Why Do Investors Pay Higher Fees for Sustainable Investments?

An Experiment in Five European Countries

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Abstract

What drives investors' sensitivity to sustainable investment fees? We conduct a large-scale online experiment with samples of individual investors in five European countries. We explore two main channels for investors' sensitivities to fees. First, investors might be willing to pay higher fees on sustainable investments because of their social preferences. They pay to do good. Second, investors with low financial literacy might not understand that higher fees on sustainable investments have a large influence on their net returns. We find that social preferences play an important role in individual sustainable investment behavior in all five countries, but they do not explain whether investors react to fees. Rather, investors with low financial literacy are most prone to paying high fees. These results have important implications for the development of financial products and potential exploitation of individuals with low financial literacy.

Keywords: Sustainable investments; Experimental finance; Financial literacy; Cross-country analysis

JEL codes: G11, G41, G53

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1. Introduction

Individuals increasingly demand that their investments not only yield financial returns, but also social and environmental returns (Hartzmark and Sussman, 2019; Krueger, Sautner, and Starks, 2020; Barber, Morse, and Yasuda, 2021; Bauer, Ruof and Smeets, 2021)[1]. Many investors are even willing to pay higher fees to invest in a sustainable manner (Riedl and Smeets, 2017; Baker, Egan, and Sarkar, 2022; Heeb, Kölbel, Paetzold, and Zeisberger, 2022). So far, however, we do not have a good understanding of what drives investors to pay higher fees on sustainable investments.

We distinguish between two main channels for investors' sensitivities towards sustainable investment fees. First, investors could be willing to pay higher fees because of their social preferences. They are willing to pay to do good. We call this the social preferences explanation for paying higher fees. Second, individual investors often have difficulties to understand the importance of fees (Sirri and Tufano, 1998; Hortacsu and Syverson, 2004; Barber, Odean, and Zheng, 2005; Choi, Laibson, and Madrian, 2010; Barahona, 2020). Thus, investors with low financial literacy might pay higher fees on sustainable investments, because they do not understand the importance of these fees for their net returns. We call this the financial literacy explanation.

To empirically analyze the relevance of these two channels, we conduct a large-scale online experiment with broad samples of individual investors from France, Germany, the Netherlands, Poland, and Spain. We chose those countries because of their differences in economic background, stock market participation, and prosocial behavior. Existing studies differ in their methods, time period, and context, which makes comparisons of sustainable investment behavior across countries difficult. We consider the same target population, methodological approach, outcome variables, explanatory variables, and timing across countries. This allows us to compare the results across countries in a more direct way than previous studies.

Individual investors are defined as financial decision makers in their household who either currently or previously owned investment products or are sufficiently informed about investment products. To ensure that our samples are as representative as possible of the populations of household financial decision makers in the five countries, we applied a two-step recruitment

[1] See also recent (working) papers: Bonnefon et al. (2019), Brodback, Guenster, and Mezger (2019), Ceccarelli, Ramelli, and Wagner (2021), Humphrey, Kogan, Sagi and Starks (2021).

strategy. The final sample has a size of 5,162 individuals, with at least 1,000 respondents in each country.

The pre-registered incentivized experiment is carried out simultaneously in all five countries. In the experiment, individual investors allocate their endowment between sustainable and conventional MSCI World exchange traded funds (ETFs). Two different sustainable ETFs are considered, where one tracks an index that follows a screening strategy based on environmental, social, and governance (ESG) criteria, and the other follows a narrow climate-related strategy. The investment decisions in the experiment are incentivized to ensure that choices are consequential and that the experimental results generalize to real-life behavior (e.g. Riedl and Smeets, 2017). In addition, we measure a wide variety of preferences and beliefs, such as social preferences, risk preferences, time preferences, return expectations, and risk perceptions. We measure financial literacy using the big three financial literacy test (Lusardi and Mitchell, 2008, 2011) and directly test whether individuals understand the impact of fees for their net returns.

We find that social preferences play an important role in explaining individual sustainable investment behavior in all five countries. Social preferences predict the portfolio share of sustainable investments in each country. However, social preferences do not drive the sensitivity to higher fees on sustainable investments. We rather find evidence for the financial literacy explanation. Sustainable investors with low financial literacy react insensitively to higher fees on sustainable investments, but investors with high literacy reduce their sustainable investments if they become relatively more expensive compared to conventional investments. This shows that individuals do not make a conscious choice to pay higher fees because of having strong social preferences to pay for doing good. Rather, investors do pay higher fees for sustainable investments because they do not understand the consequences for their net returns.

Fee sensitivity on sustainable investments varies across countries, consistent with financial literacy levels in those countries. Fee sensitivity is highest in the Netherlands and Germany, the countries with the highest financial literacy, and lower in Spain, France, and Poland. Oaxaca-Blinder decompositions show that the observed country differences can be attributed to differences in financial literacy across countries.

Our paper makes four main contributions. First, we contribute to the literature on sustainable investments. So far, empirical evidence on the sustainable investment behavior of retail investors

has focused on single-country studies (e.g. Riedl and Smeets, 2017; Gutsche and Ziegler, 2019; Hartzmark and Sussman, 2019; Bauer, Ruof and Smeets, 2021) and it has not been clear to what extent these results generalize to other countries. Based on a large-scale survey, with exactly the same target groups, experimental approaches, definitions of sustainable investments, and time period, we show that individual investors differ in their sensitivities to rising fees for sustainable investments across countries and that these differences can be explained by country differences in financial literacy.

Second, we contribute to studies that examine how investors deal with fees charged on investment products (e.g. Sirri and Tufano, 1998; Hortacsu and Syverson, 2004; Barber et al., 2005; Choi et al., 2010; Barahona, 2020). First, we show the central role of financial literacy in explaining why some individuals react more strongly to rising sustainable investment fees than others. This shows that investors do not necessarily make a conscious choice when they are willing to pay higher fees on sustainable investments. Second, we find country differences that can also be explained by differences in average financial literacy. This finding highlights the importance of financial regulation that particularly protects consumers with low financial literacy.

Third, we contribute to studies analyzing social preferences (e.g. Falk et al., 2018) and sustainable investments across countries (e.g. Dyck et al., 2019; Gibson et al., 2022). We show the important role of social preferences for sustainable investments in all countries studied. Social preferences predict the share of sustainable investments universally across countries. This finding stands in stark contrast to models in traditional finance postulating that investors' decisions are grounded solely on risk-return considerations. Yet, the results that social preferences universally matter gives support to the assumptions of more recent models in finance that incorporate such social preferences (Heinkel, Kraus, and Zechner, 2001; Pastor, Stambaugh, and Taylor, 2021; Pedersen, Fitzgibbons, and Pomorski, 2021; Broccardo, Hart, and Zingales, 2022; Gollier and Pouget, 2022). Thereby, as fourth main contribution, our results have important consequences for asset pricing in equilibrium, whereby investors with social preferences could drive up the price of stocks of sustainable companies and drive down the prices of stocks of less sustainable companies (Heinkel et al., 2001; Pastor et al., 2021: Pedersen et al., 2021).

2. Data, experimental design, and variables

We base our analysis on a lab-in-the-field experiment, which was implemented in a large scale computer-assisted online survey among 5,162 households' financial decision makers in five European countries, namely France (1,007 respondents), Germany (1,009 respondents), the Netherlands (1,010 respondents), Poland (1,070 respondents), and Spain (1,066 respondents). The survey was carried out in collaboration with the professional market research institute Psyma+Consulting GmbH (Psyma) during May to July 2021 and had the goal to survey about 1,000 people per country (i.e. about 5,000 respondents in total). Among other tasks, Psyma was responsible in particular for programming the questionnaire, conducting the online survey, and recruiting the respondents from own online panels.

We adopted the following two-step approach to make the surveys as representative as possible for the retail investor space. First, the survey company recruited individuals in such a way that the samples of people who started the survey were, as close as possible, representative of citizens of at least 18 years of age for the respective country.[2] In a second step, we asked screening questions about the respondents' responsibility for financial decisions in their household and their current as well as previous investment experiences. Only individuals who either currently or previously owned investment products or reported to be sufficiently informed about investment products were allowed to proceed with the questionnaire and to participate in the lab-in-the-field experiment. In the next section, we will show that this sampling approach indeed led to a broad representation of investors in our sample.

Furthermore, the survey company conducted quality checks (e.g. regarding systematic response patterns) on all completed questionnaires throughout the field time. Respondents for whom it became evident that they were not reading or answering the questions adequately due to systematic responses or too short completion time were excluded from the sample and new respondents were

[2] For instance, whether invited persons responded to the survey differed for some strata of the invited population, and subsequent invitation waves were sent with higher weight for those strata that were less likely to respond (for example, if females less frequently opened the survey in the first invitation wave, they were sampled disproportionally in the subsequent invitation waves), such that in the end the distribution of age, gender, and region for people who finally started the survey are close to the respective distributions in the official population statistics.

re-recruited accordingly. The median time for completion of the survey across all countries is 30.1 minutes.

2.1 Survey and sample structure

The study was pre-registered at OSF Registries[3] and our approach was ethically approved by the central ethics committee of one of the authors' universities. The survey consisted of nine different parts (A-I): Part A contained questions that allowed us to screen-out respondents who did not correspond to the target group. This part also included further questions about respondents' current forms of investments and some background information on financial decision making processes in respondents' households. Part B contained the investment experiment, which was the core of our study. We describe the experimental design in the following section. Part C comprised several general questions on the respondents' investment and consumption behavior. Part D aimed to capture further background information on the respondents' sustainable investment behavior and knowledge. Part E aimed to capture a variety of individual characteristics such as economic preferences, personality traits, or personal attitudes. In the context of the present study, this part particularly included items to measure individual risk, time, and social preferences. Part F included questions on financial literacy. The final parts (i.e. Part G, Part H, and Part I) comprised further questions on the socio-demographic background of our respondents.

In line with our goal to survey countries with varying backgrounds, our data show that countries differ with respect to the median net household income, age, gender, and education (see also Table A.6 in appendix A). Concerning net household income, the Netherlands ranks highest with a median class of €3,500 to €4,000, followed by France and Germany. The average age is similar across countries, ranging from 42.7 years in Spain to 48.3 years in the Netherlands. The share of females is higher in Poland and Spain compared to France, Germany, and the Netherlands. Nevertheless, the share of women is well below 50% in all countries. More than half of respondents have a university education in Spain, Poland, and the Netherlands. Compared to the general populations in each of these countries (see Tables A.1 to A.5 in Appendix A), we see that our investor samples tend to be overrepresented by male and older individuals. These investor characteristics are in line with the characteristics of investors in previous studies (e.g. Guiso,

[3] https://osf.io/6kyja.

Sapienza, and Zingales, 2008; Kaustia and Torstila, 2011; van Rooij, Lusardi, and Alessie, 2011; Riedl and Smeets, 2017; Choi and Robertson, 2020).

2.2 Investment experiment

After the initial screening questions in Part A of the survey, we directly started with the incentivized investment experiment as the main part of our study. In this way, we minimize any priming effects, whereby investment behavior in the experiment could be influenced by previous questions. We described the basic setting to the respondents on the first screen of the experiment. Accordingly, respondents had the opportunity to make eight subsequent investment decisions, with a freely allocable endowment[4] in each decision situation.

