 (0.002)
Risk preference				-0.011*** (0.003)
Trust in ESG				0.043*** (0.005)
Relevance incentive				0.003 (0.003)
E-mail address				-0.001 (0.017)

	(1)	(2)	(3)	(4)
Attention check				-0.032** (0.012)
Survey wave				-0.001 (0.013)
Constant	0.605*** (0.012)	0.604*** (0.013)	0.062. (0.037)	0.001 (0.058)
N	2254	2254	2254	2254
R2 adjusted	0.012	0.011	0.116	0.172
F	9.797	7.349	37.795	24.338
p	0.000	0.000	0.000	0.000

Note. ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Description of the dummy variables: email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), survey wave dummy (1 = retail investor sample, 2 = population sample).

Appendix C. Customer satisfaction with the information

Table C.1 OLS-models: prediction of satisfaction with information by information.

	(1)	(2)	(3)	(4)
Financial	0.088 (0.068)	0.088 (0.068)	0.056 (0.058)	0.008 (0.055)
Environmental	0.140* (0.067)	0.140* (0.067)	0.099 ⁺ (0.058)	0.047 (0.055)
Fin. * env.	-0.089 (0.095)	-0.089 (0.095)	-0.065 (0.082)	0.009 (0.078)
Granular choice		0.010 (0.048)	0.018 (0.041)	0.005 (0.039)
Biospheric values			0.223*** (0.032)	0.156*** (0.031)
Altruistic values			0.208*** (0.033)	0.129*** (0.031)
Household income			0.075** (0.023)	0.058* (0.024)
Financial literacy			0.947*** (0.077)	0.697*** (0.079)
Age				0.002 (0.001)
Male				-0.102*

	(1)	(2)	(3)	(4)
				(0.043)
Non-binary				-0.192
				(0.465)
Education				0.045***
				(0.014)
Children				-0.057*
				(0.027)
Experience				0.004
				(0.009)
Risk preference				0.040***
				(0.009)
Trust in ESG				0.229***
				(0.017)
Relevance incentive				0.036**
				(0.012)
E-mail address				0.243***
				(0.062)
Attention check				-0.209***
				(0.043)
Survey wave				0.021
				(0.048)
Constant	5.507***	5.502***	2.063***	1.187***
	(0.048)	(0.053)	(0.138)	(0.209)
N	2254	2254	2254	2254
R2	0.003	0.003	0.261	0.353
R2 adjusted	0.001	0.001	0.258	0.348
F	1.904	1.437	99.153	60.996
p	0.127	0.219	0.000	0.000

Note. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Description of the dummy variables: email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), survey wave dummy (1 = retail investor sample, 2 = population sample).

Appendix D. Full models for each survey wave

We show the full models as pre-registered as robustness checks to test whether the results reported in Section 4.2 and 4.3 are robust. In **Error! Reference source not found.**, Models 1 and 2 are the full model for the full sample and sustainable investments. Models 3 and 4 include the retail investor sample with application of the exclusion criteria of study 1. Models 5 and 6 show the effects for the full retail investor sample without exclusion. Models 7 and 8 include the retail investor sample according to the pre-registration of study 2.

Table D.1. OLS-models: prediction of sustainable investments by information according to the pre-registrations.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financial	0.055*** (0.017)	0.047** (0.016)	0.034 (0.029)	0.036 (0.028)	0.037 (0.025)	0.036 (0.024)	0.067** (0.022)	0.056** (0.021)
Environm	0.082*** (0.016)	0.069*** (0.015)	0.057* (0.029)	0.050. (0.028)	0.052* (0.024)	0.043 ⁺ (0.023)	0.101*** (0.022)	0.085*** (0.020)
Fin.* env.	-0.064** (0.023)	-0.058** (0.022)	-0.048 (0.041)	-0.058 (0.039)	-0.037 (0.035)	-0.041 (0.033)	-0.082** (0.031)	-0.071* (0.029)
Granular		0.006 (0.011)		-0.012 (0.020)		-0.005 (0.017)		0.013 (0.014)
Biospheri		0.070*** (0.009)		0.088*** (0.017)		0.073*** (0.014)		0.069*** (0.011)
Altruistic		-0.003 (0.009)		-0.019 (0.017)		-0.002 (0.015)		-0.005 (0.011)
Househol		0.021** (0.007)		-0.010 (0.012)		-0.001 (0.010)		0.041*** (0.011)
Financial		0.082*** (0.022)		0.041 (0.055)		0.048 (0.045)		0.093*** (0.026)
Age		-0.000 (0.000)		0.001 (0.001)		0.000 (0.001)		-0.001 (0.001)
Male		-0.041*** (0.012)		-0.053* (0.024)		-0.066*** (0.020)		-0.031* (0.015)
N.-binary		-0.322* (0.132)		-0.356** (0.129)		-0.351** (0.128)		
Education		0.015*** (0.004)		0.009 (0.007)		0.011 ⁺ (0.006)		0.017*** (0.005)
Children		0.014 ⁺ (0.008)		0.011 (0.013)		0.007 (0.011)		0.017 ⁺ (0.010)
Experienc		0.003		0.006		0.005		0.001

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		(0.002)		(0.006)		(0.004)		(0.003)
Risk pref.		-0.010***		-0.012*		-0.011**		-0.008*
		(0.003)		(0.005)		(0.004)		(0.003)
Rel. Inc.		0.005		0.006		0.005		0.005
		(0.003)		(0.006)		(0.005)		(0.005)
Attention		-0.033**				-0.035 ⁺		-0.036*
		(0.012)				(0.020)		(0.016)
E-Mail		0.016		0.024		0.010		0.013
		(0.018)		(0.037)		(0.031)		(0.021)
Survey		-0.007						
		(0.014)						
Constant	0.605***	0.096	0.662***	0.169	0.651***	0.181	0.575***	0.043
	(0.012)	(0.059)	(0.021)	(0.132)	(0.017)	(0.097)	(0.016)	(0.064)
N	2254	2254	620	620	871	871	1383	1383
R2	0.013	0.147	0.007	0.117	0.007	0.118	0.017	0.164
R2 Adj.	0.012	0.139	0.002	0.092	0.004	0.100	0.015	0.154
F	9.797	20.202	1.403	4.695	2.048	6.357	8.173	15.768
p	0.000	0.000	0.241	0.000	0.106	0.000	0.000	0.000

Note. ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Description of the dummy variables: email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), survey wave dummy (1 = retail investor sample, 2 = population sample).

In Table D.2., Models 1 and 2 are the full model for the full sample and customer satisfaction with the information. Models 3 and 4 include the retail investor sample with application of the exclusion criteria of study 1. Models 5 and 6 show the effects for the full retail investor sample without exclusion. Models 7 and 8 include the retail investor sample according to the pre-registration of study 2.

Table D.2. OLS-models: prediction of satisfaction by information according to the pre-registrations.

	(2a)	(2b)	(2c)	(2d)	(2e)	(2f)	(2g)	(2h)
Financial	0.088 (0.068)	0.043 (0.057)	0.104 (0.105)	0.092 (0.101)	0.185* (0.092)	0.135 (0.088)	0.034 (0.092)	-0.026 (0.075)
Environm	0.140* (0.067)	0.076 (0.057)	0.204 ⁺ (0.105)	0.188 ⁺ (0.103)	0.292** (0.091)	0.248** (0.087)	0.045 (0.092)	-0.040 (0.075)
Fin.*env.	-0.089 (0.095)	-0.058 (0.081)	-0.108 (0.147)	-0.130 (0.142)	-0.192 (0.130)	-0.162 (0.123)	-0.030 (0.130)	0.017 (0.106)
Granular		0.013 (0.040)		0.027 (0.072)		0.058 (0.062)		-0.023 (0.053)
Biospheri		0.189** (0.032)		0.082 (0.064)		0.109* (0.052)		0.222** (0.040)
Altruistic		0.187** (0.032)		0.195** (0.063)		0.195** (0.054)		0.171** (0.041)
Househol		0.047 ⁺ (0.025)		0.021 (0.042)		0.014 (0.035)		0.076* (0.035)
Financial		0.742** (0.082)		0.361. (0.202)		0.431** (0.166)		0.786** (0.096)
Age		0.003. (0.001)		0.003 (0.003)		0.005. (0.003)		0.001 (0.002)
Male		-0.118** (0.044)		-0.072 (0.087)		-0.083 (0.073)		-0.147** (0.056)
N.-binary		-0.191 (0.484)		-0.530 (0.473)		-0.484 (0.474)		
Education		0.039** (0.014)		0.045 ⁺ (0.026)		0.036 (0.022)		0.039* (0.018)
Children		-0.048. (0.028)		-0.061 (0.049)		-0.050 (0.041)		-0.036 (0.037)
Experienc		0.005 (0.009)		-0.021 (0.022)		-0.017 (0.016)		0.010 (0.011)
Risk. Pre.		0.049** (0.010)		0.044* (0.019)		0.049** (0.015)		0.051** (0.013)
Rel. inc.		0.046**		0.070**		0.063**		0.029 ⁺

	(2a)	(2b)	(2c)	(2d)	(2e)	(2f)	(2g)	(2h)
Attention		(0.013) -0.215***		(0.021)		(0.018) -0.092		(0.018) -0.281***
E-Mail		(0.045) 0.332**		0.001		(0.074) 0.110		(0.057) 0.398**
Survey		(0.064) -0.011		(0.134)		(0.116)		(0.078)
Constant	5.507**	1.691**	5.738**	2.862**	5.638**	2.442**	5.423**	1.697**
	(0.048)	(0.215)	(0.075)	(0.484)	(0.064)	(0.359)	(0.065)	(0.231)
N	2254	2254	620	620	871	871	1383	1383
R2	0.003	0.298	0.008	0.105	0.015	0.137	0.000	0.353
R2 Adj.	0.001	0.292	0.003	0.080	0.012	0.119		0.345
F	1.904	49.837	1.701	4.153	4.476	7.497	0.115	43.853
p	0.127	0.000	0.166	0.000	0.004	0.000	0.951	0.000

Note. ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Description of the dummy variables: email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), survey wave dummy (1 = retail investor sample, 2 = population sample).

Appendix E. The effect of choice on sustainable investments and satisfaction

We regress sustainable investments on the granular choice with general choice as reference point (Table E.1). In model 1 only the mode of choice is included, while in model 2 the information, the individual differences and the control variables are added. In models 3 and 4 we conduct the same analyses with satisfaction with the choice as dependent variable. Models 1 and 2 are not significant ($p > 0.36$), while 3 and 4 are highly significant ($p < 0.001$). The results of all Models indicate no significant relationship of the mode of choice with sustainable investments or satisfaction with the choice.