To incentivize investment decisions, we informed the participants that ten of them would be randomly selected after finishing the survey in July 2021 and that their investment decisions would be realized (indeed we invested real money in accordance with the investment decisions after the field phase). We further explained that the investment would last for one year. After this year, in July 2022, the funds will be sold again and the selected participants will receive the value of their portfolio net of fees.[5] For further clarification, we included two more examples to explain the procedure if a person were to be selected. We further guaranteed that all ten selected participants would be informed about their selection after the random selection is completed, and that all information would be true. Finally, we emphasized that respondents were totally free in their decision.[6]

Respondents were randomly assigned to two groups with equal probability and without their knowledge. Individuals assigned to the first group (Set A) were first asked to make four investment decisions regarding ETFs for the MSCI World Index and the MSCI World ESG Screened Index.

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[4] Following Falk et al. (2018), endowments were scaled by median household income in each country, expressed in local currency (€ for France, Germany, the Netherlands, and Spain, and Zł for Poland), and rounded to the next multiple of 100 to facilitate calculations. The reference endowment was €1000 in Germany, and scaling resulted in endowments of €1000 for France and the Netherlands, €600 for Spain, and €300 for Poland (rounded and converted to Zł1300).

[5] To provide participants with realistically high investment amounts and to reduce administrative complexity, we follow earlier experimental studies analyzing individual investment behavior and only a pay randomly chosen subset of participants (e.g. Kirchler, Lindner, and Weitzel, 2018). Results from various (review) studies show that such an approach leads to only minor differences, if any, compared to the case where all participants are paid (e.g., Charness, Gneezy, and Halladay, 2016; Clot, Grolleau, and Ibanez, 2018). After the survey, we did indeed invest real money according to the investment decisions.

[6] Figure B.1 in Appendix B shows an exemplary screenshot of the first screen of our experiment.

Thus, these respondents could choose between an ETF based on a broad (conventional) global stock index covering more than 1,600 stocks from 23 developed countries, namely the MSCI World Index, and an ETF based on a narrower (sustainable) stock index taking ESG criteria into account, namely the MSCI World ESG Screened Index. After these four decisions, we asked these respondents to make four additional investment decisions between an ETF based on the MSCI World Index and an ETF based on the MSCI World Climate Change Index. We thus again offered an ETF based on a broad (conventional) global stock index but replaced the rather generally oriented sustainable stock index by an index focusing on climate-related issues and transition risks towards a low-carbon economy. This distinction allows us to reveal to what extent individuals take different facets of sustainability into account and whether individual investors' fee sensitivity varies across different sustainable investment approaches.

When selecting the investment products used in the experiments, we deliberately chose ETFs, as these are straightforward investment products that enjoy a high degree of familiarity. The latter also applies to the MSCI World Index and its provider MSCI. By choosing MSCI, it was also possible to select two sustainable stock indices that are offered by the same financial services provider and are both based on the same parent index (the MSCI World Index). Ultimately, this approach also enables us to explore the extent to which investors are willing to move away from a broad market portfolio to invest sustainably instead.

To avoid any order effects, respondents assigned to the second group (Set B) were first asked to make four investment decisions between an ETF based on the MSCI World Index and an ETF based on the MSCI World Climate Change Index, and were then asked to make four investment decisions between an ETF based on the MSCI World Index and an ETF based on the MSCI World ESG Screened Index. Otherwise, the experimental design for the two groups was identical (i.e., all texts and explanations that did not concern the specific ETFs were the same).

On the second screen, we explained the specific decision situation. Accordingly, we described that respondents would be asked to allocate their endowment between two real ETFs in each decision situation. Individuals were free in their allocation and could invest the entire amount into one single fund or distribute the amount equally or unequally between the two funds. The only constraint was that they had to invest a certain minimum amount of their available endowment if they wanted to

invest in an ETF.[7] This minimum amount was 1/20 of the available endowment, and thus €50 in France, Germany, and the Netherlands, €30 in Spain, and Zł65 in Poland. In the following, individuals assigned to Set A received short descriptions about the MSCI World Index and the MSCI World ESG Screened Index and were then asked to make their first investment decision.[8] Analogously, individuals assigned to Set B received information on the MSCI World Index and the MSCI World Climate Change Index and were then asked to make their first investment decision.

Figure 1 shows a screenshot of an exemplary first decision situation for individuals from set B (translated into English). This figure illustrates the key feature of our experiment: In addition to the short descriptions of the indexes in the upper part of this figure, we informed respondents about the fees charged on each ETF. Importantly, we did not provide any further specific information on the ETFs (e.g., past returns or a concrete International Securities Identification Number), which would allow individuals to identify these funds by, for example, searching on the internet.[9] This allowed us to set the fees charged on the ETF based on the MSCI World Index to a constant value of 0.20% in all eight decision situations per respondent, but to vary the fees charged on the sustainable ETFs.

For each of the two sustainability stock indices, we presented four different fee scenarios to each individual. The fees charged on the sustainable ETFs were 0.20%, 0.90%, 1.60%, and 2.30%. The order of these four fee scenarios varied randomly across individuals. Therefore, for both sustainability stock indexes and each individual, we considered an investment decision in which the fees charged on the sustainable ETF were just equal to the fees charged on the conventional ETF. In the other three scenarios, the fees charged on the sustainable ETF were higher compared to the fees charged on the conventional ETF.

For example, if the value of 0.90% had been randomly selected as fee charged on the MSCI World Climate Change Index ETF in the first decision of a certain individual (see Figure 1), the fees charged on the sustainable ETF in the second decision situation, which was shown on the next screen, would be either 0.20%, 1.60%, or 2.30%. The fee charged on the sustainable ETF in the second decision would then be randomly selected from these three values. The fees for the third

[7] We introduced this minimum amount to avoid too small investments in any of the ETFs offered.
[8] The descriptions of the indexes were based on the official documents provided by MSCI.
[9] In fact, the performance of the three indices has been very similar over the past few years.

and fourth decision situations are determined accordingly.[10] This approach allows us to reveal to what extent individuals are willing to invest in a sustainable manner if fees differ, and thus how sensitively investors react to varying fees on sustainable investments.

< Figure 1 here >

2.3 Variables

2.3.1 Experimental variables

Share invested in sustainable ETFs

To gain insights into individuals' preferences towards sustainable ETFs, and in particular to compare individual sustainable investment behavior across the four fee scenarios, we construct the variable *Share of endowment invested in sustainable ETFs.* This variable measures an individual's investment in either the MSCI World ESG Screened Index fund or the MSCI World Climate Change Index fund in each of the eight investment decisions as share of their endowment (in %). This variable serves as dependent variable in our main analysis.[11]

Fees

To capture respondents' sensitivities to higher fees on sustainable ETFs, we construct one dummy variable for each fee scenario, namely *Fees on sustainable ETF: 0.2%*, *Fees on sustainable ETF: 0.9%*, *Fees on sustainable ETF: 1.6%*, and *Fees on sustainable ETF: 2.3%*. These variables take the value of one if the corresponding fee scenario is considered, and zero otherwise.

Further variables

Finally, we construct several auxiliary variables. First, we construct eight dummy variables (*First decision*, *Second decision*, …, *Eighth decision*) that indicate the respective investment decision situation of each respondent to capture potential learning effects or fatigue. Second, to control for

[10] For exemplary screenshots showing the second, third, and fourth decision in the experiment, see Figures B.2, B.3, and B.4 in Appendix B.

[11] Thus, we use a slightly differently constructed dependent variable than described in the pre-analysis plan. However, this does not change our basic empirical strategy and all hypotheses can still be tested.

potential order effects, we also create the dummy variable *Saw ESG Screened ETF first* that takes the value of one if a respondent is assigned to the first group (set A) which was first asked to make four investment decisions between the ETFs based on the MSCI World ESG Screened Index and the MSCI World Index, and zero otherwise. Third, to differentiate between the two sustainable investment strategies analyzed in our main analysis, we created a dummy variable called *MSCI World Climate Change Index ETF* that takes the value of one if the corresponding investment decision refers to an ETF based on the MSCI World Climate Change Index, and zero if the decision is related to an ETF based on the MSCI World ESG Screened Index.

2.3.2 Survey variables

We additionally create a wide variety of variables based on survey questions. Some of these variables allow us to measure individual social preferences, financial literacy, and return expectations and thus to analyze how these factors drive investors' sensitivities to higher fees on sustainable investments. The remaining variables are mainly used as control variables.

Social preferences

We capture social preferences using validated survey questions from the Global Preferences Survey Module (Falk et al., 2016; Falk et al., 2018). A large advantage of using these validated questions is that they are already available in the languages of the five countries considered in our study.[12] Moreover, using identical formulations as earlier studies increases the comparability of our data. Accordingly, we ask the question "How willing are you to give to good causes without expecting anything in return?" Respondents can indicate their willingness on an 11-point Likert scale ranging from 0 "completely unwilling" to 10 "completely willing." Based on these answers, we construct the variable *Social preferences* that captures responses to this statement and thus takes values from zero to ten.

[12] These questions can be downloaded from https://www.briq-institute.org/global-preferences/downloads (accessed on January 31, 2021). All other questions and texts are translated into the different languages by the survey institute and are cross-checked by the researchers involved in this project, with each of the researchers able to cover at least one of the five countries considered in our study.

Financial literacy and understanding the impact of fees for net returns

We use two measures to capture individual financial literacy. Our first measure is based on quiz questions developed by Lusardi and Mitchell (2008, 2011). These three quiz questions refer to interest rates, inflation, and risk diversification, respectively. The variable *Financial literacy* comprises the number of correct answers and thus ranges between zero and three. The average score on the financial literacy quiz is 2.21 correct answers.

As these quiz questions aim to measure an individual's general financial knowledge, we additionally consider a second measure that directly indicates whether respondents understand the impact of fees for their net returns. After the experiment we ask participants: "Please assume that you have been selected. Please indicate the amount to be deducted from the value of your investment if the value of your investment in July 2022 is €1,000 and the fees are 2.3%." Respondents can choose between €0.23, €2.30, €23.00 (correct answer), €230.00, and "do not know." Accordingly, we construct the dummy variable *Did calculate fees correctly* that takes the value of one if the person selects €23.00, and zero otherwise. 76.68% of all respondents answered this question correctly, 16.62% selected an incorrect answer, and 6.70% answered "do not know," indicating a quite substantial share of respondents not understanding how to calculate fees correctly.

Return expectations

To capture return expectations concerning the MSCI World ESG Screened Index ETF compared to the MSCI World Index ETF, we ask the question "What returns do you expect on the MSCI World ESG Screened Index fund?" Respondents can choose among "much lower returns compared to the MSCI World Index fund," "a little lower returns compared to the MSCI World Index fund," "neither lower nor higher returns compared to the MSCI World Index fund," "a little higher returns compared to the MSCI World Index fund," "much higher returns compared to the MSCI World Index fund," and "don't know." To capture return expectations concerning the MSCI World Climate Change Index ETF, we adjust the question accordingly, but use the same response categories.