Table E.1 OLS-models: prediction of sustainable investments (1 & 2) and satisfaction with information (3 & 4) by mode of choice

	Sustainable Investments		Satisfaction with choice	
	(1)	(2)	(3)	(4)
Granular choice	0.002 (0.012)	0.005 (0.011)	-0.044 (0.049)	-0.053 (0.040)
Financial		0.041** (0.015)		0.058 (0.057)
Environmental		0.063*** (0.015)		0.028 (0.056)
Fin. * env.		-0.045* (0.022)		0.044 (0.080)
Biospheric values		0.063*** (0.009)		0.149*** (0.031)
Altruistic values		-0.014 (0.009)		0.127*** (0.032)
Household		0.024** (0.007)		0.058* (0.025)
Financial literacy		0.074*** (0.022)		0.743*** (0.081)
Age		-0.001 (0.000)		0.001 (0.001)
Male		-0.038** (0.012)		-0.050 (0.044)
Non-binary		-0.323* (0.129)		-0.188 (0.477)
Education		0.017***		0.033*

	Sustainable Investments		Satisfaction with choice	
	(1)	(2)	(3)	(4)
		(0.004)		(0.014)
Children		0.012 ⁺		-0.040
		(0.007)		(0.027)
Experience		0.003		0.017 ⁺
		(0.002)		(0.009)
Risk preference		-0.011***		0.038***
		(0.003)		(0.010)
Trust in ESG		0.043***		0.259***
		(0.005)		(0.017)
Relevance		0.003		0.025*
		(0.003)		(0.013)
E-mail address		-0.001		0.260***
		(0.017)		(0.064)
Attention check		-0.032**		-0.178***
		(0.012)		(0.044)
Sample		-0.001		0.096 ⁺
		(0.013)		(0.049)
Constant	0.656***	0.001	5.663***	1.027***
	(0.008)	(0.058)	(0.035)	(0.215)
N	2254	2254	2254	2254
R2	0.000	0.179	0.000	0.353
R2 Adj.		0.172		0.347
F	0.032	24.338	95.311	60.907
p	0.858	0.000	0.364	0.000

Note. ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Description of the dummy variables: email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), survey wave dummy (1 = retail investor sample, 2 = population sample).

Appendix F. Treatment heterogeneity

Treatment heterogeneity among participants concerning the effect of the financial as well as environmental information is examined. Previous literature is on heterogeneity due to higher income (Døskeland & Pedersen, 2021) is extended by investigating heterogeneity of information and biospheric as well as altruistic values, and financial literacy. By this, we can also show which sub-group particularly increases investments, which also allows to support consensus creation.

Given these findings, we hypothesize that individual characteristics (values, household income, and financial literacy) should increase sustainable investments. Other experimental studies also indicate heterogeneity of information with income, financial information increased sustainable particularly among wealthy investors (Døskeland & Pedersen, 2021). Given the relevance of values and financial literacy, we also test for heterogenous treatment effects related to these characteristics. Thus, we pose the following hypothesis:

H4: There is heterogeneity in the treatment effect and general heterogeneity in sustainable investments.

To test whether there is heterogeneity in the effects of the financial and environmental-impact information depending on individual differences (values, household income and financial literacy), further OLS regressions are conducted (Table F.1.). Each of the variables (household income, biospheric and altruistic values and financial literacy) is split into two groups by applying a median split. In contrast to our expectations, only one interaction effect (financial * environmental * altruistic values) holds multiple hypothesis testing correction.

Table F.1. OLS-models: Prediction of sustainable investments by interaction of information and individual characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fin.	0.068** (0.023)	0.058** (0.022)	0.110*** (0.026)	0.082*** (0.024)	0.032 (0.025)	0.007 (0.024)	0.096*** (0.026)	0.078** (0.024)
Env.	0.067** (0.023)	0.060** (0.022)	0.115*** (0.026)	0.088*** (0.025)	0.072** (0.025)	0.052* (0.023)	0.113*** (0.025)	0.087*** (0.023)
Fin. * env.	-0.073* (0.033)	-0.063* (0.032)	-0.150*** (0.037)	-0.119*** (0.035)	-0.037 (0.037)	-0.026 (0.034)	-0.116** (0.036)	-0.087** (0.033)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BV	0.173*** (0.022)	0.116*** (0.023)		0.107*** (0.012)		0.107*** (0.012)		0.108*** (0.012)
AV		0.035** (0.013)	0.173*** (0.023)	0.062** (0.023)		0.035** (0.013)		0.034** (0.013)
HHI		0.030* (0.013)		0.031* (0.013)	0.024 (0.024)	0.003 (0.023)		0.029* (0.013)
FL		0.035** (0.012)		0.034** (0.012)		0.036** (0.012)	0.119*** (0.024)	0.072** (0.022)
Fin. * BV	-0.036 (0.032)	-0.034 (0.030)						
Env. * BV	0.012 (0.032)	0.009 (0.030)						
Fin. * env. * BV	0.018 (0.045)	0.013 (0.043)						
Fin. * AV			-0.087** (0.033)	-0.068* (0.031)				
Env. * AV			-0.057. (0.033)	-0.035 (0.031)				
Fin. * env. * AV ^a			0.131** (0.047)	0.101* (0.044)				
Fin. * HHI					0.040 (0.034)	0.060. (0.032)		
Env. * HHI					0.016 (0.034)	0.024 (0.031)		
Fin. * env. * HHI					-0.050 (0.049)	-0.055 (0.045)		
Fin. * FL							-0.073* (0.034)	-0.063* (0.031)
Env. * FL							-0.050 (0.033)	-0.035 (0.031)
Fin. * env. * FL							0.087 ⁺	0.050

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
							(0.047)	(0.044)
Constant	0.519*** (0.016)	0.253*** (0.053)	0.499*** (0.018)	0.241*** (0.053)	0.591*** (0.018)	0.272*** (0.053)	0.535*** (0.018)	0.236*** (0.053)
Controls	NO	YES	NO	YES	NO	YES	NO	YES
N	2254	2254	2254	2254	2254	2254	2254	2254
R2	0.101	0.187	0.070	0.188	0.019	0.187	0.035	0.187
R2 Adj.	0.098	0.179	0.067	0.180	0.016	0.179	0.032	0.179
F	35.854	23.259	24.215	23.490	6.128	23.360	11.492	23.393
p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note. ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Fin. = Financial-return information. Env. = Environmental-impact information. BV = Biospheric values. AV = Altruistic values. HHI = Household income. FL = Financial literacy. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Description of the dummy variables: email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), survey wave dummy (1 = retail investor sample, 2 = population sample). Control variables: Age, Gender, Education, Experience, Risk preference, trust in ESG, relevance of the incentive, email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed control question, 1 = failed), sample dummy (1 = retail investor sample, 2 = representative sample).
^a Only this effect holds after multiple hypothesis testing correction.