In constructing the corresponding variables, we must account for the fact that we include all eight investment decision of each person in the main analysis. Thus, in four observations per person, the dependent variable *Share of endowment in sustainable ETFs* relates to ETFs based on the MSCI

World ESG Screened Index and in the other four decisions to ETFs based on the MSCI World Climate Change Index. Thus, if we want to include return expectations as explanatory variables, they must also relate to the corresponding fund. Therefore, we construct one dummy variable for each of the response categories, namely *Much lower returns compared to MSCI World, A little lower returns compared to MSCI World, Neither lower nor higher returns compared to MSCI World, A little higher returns compared to MSCI World, Much higher returns compared to MSCI World,* and *Do not know returns.* These variables take the value of one if the respondent select the corresponding response category, and zero otherwise. However, the values of the variables in four decisions refer to the individuals' expectations on the returns of ETFs based on the MSCI World ESG Screened Index and in (the other) four decisions to the expectations on ETFs based on the MSCI World Climate Change Index. Therefore, the values of these variables may also vary within an individual if they have different return expectations for ETFs based on the MSCI World ESG Screened Index than for ETFs based on the MSCI World Climate Change Index.

Control variables

In addition, we also create a large set of control variables. To not only capture return expectations, but also individual risk perceptions concerning sustainable versus conventional investments (e.g. Riedl and Smeets, 2017; Gutsche and Ziegler, 2019), we ask respondents to indicate their agreement with the statements "The MSCI World ESG Screened Index fund is riskier than the MSCI World Index fund." and "The MSCI World Climate Change Index fund is riskier than the MSCI World Index fund." Consistent with the scale used by Riedl and Smeets (2017), for both statements, respondents can rate their agreement on a 7-point Likert scale ranging from 1 "fully disagree" to 7 "fully agree" or select "don't know." In constructing the variables for the main analysis, we proceed as in the previously described construction of the variables capturing individual return expectations. Accordingly, the variables refer to either ETFs based on the MSCI World ESG Screened Index or ETFs based on the MSCI World Climate Change Index. We construct three dummy variables. The dummy variable *Lower risk compared to MSCI World* takes the value of one if the respondent perceives the corresponding sustainable ETF to be less risky than the MSCI World Index fund (Likert scale 1-3), and zero otherwise. The dummy variable *Higher risk compared to MSCI World* takes the value of one if the respondent perceives the corresponding sustainable ETF to be riskier than the MSCI World Index fund (Likert scale 5-7), and zero

otherwise. We additionally construct the dummy variable *Do not know risk* that takes the value of one if a respondent selects the option "don't know", and zero otherwise. Thus, the base category refers to equal risk perceptions (Likert scale 4).

We measure respondents' risk and time preferences by using validated survey questions from the Global Preferences Survey Module (Falk et al., 2016; Falk et al., 2018). Concerning risk preferences, we ask respondents to tell us, in general, how willing or unwilling they are to take risks, using a scale from 0 to 10, where 0 means "completely unwilling to take risks" and 10 means "very willing to take risks." The responses to this question are coded by the variable *Risk preferences*. Regarding time preferences, we ask respondents to indicate their willingness to give up something that is beneficial for them today in order to benefit more from that in the future. Respondents can indicate their willingness on an 11-point Likert scale ranging from 0 "completely unwilling" to 10 "completely willing." The answers to this question are captured by the variable *Time preferences*.

To capture potential signaling motives, we follow Riedl and Smeets (2017). Accordingly, we ask respondents for their agreement with the statement "I often talk about investments with others." on a 7-point Likert scale ranging from "fully disagree" (Likert scale 1) to "fully agree" (Likert scale 7). The variable *Signaling* captures responses to this statement and thus takes values from one to seven.

Finally, we consider socio-demographic and socio-economic variables. We construct the following variables: The variable *Age* denotes the respondents' age in years. The dummy variable *Female* takes the value of one if the respondent is a woman, and zero otherwise. The dummy variable *High education* takes the value of one if the respondent has at least a university entrance qualification, and zero otherwise. The dummy variable *Married* takes the value of one if a respondent is married or lives together with their partner, and zero otherwise. To capture the respondents' household net income, we construct four dummy variables, namely *Low income, Middle income, High income,* and *Do not know or report income*. *Low income* takes the value of one if the respondent's reported monthly net household income is below the median class in the sample for the respective country, and zero otherwise. *Middle income* takes the value of one if the respondent's reported monthly net household income is in the median class in the sample for the respective country, and zero otherwise. *High income* takes the value of one if the respondent's reported monthly net household

income is above the median class in the sample for the respective country, and zero otherwise. Finally, *Do not know or report income* takes the value of one if the respondent does not know or disclose their monthly net household income, and zero otherwise.

Given the differences in religious affiliations across countries and possible resulting influences on sustainable investment behavior (e.g. Salaber, 2013), we also construct three dummy variables to capture respondents' religious affiliations: The dummy variable *Catholic* takes the value of one if a respondent belongs to the Roman Catholic Church, and zero otherwise. In the same manner, the dummy variables *Protestant* and *Other religion* take the value of one if the respondent belongs to the Protestant Church or has any other religious affiliation, respectively, and zero otherwise. The dummy variable *Do not report religion* takes the value of one if the respondent indicated that they are not willing to answer questions about the topic of religiosity, and zero otherwise. Finally, we construct the five country dummy variables *France*, *Germany*, *Netherlands*, *Poland*, and *Spain* that take the value of one if the respondent's main place of residence if in the corresponding country, and zero otherwise. We present an overview of selected descriptive statistics for all survey variables in Table A.6 in appendix A.

3. Results

Figure 2 plots the share of the endowment individuals invest on average in sustainable ETFs in the four fee scenarios.[13] Respondents invest on average about 56% in a sustainable manner if the fees on the sustainable ETF and the MSCI World Index ETF are equal (grey bar). Respondents further react to increasing fees charged on sustainable investments by decreasing their sustainable investments on average. However, in both the 0.9% and the 1.6% scenario, the average shares of sustainable investments do not fall below 50% (light green and sand-colored bar). Even if the fees for the sustainable option are as high as 2.3%, the average share of sustainable investments remains at 48.0% (orange bar). Therefore, our findings align with previous studies indicating that, on average, investors are willing to pay for sustainable investments (such as Riedl and Smeets, 2017; Barber et al., 2021; Baker et al., 2022; Heeb et al., 2022).

[13] Thus, to analyze our first research question, we pool all investment decisions and do not yet distinguish between the two sustainable investment strategies, i.e. whether an ETF is based on the MSCI World ESG Screened Index or the MSCI World Climate Change Index.

< Figure 2 here >

Nevertheless, Table 1 shows that the observed reductions in the shares of sustainable funds are statistically significant compared to the 0.2% baseline scenario, also after controlling for individual-specific characteristics and experimental variables.[14] Evidence for different average shares invested in sustainable ETFs across the fee scenarios is also supported by the corresponding non-parametric Friedmann test ($\chi 2$ test statistic = 318.639, p-value = 0.000). This suggests that while individual investors are generally sensitive to higher fees charged on sustainable funds, they still invest a considerable amount in sustainable ETFs, even if the fees become more expensive.

< Table 1 here >

Table 1 further allows us to analyze whether we can replicate results from previous studies examining the determinants of sustainable investment behavior. We find that return expectations and risk perceptions play an important role in the (sustainable) investment decision. Individuals who expect higher returns on the sustainable alternative compared to MSCI World Index fund invest a significantly higher proportion of their endowment sustainably. In addition, respondents who expect lower returns also invest less in the corresponding fund, compared to respondents who expect neither lower nor higher returns. In terms of risk perceptions, a similar picture emerges. People who perceive the risks of sustainable funds as higher compared to the MSCI World Index fund invest less in the sustainable investment alternative than people who expect the same risks. If they expect lower risks, they also invest more than people expecting equal risks.

More interestingly, we find a statistically and economically significant effect of social preferences on the share of sustainable ETFs. This shows that different from standard finance theory, investors are also guided by non-pecuniary returns. The estimated social preference parameters imply that a person who reports being completely willing to give to good causes invests between 8.50 (model

[14] Table 1 presents the results of fixed effects (column 1) and random effects estimations (columns 2 and 3). By applying the fixed effects estimation approach, we account for the panel data structure in our dataset with eight subsequent investment decisions per respondent and control for individual fixed effects that are time-invariant across these eight decisions. By using the random effects estimations approach, we also take the panel data structure in our data into account. However, this approach further allows us to analyze the relevance of potential determinants of individual sustainable investments and to compare our results with previous studies, analyzing the determinants of individual sustainable investment behavior.

1) and 9.18 (model 2) percentage points more in the sustainable ETF than a person who is completely unwilling to give to good causes.

Regarding the other economic preferences, we find no evidence that risk preferences play a role. However, time preferences matter. It turns out that patient people invest a larger share of their endowment in sustainable investments. This finding is in line with the idea that societal and environmental benefits are most likely to occur in the long run and investors need to be patient for these effects to materialize. This result is also consistent with the finding that institutional investors with a longer term investment horizon invest more in companies with good ESG performance (Starks, Venkat, and Zhu, 2020). Concerning social signaling motives, individuals who talk about investing frequently, invest a lower proportion of their initial endowment in sustainable ETFs. Investing a small portion in sustainable investments enables individuals to discuss these investments with others to improve their reputation, without incurring significant additional costs (as noted in Riedl and Smeets, 2017).

Regarding other individual characteristics, respondents with higher levels of financial literacy tend to invest a lower percentage in a sustainable manner. The analysis in the next section will show that this result is driven in particular by fee sensitivity, because investors with low financial literacy keep investing in sustainable funds if fees are high. Moreover, women tend to invest a higher proportion of their investments sustainably than men. This finding is in line with previous literature, such as Bauer et al. (2021) who also find that female pension fund members are more likely to choose sustainable investments than male members. Catholic respondents invest significantly less in sustainable funds than respondents without religious affiliation.

Further, the third model in Table 1 gives us a first indication of possible country differences. The results show that French respondents (the omitted category) invest a significantly higher proportion in sustainable ETFs than respondents from the other countries, implying relatively stronger preferences for sustainable investments. Especially German investors have significantly weaker preferences for sustainable investments than respondents from the other countries.

Finally, considering our experimental controls, we find that respondents have slightly stronger preferences for sustainable investments that follow a rather narrow strategy with respect to climate change than a broader ESG strategy. Our results further hold if we control for potential order effects

by including the dummy variable *Saw ESG Screened fund first* and the indicators for the different decision situations.

3.1 What drives fee sensitivity of sustainable investors?

To analyze to what extent respondents' fee sensitivity is driven by social preferences or financial literacy, we extend model 3 in Table 1 and specify three additional models in the next step. In the first model, we interact the variable *Social preferences* with the dummy variables indicating the three fee scenarios of 0.9%, 1.6%, and 2.3%, respectively. These interaction terms allow us to analyze how individual fee sensitivity varies with different levels of social preferences. We proceed in an analogous manner with our two measures for financial knowledge, namely *Financial literacy* in the second model and the dummy variable *Did calculate fees correctly* in the third model. The corresponding estimation results are reported in Tables A.7 to A.9 in appendix A.

Based on the first model, Figure 3 shows the predicted shares of sustainable ETFs across the four fee scenarios for individuals with rather weak and strong social preferences. To represent rather weak social preferences, we consider the lowest quartile of the sample distribution of social preferences, which corresponds to a score of five (given a Likert-scale ranging from zero to ten). Rather strong social preferences are represented by the highest quartile of the sample distribution, corresponding to a score of nine, and thus almost the highest score on the scale.[15]

Two aspects become evident from this figure. First, the bars for each fee scenario increase with stronger social preferences. This pattern illustrates the estimated positive effect of social preferences on the share of sustainable ETFs as already noted based on Table 1. However, at both social preferences scores, the shares of sustainable investment decrease at a similar rate across the fee scenarios.[16] We thus find no support for the social preferences explanation, implying that individuals' sensitivities to fees on sustainable investments are not driven by social preferences.

[15] The pattern that we describe here by using the 25% and 75% quantiles does not change if we predict the shares of sustainable ETFs in the different fee scenarios at any other social preferences score from zero to ten.

[16] This pattern is also reflected by the estimated parameters for the interaction terms (see Table A.7 in appendix A), which are not significantly different from zero. Moreover, the result does not depend on the ETFs' sustainability strategy either, as can be seen from Figures B.5 and B.6 in appendix B.

Result 1a: Social preferences play a role in determining the share of sustainable investments, but they do not explain how investors react when faced with an increase in fees on sustainable investments.

< Figure 3 here >

However, we find strong evidence for the financial literacy explanation. Figure 4 illustrates that respondents' fee sensitivity increases with higher levels of financial literacy. Respondents with two and especially three correct answers react sensitively to increasing fees and decrease their share of sustainable ETFs if the corresponding fees go up. In contrast, persons with low levels of financial literacy rather react insensitively to higher fees.

We even find that respondents who answered none of the quiz questions correctly tend to increase their investments with increasing fees. These estimated effects are also economically significant. As an example, in the scenario where fees are 0.2%, individuals who answer three questions correctly are predicted to invest approximately six percentage points more in sustainable investments than those who answer none correctly. In contrast, in the scenario with fees of 2.3%, individuals with the highest level of financial literacy significantly reduce their percentage of sustainable investments and are predicted to invest 14 percentage points less sustainably than those with the lowest level of financial literacy.[17]

< Figure 4 here >

These results are confirmed when we consider the second measure for financial knowledge. Figure 5 plots the predicted shares of the endowment respondents invest on average in sustainable ETFs in the four different fee scenarios for persons who do not understand how to calculate fees, and those who do. In line with our findings concerning financial literacy, we find that individuals who do not understand the fee calculation task correctly react insensitively to higher fees on sustainable investments. In contrast, people who answer this question correctly are predicted to react sensitively to fees – similar to respondents with high levels of financial literacy.

[17] Figures B.7 and B.8 show that these results do also not depend on the ETFs' sustainability strategy.

The economic effects align with those previously discussed for financial literacy. In the scenario with 0.2% fees, individuals who correctly calculate fees are predicted to invest approximately five percentage points more in sustainable funds than their counterparts. However, in the scenario with 2.3% fees, individuals who understand how to calculate fees invest around six percentage points less than investors who do not calculate fees correctly. In summary, our analysis demonstrates that sensitivity to fees regarding sustainable investments is particularly dependent on individuals' financial knowledge.

Result 1b: Individuals with higher levels of financial literacy tend to decrease the percentage of their investments that are sustainable when these investment products become more expensive. In contrast, investors with lower levels of financial literacy tend to be less sensitive to higher fees on sustainable investments or even increase their investment in sustainable options as fees rise.

< Figure 5 here >

Finally, we test whether individuals in our experiment behave consistently with traditional finance models. Accordingly, individuals who expect higher returns from sustainable funds than from conventional funds would be less sensitive to rising fees on sustainable investments than their counterparts. To this end, we follow the empirical strategy described above and interact the dummy variables capturing individual return expectations with the dummy variables indicating the three fee scenarios of 0.9%, 1.6%, and 2.3%, respectively. Consistent with traditional assumptions, the results[18] show that return expectations play at least a moderate role in explaining fee sensitivity. Especially respondents who expect much higher returns on the sustainable ETF compared to the MSCI World Index ETF are significantly less fee sensitive.

3.2 Does fee sensitivity of sustainable investors vary across countries, and, if so, why?

In this section, we analyze how sensitivity to fees on sustainable investments varies across countries. Following our empirical strategy in the previous section, Figure 6 plots the average

[18] See Table A.10 in appendix A and Figure B.9 in appendix B.

shares of their endowments respondents from the five different countries invested in sustainable ETFs in the four fee scenarios.[19]

< Figure 6 here >

In general, we find the same basic pattern for all countries, namely decreasing investments in sustainable ETFs with increasing fees. However, the plot also suggests two important findings. First, if fees on sustainable and conventional funds are equal, preferences for sustainable investments seem to vary across countries, but only slightly.

Second, Dutch and German respondents react considerably more sensitively to increasing fees on sustainable investments than respondents from the other three countries. This result is graphically illustrated in Figure 6 by the fact that for Germany and the Netherlands, the height of the bars decreases significantly faster with increasing fees than for the other three countries. Here, the bars also decrease, but to a much lesser extent. These findings are statistically supported by the results presented in Table 2. The estimated interaction terms of the dummy variables for the fee scenarios and the country dummy variables for Germany and the Netherlands are significantly negative in all cases. In contrast, the corresponding interaction terms for Poland and Spain are not significantly different from zero. This implies that Polish and Spanish respondents do not react significantly different to higher fees charged on sustainable investments than French respondents. Accordingly, Germans and the Dutch respond not only more sensitively to higher fees on sustainable investments than French respondents, but also than Polish and Spanish respondents.

Result 2a: The sensitivity to higher fees on sustainable funds varies across European countries and is highest in the Netherlands and Germany.

< Table 2 here >

To analyze and explain the country differences in fee sensitivity observed above, we conduct an Oaxaca-Blinder decomposition (Oaxaca, 1973; Blinder, 1973). This method has traditionally been used to analyze wage discrimination between women and men and has been used in finance to analyze stock market participation (Grinblatt, Keloharju, and Linnainmaa, 2011) and financial

[19] Thus, as in section 3.1, we do not distinguish between the two sustainable investment strategies, i.e. whether an ETF is based on the MSCI World ESG Screened Index or the MSCI World Climate Change Index.

distress (Parise and Peijnenburg, 2019). The potential number of analyses to conduct with the Oaxaca-Blinder decomposition is too large to report all results in a comprehensive manner. Since we find that the sensitivity to higher fees on sustainable funds is highest in the Netherlands and Germany, we compare the fee sensitivity in each of these two countries with each of the other three countries. In addition, we consider the two extreme fee scenarios of 0.2% and 2.3% and measure fee sensitivity by the difference in the individual investment amounts if fees increase from 0.2% to 2.3%.

Table 3 confirms our previous results that German and Dutch respondents react considerably more sensitive to higher fees charged on the sustainable ETF than respondents from the other three countries. For example, German respondents reduce their share of sustainable investments by 9.61 percentage points more than French respondents if fees increase from 0.2% to 2.3%. We find similar effects when we consider the other five country comparisons reported in Table 3.

< Table 3 here >

In the decomposition framework, we are particularly interested in the share of the total difference that can be explained by country differences in the explanatory variables, as well as identifying which explanatory variables account for the largest share. Considering Germany and France again, 40.27%[20] of the country differences can be explained by differences in the explanatory variables included in our estimation approach. When considering the other five comparisons, the explained proportions in the country differences that can be explained by differences in the explanatory variables vary between 23.68% and 49.71%.

Among all explanatory factors included, financial literacy explains the largest share of the total differences between all the countries considered. For example, 23.93% of the total difference in the reduction of the share of sustainable investments between Germany and France can be explained by differences in financial literacy. In other words, if these two countries had the same level of financial literacy, 23.93% of the gap in fee sensitivity would be closed. In the other five comparisons, differences in financial literacy are of similar importance, explaining between 18.10% and 34.97% of the total country differences in fee sensitivity. We observe the highest

[20] We derive the value of 40.27% by dividing the explained part of the country difference of 3.87 percentage points by the total difference of 9.61 percentage points.

values when comparing Germany with Poland (27.86%) and the Netherlands with Poland (34.97%). These are exactly the countries for which we observe the highest average values (Germany and the Netherlands) and the lowest average values (Poland) of financial literacy (see Table A.6). Besides financial literacy, differences in the other explanatory factors, except for expected returns, seem to explain country differences only to a small extent.

Result 2b: Differences in financial literacy account for the vast majority of the explained country differences in sensitivity to fees, while return expectations appear to play only a minor role.

In addition to the country differences in terms of fee sensitivity for sustainable investments, our analyses show some interesting similarities and differences with regard to investment motives between the countries. Table 4 shows that the expectation of higher returns on the sustainable compared to the conventional fund especially matter for German, Dutch, and Spanish respondents.[21] Risk perceptions of sustainable investments compared to the MSCI World play a role in all countries, but especially in France. In summary, our results show that financial motives do play a role in all countries, but they also reveal clear differences in the relevance of these motives.

< Table 4 here >

We also find country differences with regard to the relevance of individual preferences such as risk preferences, time preferences, or social signaling. It is therefore even more remarkable that social preferences are significantly positively related to the share invested in sustainable ETFs in all countries[22]. This result is consistent with previous studies considering sustainable investment behavior of Dutch investors (e.g. Riedl and Smeets, 2017; Bauer et al., 2021). It shows that social preferences play an important role for investment decisions, universally in all five different countries considered.

However, in addition to these similarities, we see differences between individual countries. The estimated effects of social preferences are stronger in Germany and the Netherlands than in France,

[21] As described before, we apply random effects estimations in order to account for the panel data structure of our dataset and to include explanatory variables, which are time-invariant across the eight investment decisions per respondent (e.g. age, gender, etc.).
[22] The p-value for France is 0.078.

Poland and Spain. The estimated effects for France, Poland and Spain are not significantly different from each other.

Finally, we look at the other individual characteristics. The negative correlation between Catholic affiliation and sustainable investment behavior observed in the previous section, is especially driven by countries with the highest proportion of Catholics in the sample, namely France, Poland, and Spain. With respect to the other sociodemographic variables, there are no clear patterns, except for a few weakly significant results.[23]

Result 3: Social preferences play an important role in explaining sustainable investments in all five countries. The strength of the relation varies somewhat across countries, with the highest importance in Germany and the Netherlands.

3.3 Do the experimental choices reflect real-world behavior?

We next test the external relevance of our experiment (Levitt and List, 2007; Falk and Heckman, 2009). To this end, we asked respondents whether they currently hold sustainable investments and created a dummy variable that takes the value of one if a respondent answered the question in the affirmative, and zero otherwise. We then regressed this variable on the average share of the endowment that respondents invested in sustainable ETFs in the experiment. As our full sample also contains respondents that held no investment products at the time of the survey, and thus also cannot hold the usual sustainable investment products, we consider both the full sample and the subgroup of current investors.[24]

Table 5 shows for both samples that respondents who invest a larger average share of their endowment in sustainable ETFs are significantly more likely to hold sustainable investments in real life. For instance, when considering no further control variables, current investors who on

[23] With respect to the pooled estimation in Section 3.1, we can assume that the results related to gender are driven in particular by respondents from Germany and Spain (with the estimated coefficients in the Netherlands and Poland going in the same direction, although not significant at a 10% significance level). In Poland, we see mild evidence that individuals with higher levels of education are significantly less likely to invest in sustainable investments. In France, we find a weakly significant positive effect of married individuals on the selection of a sustainable option.

[24] We denote as current investors those respondents who indicated to hold at least one of the following investment products at the time of the survey: Stocks, passively managed stock funds, actively managed stock funds, mixed funds, passively managed bond funds, actively managed bond funds, other non-fixed-income forms of investment, precious metals, and cryptocurrencies.

average invested above 75% to 100% of their experimental endowment in sustainable ETFs are 17.8 percentage points more likely to hold sustainable investments in real life than investors who have invested between 0% and 25%. This result remains stable when we control for potential further individual determinants of sustainable investment such as financial expectations[25], social preferences, or signaling.