Appendix G. Exploratory results

Appendix G.1. Stability of investment decisions

Table G.1. Logit model: stability of investment by information.

	(1)	(2)	(3)	(4)
Financial	-0.025 (0.126)	-0.025 (0.126)	-0.027 (0.126)	-0.046 (0.129)
Environmental	-0.126 (0.126)	-0.126 (0.126)	-0.127 (0.126)	-0.104 (0.129)
Fin. * env.	-0.002 (0.179)	-0.003 (0.179)	-0.004 (0.179)	-0.004 (0.183)
Granular choice		-0.031 (0.089)	-0.028 (0.090)	-0.042 (0.092)
Biospheric values			0.031 (0.070)	0.021 (0.073)
Altruistic values			-0.030 (0.071)	0.002 (0.074)
Household			0.066 (0.049)	0.048 (0.058)

	(1)	(2)	(3)	(4)
Financial literacy			0.062 (0.168)	0.027 (0.189)
Age				0.015*** (0.003)
Male				0.115 (0.101)
Non-binary				0.607 (1.050)
Education				-0.098*** (0.032)
Children				0.069 (0.064)
Experience				0.042* (0.020)
Risk preference				-0.070*** (0.022)
Trust in ESG				-0.087* (0.039)
Relevance				-0.054+ (0.029)
E-mail address				-0.258+ (0.143)
Attention check				-0.322*** (0.104)
Survey wave				0.054 (0.114)
Constant	-0.612*** (0.088)	-0.596*** (0.099)	-0.789*** (0.301)	-0.038 (0.493)
N	2254	2254	2254	2254

Note. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Description of the dummy variables: email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), survey wave dummy (1 = retail investor sample, 2 = population sample).

Appendix G.2. Deviation from the investment recommendation

The deviation from the recommendation considers the difference between the financial advisors' recommendations based on the choice on sustainability preferences and the actual investment. This study explores whether financial and environmental information affect the deviation from the recommendation. Investors and especially those who start to invest are often unfamiliar or feel uninformed (Brunen & Laubach, 2021; Wins & Zwergel, 2016) and seek assistance of a financial advisors (Paetzold et al., 2015), who gives recommendations based on the stated preferences. Financial and environmental information might decrease the deviation from the recommendation by providing reasons for sustainable investments.

Deviation from the recommendation for investments in sustainable products was calculated as the difference between the total amount invested in sustainable funds minus the recommended amount for sustainable funds. The recommended amount was calculated based on the participants' preferences in the choice, e.g., a choice of 75% in the general choice resulted in a recommendation of 450 Euro for sustainable investments (225 Euro in each sustainable fund) and 150 Euro for conventional investment (75 Euro for each conventional fund).

Concerning deviation from the recommendations, 34.43% of the participants accept the non-binding recommendation. The results show that the deviation from the recommendation amount is larger than zero, indicating that participants invest more than suggested by the recommendation.

Appendix G.2.1. The effect of information on deviation from the recommendation

To explore whether financial and environmental information increase the deviation from the non-binding recommendation, we conduct a multiple OLS regression analysis. Identical models as for sustainable investments (Table 3) are calculated with absolute deviation from recommendation for sustainable investments as dependent variable. While Models 1 and 2 are not significant (min. $p > 0.33$), Models 3 and 4 are significant ($p < 0.05$).

The results (Table G.2) yield no convincing evidence of financial and environmental information affecting the deviation from recommended sustainable investment sum. The deviation from recommendation is positive, indicating that participants invest more sustainable, than recommended based on their sustainability preferences.

The reason for this finding, might be that this recommendation for sustainable investments was based on the stated sustainability preferences. High stated sustainability preferences resulted in a recommendation to invest more money in sustainable investments. Yet, the sustainability preferences were already affected by the information and this effect was mirrored in the investment decision, while leaving the deviation from recommendation unaffected. The exploration of the effect of information on the stated sustainability preferences in the general choice revealed, that financial and, in particular, environmental-impact information increased the percentage of sustainability which participants selected in the choice. Again, in the combination of information, did not have any additional positive effect.

Table G.2. OLS-models: prediction of deviation from recommendation by information.