In further regressions (see Table A.11 in Appendix A), we also control for social desirability motives captured by six items from the Balanced Inventory of Desirable Responding developed by Paulhus (1984, 1991).[26] In these cases, we also find the described significant positive relationship between experimental and reported sustainable investment behavior. Thus, our results are in line with previous studies showing that social preferences elicited in experiments are reflected in the field (e.g., Karlan, 2005; Benz and Meier, 2008; Baran, Sapienza, and Zingales, 2010; Riedl and Smeets, 2017). Together, this suggests that our findings are relevant for real-word investment behavior.

< Table 5 here >

[25] Return expectations are captured by asking the question "What returns do you expect on sustainable investments?" Respondents could choose among "much lower returns compared to conventional investments," "a little lower returns compared to conventional investments," "neither lower nor higher returns compared to conventional investments," "a little higher returns compared to conventional investments," "much higher returns compared to conventional investments," and "don't know." We construct one dummy variable for each response category, except for "neither lower nor higher returns compared to conventional investments," which serves as reference category. We capture risk perceptions concerning sustainable investments compared to conventional investments by asking respondents to indicate their agreement with the statement "Sustainable investments are riskier than conventional investments." Respondents could rate their agreement on a 7-point Likert scale ranging from 1 "fully disagree" to 7 "fully agree" or select "don't know." The dummy variable Lower risk compared to conventional investments takes the value of one if the respondent perceives sustainable investments to be less risky than conventional investments (Likert scale 1-3), and zero otherwise. The dummy variable Higher risk compared to conventional investments takes the value of one if the respondent perceives sustainable investments to be riskier than conventional investments (Likert scale 5-7), and zero otherwise. The medium category (Likert scale 4) serves as reference category.

[26] We included the following six items from the Balanced Inventory of Desirable Responding (BIDR) developed by Paulhus (1984, 1991) in a random order: a) "My first impression of people usually turns out to be right," b) "I am very confident of my judgement," c) "I always know why I like things," d) "I have received too much change from a salesperson without telling him or her," e) "I am always honest towards other people," and f) "There have been occasions when I have taken ad-vantage of someone." Items a) to c) capture self-deceptive enhancement and items d) to f) impression management. Respondents could rate their agreement with each statement on a five-point Likert scale ranging from "not at all" (Likert scale one) to "completely" (Likert scale five). After reversing the negative statements d) and f), we give one point for every four or five. The variables *Self-Deceptive Enhancement* and *Impression Management* are the sum of the points for the corresponding three items. Thus, both variables can take values from zero to three.

4. Conclusion

We investigate whether investors' sensitivity to fees on sustainable investments can be explained by social preferences or financial literacy. We further ask whether the drivers of fee sensitivity are context-dependent and whether they vary across different European countries. We empirically analyze these questions, based on data from a large scale lab-in-the-field experiment among experienced household financial decision makers that have been conducted in France, Germany, the Netherlands, Poland, and Spain during May to July 2021. We find that social preferences play an important role in individual sustainable investment behavior in all five countries. Investors who are willing to give to others without expecting anything in return invest a larger fraction of their money in sustainable funds. However, social preferences do not explain how sensitively investors react to fees. Rather, investors with low financial literacy react insensitively to higher fees on sustainable investments. This suggest that investors pay high fees on sustainable investments because they do not fully understand the negative consequences for their financial returns.

We also find that the sensitivity to higher fees on sustainable funds varies across countries and is highest in the Netherlands and Germany. Interestingly, our data show that average financial literacy is higher in exactly these two countries than in the other three countries, France, Poland, and Spain. Indeed, our results based on Oaxaca-Blinder decompositions show that country differences in financial knowledge explain most of the country differences.

Our results have important implications for recently introduced financial regulation. In the European Union (EU), a recent amendment to the Markets in Financial Instruments Directive II (MiFID II) requires financial institutions to ask clients about their sustainable investment preferences. The European Securities and Markets Authority (ESMA) and consumer organizations are concerned that financial institutions can use this knowledge of their clients' sustainable investment preferences to charge higher fees (ESMA, 2019). Our results suggest that this is a particular concern for individuals with low financial literacy. These individuals do not make a conscious choice to pay higher fees because they want to contribute to a better world, but they simply do not understand the impact of higher fees for their net returns. The regulation will likely have different consequences in the various European countries, depending on the average financial literacy. Investors in France, Spain and Poland could bear the risk of being charged particularly high fees. Future work can identify how specific financial education programs could be designed

across countries to help investors to better understand the importance of fees (Hastings, Madrian, and Skimmyhorn, 2013; Lusardi and Mitchell, 2014; Kaiser et al., 2020).

Our results also have important implications for asset prices and speak against models in financial theory postulating that investors' decisions are grounded solely on risk-return considerations. In contrast, our results are in line with theoretical models considering social preferences and the integration of corporate externalities as potential drivers of investment decisions (e.g., Heinkel et al., 2001; Fama and French, 2007; Gollier and Pouget, 2022; Broccardo et al., 2022; Pastor et al., 2021; Pedersen et al., 2021). For instance, recent theory by Pastor et al. (2021) assumes that investors with stronger tastes for ESG are willing to pay more for assets that generate positive externalities for society. This willingness to pay for stocks of sustainable firms could translate into lower capital costs for sustainable firms.

Future research could investigate sustainable investment behavior in other European countries and different continents, as sustainable investments are becoming increasingly important around the world.

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Tables

TABLE 1 – SENSITIVITY TO FEES ON SUSTAINABLE INVESTMENTS

Dependent variable:	Share of endowment invested in sustainable ETFs		
Model:	(1)	(2)	(3)
Fee scenarios			
Fees on sustainable ETF: 0.9%	-3.094***	-3.025***	-3.025***
	(0.301)	(0.309)	(0.309)
Fees on sustainable ETF: 1.6%	-5.158***	-5.142***	-5.142***
	(0.358)	(0.367)	(0.367)
Fees on sustainable ETF: 2.3%	-7.763***	-7.790***	-7.790***
	(0.403)	(0.414)	(0.414)
Preferences			
Social preferences	--	0.850***	0.918***
		(0.129)	(0.129)
Risk preferences	--	0.005	-0.093
		(0.158)	(0.158)
Time preferences	--	0.565***	0.560***
		(0.172)	(0.171)
Signaling	--	-0.959***	-0.870***
		(0.191)	(0.192)
Return expectations			
Much higher returns compared to MSCI World	--	9.738***	9.524***
		(1.079)	(1.081)
A little higher returns compared to MSCI World	--	5.594***	5.528***
		(0.696)	(0.695)
A little lower returns compared to MSCI World	--	-1.370*	-1.262
		(0.792)	(0.791)
Much lower returns compared to MSCI World	--	-8.179***	-8.185***
		(1.397)	(1.394)
Do not know returns	--	-1.810	-1.814
		(1.129)	(1.129)
Risk perceptions			
Higher risk compared to MSCI World	--	-2.570**	-2.642**
		(0.691)	(0.692)
Lower risk compared to MSCI World	--	4.408***	4.419***
		(0.838)	(0.837)
Do not know risk	--	-0.947	-1.113
		(1.192)	(1.190)

TABLE 1 (CONTINUED) – SENSITIVITY TO FEES ON SUSTAINABLE INVESTMENTS

Individual characteristics			
Financial literacy	--	-2.085***	-1.796***
		(0.375)	(0.377)
Age	--	-0.022	-0.022
		(0.022)	(0.022)
Female	--	2.255***	2.207***
		(0.641)	(0.640)
High education	--	-0.829	-1.064*
		(0.630)	(0.639)
Married	--	1.486**	1.135
		(0.705)	(0.705)
High income	--	-0.018	0.055
		(0.927)	(0.932)
Low income	--	-0.422	-0.391
		(0.943)	(0.955)
Do not know or report income	--	0.134	0.132
		(1.382)	(1.394)
Catholic	--	-3.340***	-3.160***
		(0.707)	(0.744)
Protestant	--	-2.159	-0.475
		(1.347)	(1.381)
Other religion	--	-1.465	-1.343
		(1.624)	(1.634)
Do not report religion	--	-1.096	-0.738
		(0.949)	(0.946)
Germany	--	--	-6.953***
			(1.042)
Netherlands	--	--	-1.790*
			(1.036)
Poland	--	--	-2.728***
			(0.974)
Spain	--	--	-3.058***
			(0.945)
Experimental controls			
MSCI World Climate Change Index ETF	--	2.136***	2.144***
		(0.359)	(0.359)
Saw ESG Screened ETF first	--	2.610***	2.580***
		(0.607)	(0.604)
Second decision	--	-1.070***	-1.070***
		(0.346)	(0.346)
Third decision	--	-0.537	-0.537
		(0.390)	(0.390)
Fourth decision	--	-1.373***	-1.373***
		(0.406)	(0.406)

TABLE 1 (CONTINUED) – SENSITIVITY TO FEES ON SUSTAINABLE INVESTMENTS

Fifth decision	--	-0.296	-0.294
		(0.499)	(0.499)
Sixth decision	--	-0.874*	-0.872*
		(0.499)	(0.499)
Seventh decision	--	-1.367***	-1.365***
		(0.490)	(0.490)
Eighth decision	--	-1.135**	-1.133**
		(0.491)	(0.491)
Constant	55.788***	52.552***	54.850***
	(0.247)	(2.215)	(2.266)
Respondents	5,162	4,901	4,901
Decisions	41,296	39,208	39,208
R^2	0.009	0.077	0.082
Individual fixed effects	Yes	No	No

This table reports the results of fixed effects (column 1) and random effects estimations (column 2 and 3) in linear regression models based on data from the full sample, pooling all investment decisions from all respondents. The dependent variable captures the share of the endowments respondents invested in sustainable ETFs (i.e. either ETFs based on the MSCI World ESG Screened Index or ETFs based on the MSCI World Climate Change Index). The dummy variables *Fees on sustainable ETF: 0.9%*, *Fees on sustainable ETF: 1.6%*, and *Fees on sustainable ETF: 2.3%* take the value of one to indicate the amount of fees charged on the sustainable ETF, and zero otherwise. Consequently, the (estimated) constant terms represent the reference scenario where the amount of fees charged on the sustainable ETF is 0.2%. In model 2, we consider individual preferences, return expectations, risk perceptions, but also control for other individual characteristics, and experimental variables as further explanatory variables. In model 3, we additionally include dummy variables to control for potential country differences (base category: France). All variables are defined in Section 2.3. R^2 indicates the squared correlation between the observed and fitted values, reported as *overall* R^2 when using the Stata command xtreg (Stata version 15.1). *** (**, *) indicates that the corresponding estimated parameter is significantly different from zero at the 1% (5%, 10%) significance level (cluster-robust standard errors in parentheses).