	(1)	(2)	(3)	(4)
Financial	5.860 (6.554)	5.780 (6.553)	6.003 (6.539)	5.258 (6.562)
Environmental	-3.285 (6.496)	-3.376 (6.495)	-1.970 (6.493)	-2.928 (6.513)
Fin. * env.	-4.916 (9.220)	-4.830 (9.218)	-5.568 (9.198)	-3.662 (9.232)
Granular choice		6.878 (4.609)	6.679 (4.602)	7.101 (4.610)
Biospheric values			-4.823 (3.600)	-4.739 (3.651)
Altruistic values			-3.857 (3.657)	-4.035 (3.722)
Household			3.757 (2.579)	4.210 (2.908)
Financial literacy			10.658 (8.603)	7.954 (9.427)
Age				-0.311 ⁺ (0.171)
Male				5.078 (5.083)
Non-binary				-43.804 (55.363)
Education				0.806 (1.608)
Children				1.515 (3.152)

	(1)	(2)	(3)	(4)
Experience				2.245*
				(1.026)
Risk preference				-1.756
				(1.120)
Trust in ESG				3.415 ⁺
				(1.965)
Relevance				-0.098
				(1.454)
E-mail address				4.193
				(7.399)
Attention check				7.537
				(5.145)
Survey wave				4.351
				(5.727)
Constant	14.982**	11.598*	46.469**	28.012
	(4.612)	(5.138)	(15.390)	(24.917)
N	2254	2254	2254	2254
R2	0.001	0.002	0.009	0.016
R2 Adj.	0.000	0.000	0.006	0.007
F	0.786	1.147	2.591	1.828
p	0.502	0.333	0.008	0.014

Note. ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in brackets. Information is included as dummy variables (0 = no financial information, 1 = financial information; and same for environmental information). Description of the dummy variables: email address dummy (0 = no, 1 = yes), attention check question dummy (0 = passed attention check, 1 = failed), survey wave dummy (1 = retail investor sample, 2 = population sample).

Appendix H. Multiple hypothesis testing

We control for multiple hypothesis testing by including the p-values of all hypotheses test in the Benjamini-Hochberg procedure (Benjamini-Hochberg, 1995). The p-values of regression coefficients are derived from the model that includes our experimental manipulations (information and mode of choice on sustainability preferences) and the individual difference variables (biospheric and altruistic values, household income, and financial literacy).

Table H.1 Results of the multiple hypothesis testing control




Hypothesis	p-value	p-Value Bonfer- roni	p-value Benjamini -Hochberg	Hypoth. holds Bonfer- roni	Hypoth. holds Benjamini -Hochberg
H4. Biospheric values are related to higher sustainable investments	6.66E-16	1.73E-14	0	1	1
H1. Impact info increases sustainable investments	5.16E-06	0.000134	0	1	1
H4. Financial literacy is related to more sustainable investments	1.4E-05	0.000364	0	1	1
H1. Financial info increases sustainable investments	0.001928	0.050125	0.013	0	1
H4. Household income is related to higher sustainable investments	0.006615	0.172003	0.034	0	1
H1. Combined info increases sustainable investments	0.008803	0.228868	0.037	0	1
H4. Heterogeneity altruistic Values and combined info	0.009904	0.257507	0.037	0	1
H4. Heterogeneity altruistic values and financial info	0.029585	0.769199	0.096	0	0
H4. Heterogeneity financial literacy and financial info	0.049803	1	0.144	0	0
H2. Impact info increases satisfaction	0.088172	1	0.229	0	0
H4. Heterogeneity income and financial information	0.129679	1	0.289	0	0
H1.1. Impact info increases sust. investments more than financial info	0.148407	1	0.289	0	0
H4. Heterogeneity financial literacy and impact info	0.148445	1	0.289	0	0

H4. Heterogeneity financial literacy and combined info	0.15563	1	0.289	0	0
H4. Heterogeneity altruistic values and impact info	0.214071	1	0.371	0	0
H4. Heterogeneity income and combined information	0.234167	1	0.381	0	0
H2. Financial info increases satisfaction	0.335373	1	0.485	0	0
H4. Heterogeneity biospheric values and financial info	0.337442	1	0.485	0	0
H3. Mode of choice affects satisfaction	0.354686	1	0.485	0	0
H2. Combined info increases satisfaction	0.430204	1	0.559	0	0
H2.2. Impact info increases satisfaction more than financial info	0.458143	1	0.567	0	0
H4. Heterogeneity income and impact info	0.517729	1	0.612	0	0
H4. Heterogeneity biospheric values and impact info	0.564546	1	0.638	0	0
H4. Altruistic values are related to higher sustainable investments	0.749726	1	0.778	0	0
H3. Mode of choice affects sustainable investment	0.768005	1	0.778	0	0
H4. Heterogeneity biospheric values and combined info	0.778433	1	0.778	0	0

Note. The first column contains the hypothesis with the resulting p-values in the second column. Columns 3 and 4 show the expected p-values according to the Bonferroni-correction and the Benjamini-Hochberg procedure. Columns 5 and 6 indicate, whether the hypothesis holds multiple hypothesis testing (0 = no, 1 = yes).

Appendix I. Experimental material (translated to English)

PAGE	TEXT (Participants' View)	Scale
Welcome	<p>Dear Sir or Madam,</p> <p>in this study we are interested in investment decisions.</p> <p>This study is conducted by the Institute for Advanced Studies and funded by the Anniversary Fund of the Austrian National Bank as a contribution to basic research.</p> <p>As part of the study, you have the opportunity to invest 600 euros in various investment products. Among all participants, [10/5] will be randomly selected and their investment decision will be financed and realized out by us. These [10/5] persons will be paid the value of the investment after one year. The winners will be informed in about two weeks by e-mail.</p> <p>There are no right or wrong answers in this survey. Please answer spontaneously and truthfully. By conscientiously and completely filling out the questionnaire, you are making a significant contribution to our scientific research!</p> <p>Many thanks for your support</p> <p>Katharina Gangl, Florian Spitzer & Marcel Seifert</p> <p>Contact: seifert@ihs.ac.at</p>	
	GDPR	
Data protection	<p>By confirming the stated conditions at the bottom of this page, you can proceed to the questionnaire.</p> <p>[DPA]</p> <p>I hereby confirm that I agree and consent to the above conditions.</p>	
	Explanation ESG	
Info ESG	<p>Please imagine the following situation. You are at an investment consultation at your bank because you want to invest 600 euros and are informed about various relevant aspects and investment options:</p> <p>In addition to classic factors such as liquidity, time horizon, return on investment and risk, ESG factors can also be taken into account when investing your assets. ESG is an abbreviation for Environmental, Social and Governance. Specifically, you can decide whether you want to invest in investment products that pursue sustainability goals in these</p>	

	<p>three areas while adhering to certain criteria. The graphic below illustrates this concept.</p> <div style="text-align: center; background-color: #1a3d4d; color: white; padding: 5px; margin-bottom: 10px;"> Environmental, Social and Governance (ESG) Factors </div> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>ENVIRONMENT</p> <ul style="list-style-type: none"> • Climate protection • Adaptation to climate change • Sustainable use of water and marine resources • Prevention of waste and pollution • Promotion of biodiversity and ecosystems </div> <div style="text-align: center;">  <p>SOCIAL</p> <ul style="list-style-type: none"> • Social working conditions, including avoidance of slavery and child labor • Local and indigenous communities • Avoidance of conflicts and humanitarian crises • Promotion of health and safety • Good employee relations and diversity </div> <div style="text-align: center;">  <p>GOVERNANCE</p> <ul style="list-style-type: none"> • Fair compensation for executives • Prevention of bribery and corruption • Board diversity and structure • Fair tax strategy </div> </div> <p>Please click "Next" when you have read the criteria of these factors.</p>	
Information [random allocation to one of the 4 possibilities]		
No information	[no text]	For treatment 1 and 2
Financial information	<p>You receive even more information about ESG investing during the consultation:</p> <p>Achieve returns with ESG investments</p> <p>By investing in companies that take ESG factors into account and report on them transparently, you can achieve returns and minimize specific risks. Companies that consider ESG factors often operate in industries of the future and are focused on achieving long-term success. An ESG investment can also pay off financially by minimizing specific risks related to environmental disasters, failure to respect labor rights, or rising carbon prices.</p>	For treatment 3 and 4
Environmental information	<p>You receive even more information about ESG investing during the consultation:</p> <p>Promoting sustainability with ESG investments</p> <p>By investing in companies that take ESG factors into account and report on them transparently, you can have an impact and promote sustainability. Investing in companies that consider ESG factors means strengthening their development opportunities and position in the market. With an ESG investment, you can make a difference and ensure that your money does not support companies that exploit nature and people or are among the worst CO2 emitters.</p>	For treatment 5 and 6
Fin. & Env. Information	[show both, financial and environmental information]	For treatment 7 and 8

Choice on sustainability preferences																																
Text for all	<p>Based on the information received: Please indicate how much of the 600 Euro you would like to invest sustainably according to ESG criteria.</p> <p>According to your selection below, the next page will suggest how you could divide your investment amount of 600 Euro among different funds. You can adjust this suggestion however you wish.</p>	For treatment 1 - 8																														
General choice	<p>What is the minimum amount that you want to invest into investment products that meet ESG sustainability criteria? [ESG_percent]</p> <ul style="list-style-type: none"> <input type="radio"/> 0 % - No sustainable products [1] <input type="radio"/> up to 25 % [2] <input type="radio"/> up to 50 % [3] <input type="radio"/> up to 75 % [4] <input type="radio"/> up to 100 % - Only sustainable products [5] 	For treatment 1-8																														
Granular choice [If in the general choice 25% or more is selected]	<p>If you choose to invest in ESG, please select one or both categories. [ESG_focus]</p> <ul style="list-style-type: none"> <input type="radio"/> Investment products that avoid important negative impacts on ESG factors. [1] <input type="radio"/> Investment products that invest in activities that are considered sustainable according to legal requirements (Disclosure Regulation, Taxonomy Regulation). [2] 	For treatment 2, 4, 6, and 8																														
Investment-decision																																
Investment decision	<p>Your bank advisor will now present you with four funds and, based on your input, tell you how you can allocate your 600 euros.</p> <table border="1" data-bbox="422 1377 1228 1765"> <thead> <tr> <th>Fund</th> <th>Fund A</th> <th>Fund B</th> <th>Fund C</th> <th>Fund D</th> </tr> </thead> <tbody> <tr> <td>Orientation</td> <td colspan="2">conventional</td> <td colspan="2">sustainable</td> </tr> <tr> <td>Type</td> <td>Fund with focus on energy and finance</td> <td>Fund with focus on information technology and healthcare</td> <td>Fund that avoids negative impacts on ESG factors</td> <td>Fund that invests in activities that are considered sustainable by law</td> </tr> <tr> <td>Risk and return profile</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> </tr> <tr> <td>Performance in the last year</td> <td>Greater than 30 %</td> <td>Greater than 30 %</td> <td>Greater than 30 %</td> <td>Greater than 30 %</td> </tr> <tr> <td>Largest shares by sector</td> <td>Finance, Oil, Gas</td> <td>Microelectronics, Semiconductors, Agricultural products</td> <td>Insulation technology, Metal recycling, Electricity</td> <td>Plant engineering, Wind energy, Semiconductors</td> </tr> </tbody> </table> <p>You can now accept or change the following proposal. To do so, enter the amount in the respective box. [investment_decision]</p>	Fund	Fund A	Fund B	Fund C	Fund D	Orientation	conventional		sustainable		Type	Fund with focus on energy and finance	Fund with focus on information technology and healthcare	Fund that avoids negative impacts on ESG factors	Fund that invests in activities that are considered sustainable by law	Risk and return profile	6	6	6	6	Performance in the last year	Greater than 30 %	Greater than 30 %	Greater than 30 %	Greater than 30 %	Largest shares by sector	Finance, Oil, Gas	Microelectronics, Semiconductors, Agricultural products	Insulation technology, Metal recycling, Electricity	Plant engineering, Wind energy, Semiconductors	
Fund	Fund A	Fund B	Fund C	Fund D																												
Orientation	conventional		sustainable																													
Type	Fund with focus on energy and finance	Fund with focus on information technology and healthcare	Fund that avoids negative impacts on ESG factors	Fund that invests in activities that are considered sustainable by law																												
Risk and return profile	6	6	6	6																												
Performance in the last year	Greater than 30 %	Greater than 30 %	Greater than 30 %	Greater than 30 %																												
Largest shares by sector	Finance, Oil, Gas	Microelectronics, Semiconductors, Agricultural products	Insulation technology, Metal recycling, Electricity	Plant engineering, Wind energy, Semiconductors																												