TABLE 2 – COUNTRY DIFFERENCES IN FEE SENSITIVITY

Dependent variable:	Share of endowment invested in sustainable ETFs
Countries (references category: France)	
Germany	-2.165**
	(1.003)
Netherlands	2.371**
	(1.005)
Poland	-4.675***
	(0.885)
Spain	-3.964***
	(0.917)
Fees on sustainable ETF: 0.9%	-0.702
	(0.693)
Fees on sustainable ETF: 0.9% * Germany	-5.839***
	(0.953)
Fees on sustainable ETF: 0.9% * Netherlands	-4.813***
	(0.991)
Fees on sustainable ETF: 0.9% * Poland	-0.334
	(0.959)
Fees on sustainable ETF: 0.9% * Spain	-1.160
	(0.938)
Fees on sustainable ETF: 1.6%	-2.778***
	(0.814)
Fees on sustainable ETF: 1.6% * Germany	-7.159***
	(1.102)
Fees on sustainable ETF: 1.6% * Netherlands	-5.949***
	(1.196)
Fees on sustainable ETF: 1.6% * Poland	0.738
	(1.119)
Fees on sustainable ETF: 1.6% * Spain	0.145
	(1.116)
Fees on sustainable ETF: 2.3%	-4.441***
	(0.921)
Fees on sustainable ETF: 2.3% * Germany	-9.457***
	(1.246)
Fees on sustainable ETF: 2.3% * Netherlands	-8.173***
	(1.356)
Fees on sustainable ETF: 2.3% * Poland	0.118
	(1.260)
Fees on sustainable ETF: 2.3% * Spain	0.493
	(1.246)
Constant	57.535***
	(0.662)
Respondents	5,162
Decisions	41,296
R^2	0.019
Individual fixed effects	No

This table reports the results of random effects estimations in linear regression models based on data from different country samples. The dependent variable captures the share of the endowments respondents invested in sustainable ETFs (i.e. either ETFs based on the MSCI World ESG Screened Index or ETFs based on the MSCI World Climate Change Index). The dummy variables "fees on sustainable ETF: 0.9%," "fees on sustainable ETF: 1.6%," and "fees on sustainable ETF: 2.3%" take the value one to indicate the amount of fees charged on the sustainable ETF, and zero otherwise. We additionally include interaction terms between the aforementioned dummy variables for the different fee scenarios and country dummy variables, which take the value of one if the respondent's main place of residence is in Germany, the Netherlands, Poland, or Spain, and zero otherwise. The base category is France. Individual fixed effects are considered at the level of respondents. R^2 indicates the squared correlation between the observed and fitted values, reported as *overall* R^2 when using the Stata command xtreg (Stata version 15.1). *** (**, *) indicates that the corresponding estimated parameter is significantly different from zero at the 1% (5%, 10%) significance level (cluster-robust standard errors in parentheses).

TABLE 3 – EXPLANATION OF COUNTRY DIFFERENCES IN FEE SENSITIVITY

Dependent variable:	Difference in share of endowment invested in sustainable ETFs between 0.20% and 2.30% fee scenarios											
Countries:	Germany						Netherlands					
	France		Poland		Spain		France		Poland		Spain	
Estimates:	Parameter	Share	Parameter	Share	Parameter	Share	Parameter	Share	Parameter	Share	Parameter	Share
Differences												
Total difference	-9.61*** (1.03)		-9.70*** (1.00)		-9.69*** (0.99)		-8.49*** (1.11)		-8.58*** (1.08)		-8.55*** (1.07)	
Explained part of difference	-3.87*** (0.58)	40.27%	-3.15*** (0.74)	32.51%	-2.29*** (0.58)	23.68%	-4.22*** (0.61)	49.71%	-3.15*** (0.82)	36.71%	-2.34*** (0.59)	27.37%
Contributions of variables to the explained part of the differences												
Main channels												
Social preferences	-0.06 (0.15)	0.62%	0.05 (0.11)	-0.52%	0.04 (0.14)	-0.41%	0.10 (0.09)	-1.18%	0.08 (0.05)	-0.93%	0.13 (0.08)	-1.52%
Financial literacy	-2.30*** (0.34)	23.93%	-2.70*** (0.33)	27.86%	-1.75*** (0.26)	18.10%	-2.65*** (0.40)	31.21%	-3.00*** (0.38)	34.97%	-2.01*** (0.30)	23.51%
Preferences												
Risk preferences	-0.57*** (0.16)	5.93%	-0.35*** (0.12)	3.61%	-0.12 (0.08)	1.24%	-0.14* (0.08)	1.65%	0.07 (0.08)	-0.82%	0.02 (0.03)	-0.23%
Time preferences	-0.00 (0.02)	0.00%	0.03 (0.04)	-0.31%	0.03 (0.04)	-0.31%	0.02 (0.04)	-0.24%	0.00 (0.02)	0.00%	0.13* (0.07)	-1.52%
Signaling	-0.10 (0.08)	1.04%	0.08 (0.07)	-0.83%	0.29** (0.15)	-3.00%	-0.01 (0.02)	0.12%	0.25** (0.11)	-2.91%	0.28 (0.22)	-3.27%
Return expectations												
Much higher returns compared to MSCI World	-0.73*** (0.22)	7.60%	-0.20** (0.09)	2.06%	-0.37*** (0.12)	3.83%	-0.69*** (0.23)	8.13%	-0.18* (0.10)	2.10%	-0.37*** (0.12)	4.33%
A little higher returns compared to MSCI World	-0.13* (0.08)	1.35%	-0.07 (0.07)	0.72%	-0.27* (0.14)	2.79%	0.15* (0.09)	-1.77%	0.21** (0.11)	-2.45%	-0.03 (0.04)	0.35%
A little lower returns compared to MSCI World	0.55** (0.25)	-5.72%	0.40* (0.21)	-4.13%	0.15 (0.15)	-1.55%	-0.32* (0.16)	3.77%	-0.28** (0.13)	3.26%	-0.19** (0.09)	2.22%
Much lower returns compared to MSCI World	-0.02 (0.04)	0.21%	-0.04 (0.06)	0.41%	-0.00 (0.03)	0.00%	0.00 (0.02)	0.00%	-0.01 (0.02)	0.12%	0.00 (0.01)	0.00%
Do not know returns	-0.09 (0.06)	0.94%	-0.26 (0.21)	2.68%	0.07 (0.05)	-0.72%	0.06 (0.09)	-0.71%	0.29 (0.25)	-3.38%	-0.02 (0.03)	0.23%

TABLE 3 (CONTINUED) – EXPLANATION OF COUNTRY DIFFERENCES IN FEE SENSITIVITY

Risk perceptions												
Higher risk compared to MSCI World	0.16*	-1.66%	-0.16*	1.65%	0.39**	-4.03%	-0.04	0.47%	-0.10	1.17%	-0.03	0.35%
	(0.09)		(0.09)		(0.18)		(0.07)		(0.07)		(0.17)	
Lower risk compared to MSCI World	-0.39***	4.06%	-0.52***	5.37%	-0.56***	5.79%	-0.16	1.88%	-0.36***	4.20%	-0.32**	3.74%
	(0.13)		(0.15)		(0.15)		(0.11)		(0.12)		(0.14)	
Do not know risk	0.15	-1.56%	0.32***	-3.30%	-0.19**	1.96%	-0.05	0.59%	0.09	-1.05%	-0.04	0.47%
	(0.10)		(0.12)		(0.09)		(0.11)		(0.12)		(0.07)	
Individual characteristics												
Age	0.09	-0.94%	-0.05	0.52%	0.04	-0.41%	0.13	-1.53%	-0.06	0.70%	0.11	-1.29%
	(0.08)		(0.09)		(0.18)		(0.11)		(0.12)		(0.22)	
Female	-0.07	0.73%	-0.00	0.00%	-0.17	1.76%	-0.11*	1.30%	-0.13	1.52%	-0.30**	3.51%
	(0.06)		(0.11)		(0.12)		(0.06)		(0.12)		(0.13)	
High education	-0.03	0.31%	0.51***	-5.26%	0.16	-1.65%	-0.66***	7.77%	-0.07	0.82%	-0.02	0.23%
	(0.06)		(0.18)		(0.17)		(0.25)		(0.05)		(0.04)	
Married	-0.11	1.14%	-0.13	1.34%	0.07	-0.72%	0.00	0.00%	-0.01	0.12%	-0.05	0.58%
	(0.12)		(0.13)		(0.08)		(0.00)		(0.01)		(0.05)	
High income	-0.00	0.00%	0.08	-0.83%	0.07	-0.72%	0.03	-0.35%	0.01	-0.12%	-0.02	0.23%
	(0.01)		(0.06)		(0.09)		(0.05)		(0.03)		(0.06)	
Low income	-0.01	0.10%	-0.11	1.14%	-0.01	0.10%	-0.45**	5.30%	0.11	-1.28%	-0.02	0.23%
	(0.04)		(0.28)		(0.13)		(0.19)		(0.15)		(0.04)	
Do not know or report income	-0.02	0.21%	-0.03	0.31%	0.04	-0.41%	0.44*	-5.18%	0.13	-1.52%	0.46**	-5.38%
	(0.06)		(0.03)		(0.05)		(0.24)		(0.17)		(0.22)	
Catholic	-0.01	0.10%	0.13	-1.34%	-0.19	1.96%	-0.18	2.12%	-0.59	6.88%	-0.50	5.85%
	(0.08)		(0.57)		(0.22)		(0.17)		(0.69)		(0.32)	
Protestant	-0.17	1.77%	-0.15	1.55%	-0.07	0.72%	0.25	-2.94%	0.32	-3.73%	0.34	-3.98%
	(0.29)		(0.31)		(0.29)		(0.22)		(0.26)		(0.23)	
Other religion	-0.01	0.10%	0.01	-0.10%	0.01	-0.10%	-0.01	0.12%	-0.02	0.23%	0.01	-0.12%
	(0.02)		(0.07)		(0.04)		(0.02)		(0.08)		(0.05)	
Do not report religion	0.02	-0.21%	0.02	-0.21%	0.03	-0.31%	0.07	-0.82%	0.11	-1.28%	0.09	-1.05%
	(0.03)		(0.06)		(0.07)		(0.05)		(0.09)		(0.10)	
Experimental controls												
Saw ESG Screened ETF first	-0.03	0.31%	-0.02	0.21%	-0.00	0.00%	-0.01	0.12%	-0.00	0.00%	0.02	-0.23%
	(0.04)		(0.03)		(0.03)		(0.04)		(0.03)		(0.03)	
Respondents	1,897		1,958		1,968		1,924		1,985		1,995	

This table reports the results of Oaxaca-Blinder decompositions of country differences in the sensitivity to fees charged on sustainable ETFs. Fee sensitivity is measured by the difference in individual investments in sustainable ETFs in the 0.2% and 2.3% fee scenario. The estimated parameters for the decomposition are from a pooled regression model. The shares indicate how much of the total country differences can be explained by the corresponding explanatory variable. For example, the estimated coefficient for financial literacy of -2.30 in the first column implies that differences in financial literacy between French and German respondents explain 2.30 percentage points (and thus 23.93%) of the total difference between German and French respondents in the share of sustainable investments (-9.61 percentage points). *** (**, *) indicates that the estimated parameters are significantly different from zero at the 1% (5%, 10%) significance level (standard errors in parentheses).

TABLE 4 – SENSITIVITY TO FEES ON SUSTAINABLE INVESTMENTS ACROSS COUNTRIES

Dependent variable:	Share of endowment invested in sustainable ETFs				
Country:	France	Germany	Netherlands	Poland	Spain
Fee scenarios					
Fees on sustainable ETF: 0.9%	-0.509	-6.609***	-5.626***	-0.728	-1.823***
	(0.715)	(0.665)	(0.728)	(0.680)	(0.648)
Fees on sustainable ETF: 1.6%	-2.539***	-9.833***	-8.821***	-1.737**	-3.039***
	(0.841)	(0.757)	(0.895)	(0.786)	(0.783)
Fees on sustainable ETF: 2.3%	-4.248***	-13.865***	-12.777***	-4.169***	-4.188***
	(0.954)	(0.855)	(1.020)	(0.882)	(0.868)
Preferences					
Social preferences	0.509*	1.154***	1.522***	0.839***	0.698**
	(0.289)	(0.312)	(0.321)	(0.253)	(0.272)
Risk preferences	0.074	0.093	-0.701*	0.239	-0.132
	(0.357)	(0.361)	(0.409)	(0.289)	(0.350)
Time preferences	0.212	1.014***	0.483	-0.136	0.951***
	(0.367)	(0.389)	(0.546)	(0.308)	(0.358)
Signaling	-0.879**	-2.405***	-0.606	0.074	-0.771*
	(0.399)	(0.461)	(0.510)	(0.389)	(0.402)
Return expectations					
Much higher returns compared to MSCI World	5.878***	13.725***	13.002***	2.745	13.453***
	(2.027)	(2.639)	(2.608)	(2.521)	(2.442)
A little higher returns compared to MSCI World	1.992	9.119***	8.443***	3.157**	4.870***
	(1.613)	(1.537)	(1.485)	(1.573)	(1.522)
A little lower returns compared to MSCI World	-2.345	0.501	-0.724	-2.842*	-0.821
	(2.000)	(1.663)	(1.651)	(1.686)	(1.870)
Much lower returns compared to MSCI World	-11.157***	-6.451**	-7.561**	-6.919***	-9.488***
	(3.469)	(3.040)	(3.110)	(2.571)	(3.335)
Do not know returns	1.335	-1.691	-4.079	-1.118	-5.974**
	(2.237)	(2.597)	(3.354)	(1.999)	(2.940)
Risk perceptions					
Higher risk compared to MSCI World	-2.187	-0.871	-3.475**	-2.651*	-4.066**
	(1.605)	(1.534)	(1.655)	(1.370)	(1.602)
Lower risk compared to MSCI World	8.224***	4.229**	4.804**	3.259**	0.801
	(2.166)	(1.769)	(1.964)	(1.575)	(1.978)
Do not know risk	-1.295	0.783	-1.771	-2.018	0.050
	(2.507)	(2.196)	(3.292)	(2.412)	(2.536)

TABLE 4 (CONTINUED) – SENSITIVITY TO FEES ON SUSTAINABLE INVESTMENTS ACROSS COUNTRIES

Individual characteristics					
Financial literacy	-0.521	-3.301***	-1.452	-1.730**	-1.577**
	(0.816)	(1.003)	(0.979)	(0.759)	(0.748)
Age	0.025	-0.001	-0.053	-0.010	-0.037
	(0.047)	(0.051)	(0.055)	(0.045)	(0.050)
Female	0.447	3.244**	2.092	2.049	2.361*
	(1.394)	(1.641)	(1.682)	(1.260)	(1.317)
High education	-0.166	-1.832	1.974	-2.166*	-1.624
	(1.458)	(1.644)	(1.516)	(1.253)	(1.310)
Married	2.839*	0.825	-1.495	2.267	2.142
	(1.645)	(1.667)	(1.869)	(1.410)	(1.392)
High income	-1.661	2.612	0.783	-0.138	1.052
	(2.177)	(2.784)	(2.773)	(1.525)	(1.975)
Low income	-1.106	0.873	2.788	-1.904	-0.635
	(2.206)	(2.794)	(2.779)	(1.709)	(1.989)
Do not know or report income	-5.016	1.298	4.770	-3.799	1.485
	(3.539)	(3.686)	(3.193)	(2.672)	(3.111)
Catholic	-5.213***	2.632	-2.388	-3.237**	-5.705***
	(1.637)	(1.969)	(1.985)	(1.641)	(1.447)
Protestant	-1.469	3.657*	-2.881	3.422	4.065
	(3.243)	(2.140)	(2.533)	(7.657)	(5.031)
Other religion	-6.202**	5.085	3.905	-10.084**	-1.144
	(3.061)	(3.675)	(3.431)	(5.009)	(3.721)
Do not report religion	-4.677**	0.956	1.715	0.613	-1.227
	(1.912)	(2.116)	(2.142)	(2.360)	(2.067)
Experimental controls					
MSCI World Climate Change Index ETF	1.546*	2.156***	1.833**	2.167***	2.786***
	(0.849)	(0.743)	(0.814)	(0.800)	(0.810)
Saw ESG Screened ETF first	2.306*	4.830***	3.972***	0.537	1.734
	(1.341)	(1.445)	(1.481)	(1.197)	(1.275)
Second decision	-1.720**	-1.241	-1.614**	-0.254	-0.411
	(0.787)	(0.782)	(0.780)	(0.788)	(0.722)
Third decision	-1.390	0.341	-1.426	-0.908	0.784
	(0.897)	(0.841)	(0.915)	(0.844)	(0.840)
Fourth decision	-0.845	-0.995	-2.992***	-1.648*	-0.362
	(0.911)	(0.918)	(0.932)	(0.891)	(0.880)
Fifth decision	0.471	1.045	-1.620	-1.112	-0.223
	(1.149)	(1.084)	(1.174)	(1.091)	(1.086)
Sixth decision	0.387	-0.025	-2.173*	-1.838*	-0.689
	(1.154)	(1.071)	(1.152)	(1.105)	(1.095)
Seventh decision	-0.115	-0.458	-2.246**	-1.862*	-1.990*
	(1.144)	(1.039)	(1.118)	(1.099)	(1.077)
Eighth decision	-0.384	-0.062	-1.916*	-2.827***	-0.290
	(1.169)	(1.055)	(1.122)	(1.074)	(1.069)

TABLE 4 (CONTINUED) – SENSITIVITY TO FEES ON SUSTAINABLE INVESTMENTS ACROSS COUNTRIES

Constant	54.593*** (5.170)	44.906*** (5.414)	52.691*** (6.436)	52.642*** (4.428)	50.125*** (4.548)
Respondents	948	949	976	1,009	1,019
Decisions	7,584	7,592	7,808	8,072	8,152
R^2	0.060	0.141	0.124	0.054	0.074

This table reports the results of random effects estimations in linear regression models based on data from the five different regions. The dependent variable captures the share of the endowments respondents invested in sustainable ETFs (i.e. either ETFs based on the MSCI World ESG Screened Index or ETFs based on the MSCI World Climate Change Index). The dummy variables *Fees on sustainable ETF: 0.9%*, *Fees on sustainable ETF: 1.6%*, and *Fees on sustainable ETF: 2.3%* take the value of one to indicate the amount of fees charged on the sustainable ETF, and zero otherwise. Consequently, the (estimated) constant terms represent the reference scenario where the amount of fees charged on the sustainable ETF is 0.2%. We additionally control for individual preferences, return expectations, risk perceptions, other individual characteristics, and experimental variables. All variables are defined in Section 2.3. R^2 indicates the squared correlation between the observed and fitted values, reported as *overall* R^2 when using the Stata command xtreg (Stata version 15.1). *** (**, *) indicates that the corresponding estimated parameter is significantly different from zero at the 1% (5%, 10%) significance level (cluster-robust standard errors in parentheses).

TABLE 5 – GENERALIZABILITY OF EXPERIMENTAL DECISIONS

Dependent variable:	Respondent reports to hold sustainable investments in real life			
Sample:	All	Only current investors	All	Only current investors
	(1)	(2)	(3)	(4)
Average share invested in sustainable ETFs in the experiment (reference category: 0% to 25%)				
Above 25% to 50%	0.032*	0.049**	0.049***	0.055**
	(0.019)	(0.025)	(0.018)	(0.025)
Above 50% to 75%	0.045**	0.071***	0.045**	0.057**
	(0.019)	(0.026)	(0.019)	(0.026)
Above 75% to 100%	0.114***	0.178***	0.088***	0.126***
	(0.025)	(0.034)	(0.024)	(0.032)
Preferences				
Social preferences	--	--	0.009***	0.013***
			(0.002)	(0.003)
Risk preferences	--	--	0.012***	0.008**
			(0.003)	(0.004)
Time preferences	--	--	0.012***	0.016***
			(0.003)	(0.004)
Signaling	--	--	0.026***	0.026***
			(0.003)	(0.005)
Return expectations				
Much higher returns compared to conventional investments	--	--	0.021	0.059*
			(0.022)	(0.032)
A little higher returns compared to conventional investments	--	--	0.019	0.036*
			(0.014)	(0.020)
A little lower returns compared to conventional investments	--	--	-0.060***	-0.087***
			(0.014)	(0.020)
Much lower returns compared to conventional investments	--	--	-0.035	-0.049
			(0.022)	(0.031)
Do not know returns	--	--	-0.089***	-0.120***
			(0.022)	(0.034)
Risk perceptions				
Higher risk compared to conventional investments	--	--	0.016	0.024
			(0.014)	(0.020)
Lower risk compared to conventional investments	--	--	0.031**	0.045**
			(0.014)	(0.020)
Do not know risk	--	--	-0.223***	-0.255***
			(0.033)	(0.044)

TABLE 5 (CONTINUED) – GENERALIZABILITY OF EXPERIMENTAL DECISIONS

Individual characteristics				
Financial literacy	--	--	0.004 (0.007)	-0.001 (0.010)
Age	--	--	-0.000 (0.000)	0.000 (0.001)
Female	--	--	-0.019* (0.011)	-0.016 (0.016)
High education	--	--	0.054*** (0.011)	0.050*** (0.015)
Married	--	--	0.011 (0.012)	0.020 (0.017)
High income	--	--	-0.011 (0.016)	-0.026 (0.022)
Low income	--	--	-0.044*** (0.017)	-0.052** (0.024)
Do not know or report income	--	--	-0.069*** (0.025)	-0.061* (0.036)
Catholic	--	--	0.013 (0.013)	0.009 (0.018)
Protestant	--	--	-0.022 (0.022)	-0.019 (0.031)
Other religion	--	--	0.016 (0.026)	0.003 (0.037)
Do not report religion	--	--	0.017 (0.017)	0.005 (0.024)
Germany	--	--	0.031* (0.019)	0.042 (0.026)
Netherlands	--	--	0.082*** (0.019)	0.114*** (0.026)
Poland	--	--	-0.073*** (0.016)	-0.072*** (0.024)
Spain	--	--	-0.033** (0.016)	-0.038 (0.024)
Respondents	5,162	3,250	4,901	3,124

This table reports, based on binary probit models, the estimates of average marginal and discrete probability effects of continuous and discrete explanatory variables, respectively. The dependent variable is a dummy variable that takes the value of one if a respondent reported to hold sustainable investments in real life, and zero otherwise. As explanatory variables, we consider the dummy variables *Above 25% to 50%*, *Above 50% to 75%*, and *Above 75% to 100%* that take the value of one if a respondent's average share of endowment invested in sustainable ETFs in the experiment (in %) falls into the respective interval, and zero otherwise. We control for return expectations, risk perceptions, individual preferences, other individual characteristics, and country-fixed effects. Our measures for return expectations and risk perceptions are defined in footenote 25. All further variables are defined in Section 2.3. The subsample of current investors only contains respondents who reported to hold at least one of the following investment products: Stocks, passively managed stock funds, actively managed stock funds, mixed funds, passively managed bond funds, actively managed bond funds, other non-fixed-income forms of investment, precious metals, and cryptocurrencies. *** (**, *) indicates that the estimated average probability effects are significantly different from zero at the 1% (5%, 10%) significance level (standard errors in parentheses).