	<p style="text-align: center;"> Suggestion Fund A: € 150 Suggestion Fund B: € 150 Suggestion Fund C: € 150 Suggestion Fund D: € 150 </p> <p style="text-align: center;"> Your investment in fund A: Your investment in fund B: Your investment in fund C: Your investment in fund D: Sum </p> <p>Please indicate an amount</p> <p style="text-align: center;"> <input type="text" value="150"/> <input type="text" value="150"/> <input type="text" value="150"/> <input type="text" value="150"/> <input type="text" value="600"/> </p> <p>The amount of investment must total 600 Euro. Remember that [ten/five] participants will be randomly selected, where this decision will be implemented and paid out after one year according to the development of the funds.</p>	
	Adjustment Investment [randomized question order]	
Text for all	Imagine it is August 2022 and your advisor is now reporting to you how the investments previously described to you have performed in the market, giving you the opportunity to adjust your investments.	
Revision conventional	<p>Assume that the conventional investments have 5% more increase in value than the sustainable investments. Would you adjust your sustainable investments? [<i>revision_conv</i>]</p> <ul style="list-style-type: none"> <input type="radio"/> reduce significantly [1] <input type="radio"/> reduce a little [2] <input type="radio"/> neither reduce nor increase [3] <input type="radio"/> increase a little [4] <input type="radio"/> increase significantly [5] 	
Revision sustainable	<p>Assume that sustainable investments have 5% more increase in value than the conventional investments. Would you adjust your sustainable investments? [<i>revision_sust</i>]</p> <ul style="list-style-type: none"> <input type="radio"/> reduce significantly [1] <input type="radio"/> reduce a little [2] <input type="radio"/> neither reduce nor increase [3] <input type="radio"/> increase a little [4] <input type="radio"/> increase significantly [5] 	
	Questions about satisfaction with info texts	
	Finally, we are interested in your opinion.	
Satisfaction Info	<p>The information I received at the beginning about ESG investing was (As a reminder, the information is shown again below). ... comprehensible [<i>sat_info_under</i>] ... simple [<i>sat_info_easy</i>] ... informative [<i>sat_info_info</i>] ... helpful [<i>sat_info_help</i>] ... trustworthy [<i>trust_info</i>]</p>	1 = totally disagree; 7 = totally agree
	[Screenshot of information, according to treatment]	
	Questions about satisfaction with the choice	
Satisfaction choice	<p>Asking me how much I would like to invest in ESG investment products was ... (As a reminder, this choice is shown again below as a screenshot). ... comprehensible [<i>sat_info_under</i>] ... simple [<i>sat_info_easy</i>]</p>	1 = totally disagree; 7 = totally agree

	... informative [<i>sat_info_info</i>]	
	... helpful [<i>sat_info_help</i>]	
	... trustworthy [<i>trust_info</i>]	
	[Screenshot of information, according to treatment]	
Randomized Order of Questionnaire Blocks Start		
	Questions for values [randomized question order]	
Values	Please indicate how important the following values are to you as guiding principles in your life.	1 = totally against my; 7 = of utmost importance
Values altruistic	Equality: equal opportunities for all [<i>values_equality</i>]	DeGroot (2007, 2008), translation from Geiger (2017)
	A world at peace: free of war and conflict [<i>values_peace</i>]	
	Social justice: correcting injustice [<i>values_justice</i>].	
	Helpful: working for the welfare of others [<i>values_help</i>].	
Values biospheric	Preventing pollution: protection of natural resources [<i>values_pollution</i>]	DeGroot (2007, 2008), translation from Geiger (2017)
	Protecting the environment: preserving nature [<i>values_protect</i>]	
	Respecting the earth: respectful treatment of the environment [<i>values_respect</i>].	
	Unity with nature: living in harmony with nature [<i>values_unity</i>].	
	Questions for motives and trust [randomized question order]	
Motives and Trust	Please indicate how strongly you agree with the following statements:	1 = totally disagree; 7 = totally agree; adapted from Meyer (2019)
	If I invest in sustainable funds, I would do so because ...	
	... ESG investments have good returns. [<i>motive_financial</i>]	
	... I have a good feeling about it. [<i>motive_values</i>]	
	... I want to contribute to the goals of ESG investments. [<i>motive_impact</i>]	
	I trust that providers of sustainable investment products strictly follow the ESG guidelines used in their marketing. [<i>trust_ESG</i>]	1 = totally disagree; 7 = totally agree
	Questionnaire Financial Literacy [randomized question order]	
Financial Literacy	Suppose you have 100 € credit balance in your savings account. This balance earns interest at 2% per year and you leave it in this account for 5 years. What do you think: How much will your balance be after 5 years? [<i>literacy_interest</i>]	Lusardi (2008), also Bucher-Koenen (2021), translation by Arnold (2018) iff Hamburg
	<ul style="list-style-type: none"> ○ higher than 102 € [1] ○ exactly 102 € [2] ○ lower than 102 € [3] ○ don't know [4] 	
	Suppose the interest rate on your savings account is 1% per year and the inflation rate is 2% per year. What do you think: After one year, will you be able to buy as much, more or less than today with the balance of the savings account? [<i>literacy_inflation</i>]	
	<ul style="list-style-type: none"> ○ more than today [1] ○ as much as today [2] 	

	<ul style="list-style-type: none"> ○ less than today [3] ○ don't know [4] 	
	<p>Do you agree with the following statement, "Investing in stocks of a single company is less risky than investing in a fund with stocks of similar companies"? [literacy_risk]</p> <ul style="list-style-type: none"> ○ agree [1] ○ disagree [2] ○ don't know [3] 	
Control questions		
Attention check for retail investor sample	<p>In which of the following countries did you already invest at the stock market? Please do not tick anything here and leave the answer blank, this is a control question. [attention_check]</p> <ul style="list-style-type: none"> ○ Germany [1] ○ Austria [2] ○ USA [3] ○ China [4] ○ Other countries [5] 	
Attention check for population sample	<p>In which of the following countries do you have your bank accounts (savings account, checking account, etc.)? Please do not tick anything here and leave the answer blank, this is a control question. [attention_check]</p> <ul style="list-style-type: none"> ○ Germany [1] ○ France [2] ○ USA [3] ○ China [4] ○ Other countries [5] 	
Questionnaire investments		
Risk preference	<p>How would you rate your risk preference in terms of financial investments? [risk_preference]</p>	0 = totally not risk taking to 10 = totally risk taking; Dohmen et al., (2011)
Investments	<p>Do you have money invested in stocks, funds or bonds? [invested_yes_no]</p> <ul style="list-style-type: none"> ○ Yes [1] ○ No, I also have no interest [2] ○ No, but I'm very interested [3] 	
[if previous question is answered with yes]	<p>For approximately how many years have you had experience as an investor with stocks, funds, bonds, etc.? [experience]</p>	

	<ul style="list-style-type: none"> ○ less than 1 year [1] ○ 1 to 2 years [2] ○ 3 to 4 years [3] ○ 5 to 6 years [4] ○ 7 to 8 years [5] ○ 9 to 10 years [6] ○ more than 11 years [7] 	
Randomized Order of Questionnaire Blocks End		
Lastly, we would like you to answer a few questions about yourself:		
Gender	<p>Which gender do you feel you belong to? <i>[gender]</i></p> <ul style="list-style-type: none"> ○ Female [1] ○ Male [2] ○ Non-binary [3] 	
Age	Please indicate your age in years: <i>[open; from 18 to 120]</i> <i>[age]</i>	
Education	<p>Please indicate your highest level of education completed: <i>[education]</i></p> <ul style="list-style-type: none"> ○ Primary/secondary degree [1] ○ Vocational training [2] ○ Second degree without A-levels [3] ○ High school with A-Levels[4] ○ College/foreperson course/master (craftsmen) [5] ○ University (university/university of applied sciences) [6] ○ Other [7] 	
Household income	<p>Please provide the monthly net household income of all persons currently living permanently in your household: (Household income is the sum of the income of all persons living together in a household and can be made up of various sources of income. Please refer to the current net monthly amount, e.g., after deduction of taxes and social security contributions, and add regular payments such as pensions, unemployment benefits, housing allowances, child support, alimony, etc. If you are not sure, please estimate the monthly amount). <i>[income]</i></p>	Gutsche (2020)

	<ul style="list-style-type: none"> <input type="radio"/> below 1.000 € [1] <input type="radio"/> 1.001 € to 2.000 € [2] <input type="radio"/> 2.001 € to 3.000 € [3] <input type="radio"/> 3.001 € to 4.000 € [4] <input type="radio"/> 4.001 € to 5.000 € [5] <input type="radio"/> 5.001 € to 6.000 € [6] <input type="radio"/> 6.001 € to 7.000 € [7] <input type="radio"/> 7.001 € to 8.000 € [8] <input type="radio"/> 8.001 € or more [9] <input type="radio"/> No answer [99] 	
Household size	<p>How many people including you live permanently in your household? [household_size]</p> <ul style="list-style-type: none"> <input type="radio"/> 1 person [1] <input type="radio"/> 2 persons [2] <input type="radio"/> 3 persons [3] <input type="radio"/> 4 persons [4] <input type="radio"/> 5 or more persons [5] 	
Household_children	<p>How many of the people in your household are under 18? [household_children]</p> <ul style="list-style-type: none"> <input type="radio"/> None [0] <input type="radio"/> 1 person [1] <input type="radio"/> 2 persons [2] <input type="radio"/> 3 persons [3] <input type="radio"/> 4 persons [4] <input type="radio"/> 5 or more persons [5] 	
Relevance Incentive (only in population sample)	To me 600 € is ... [relevance_incentive]	1 = no significant amount of money – 7= a significant amount of money
Best of Knowledge	I have answered in this study to the best of my knowledge and belief and my data may be processed [best_of_knowledge]	1 = totally disagree; 7 = totally agree
E-Mail-Address	Among all participants, [10/5] will be randomly selected whose investment decision will actually be implemented and paid out. If you would like to participate in this prize draw, please enter your e-mail address now: [open with check for correct input] [email_adress]	

Send results	Would you like to receive the results of the study? <i>[mail_results]</i> <ul style="list-style-type: none"> <input type="radio"/> Yes [1] <input type="radio"/> No [2] 	
End of Survey		
Thanks	Thank you very much for your participation! Your contribution helps us a lot. The questionnaire is now closed, you can now close this window. Contact: seifert@ihs.ac.at	