Figures

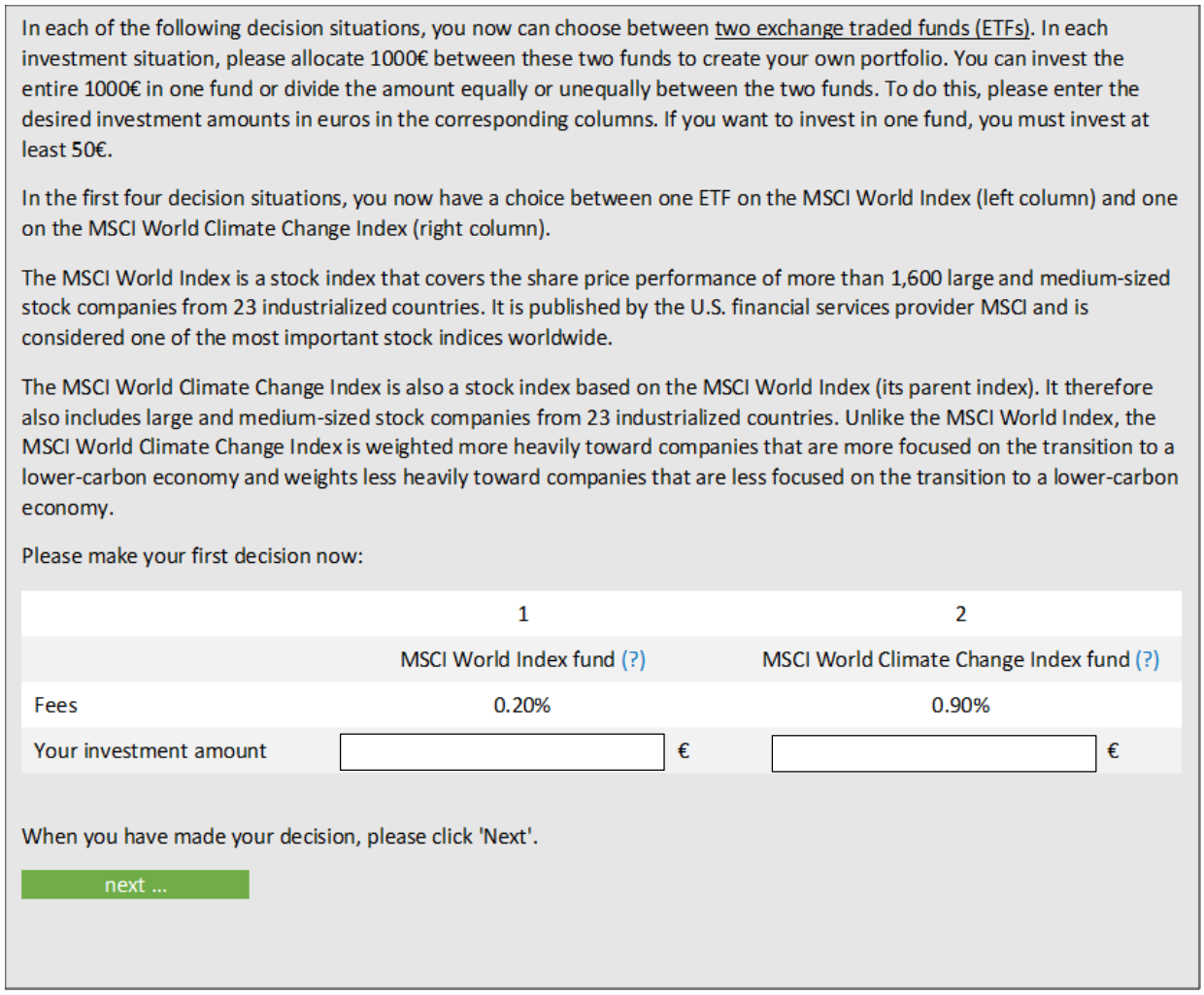


Figure 1: Screenshot of an exemplary choice set (translated into English)
This figure shows a screenshot of an exemplary first investment decision between an ETF based on the MSCI World Index with fees of 0.20% and an ETF based on the MSCI World Climate Change Index with fees of 0.2%. The upper part comprises a description of the first four investment decisions.

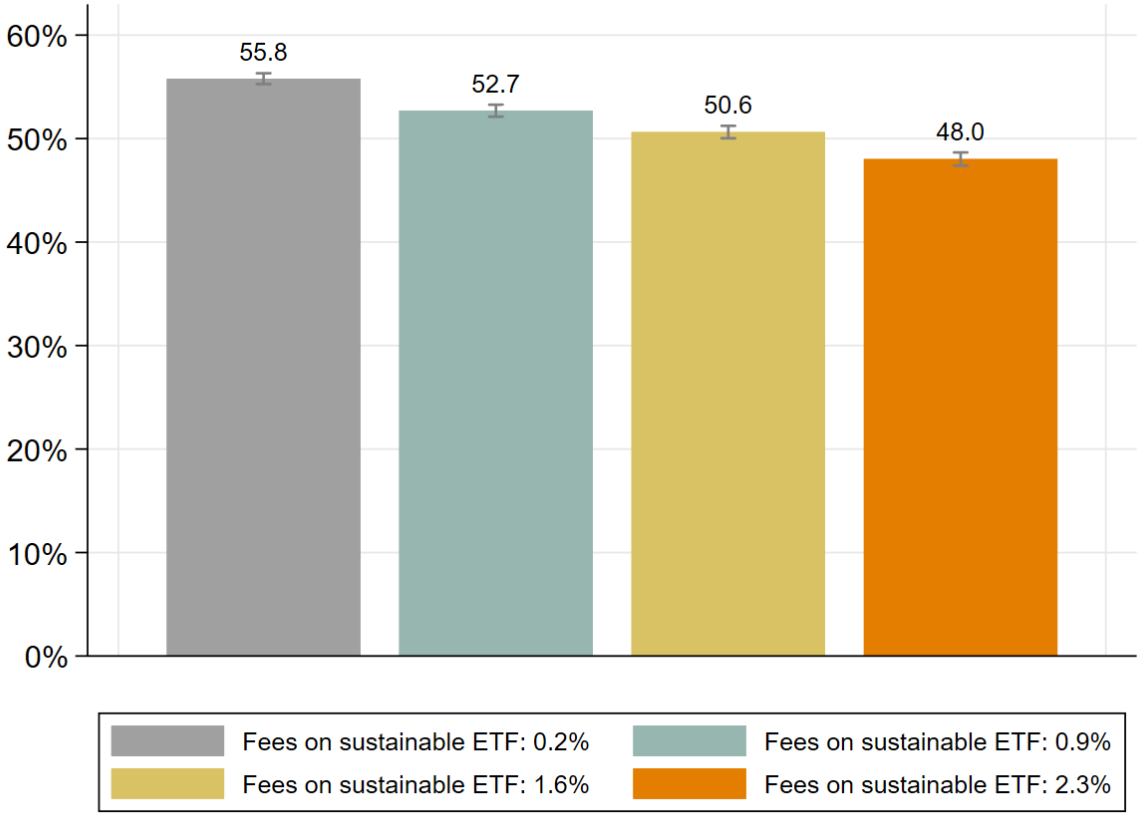


Figure 2: Investments in sustainable ETFs (full sample)
This graph shows the shares of the endowment respondents invested on average in sustainable ETFs, i.e. either in ETFs based on the MSCI World ESG Screened Index or in ETFs based on the MSCI World Climate Change Index, in the four different fee scenarios. Error bars represent 95% confidence intervals.

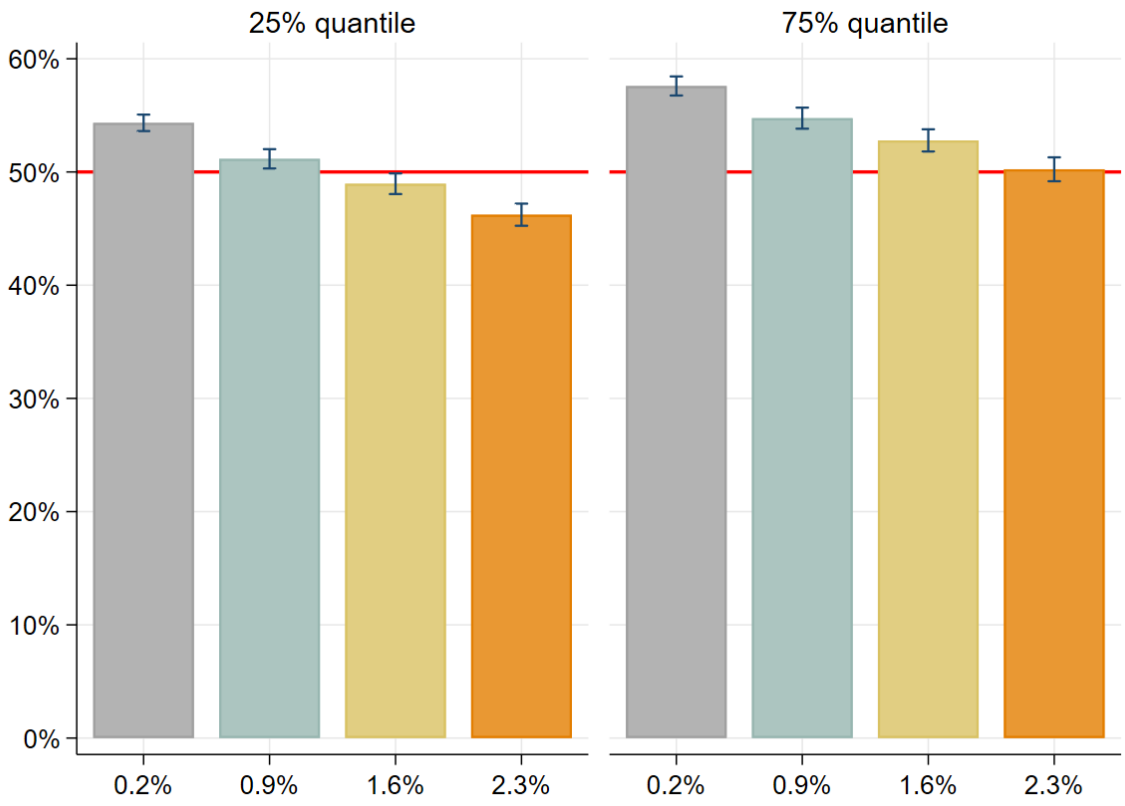


Figure 3: Fee sensitivity across different levels of social preferences
This graph shows the predicted shares of the endowment respondents invested on average in sustainable ETFs, i.e. either in ETFs based on the MSCI World ESG Screened Index or in ETFs based on the MSCI World Climate Change Index, in the four different fee scenarios at 25% and 75% quantiles of the sample distribution for social preferences, respectively. Social preferences are measured on a Likert-scale ranging from 0 to 10. The 25% quantile refers to a score of 5 and the 75% to a score of 9. Error bars represent 95% confidence intervals.

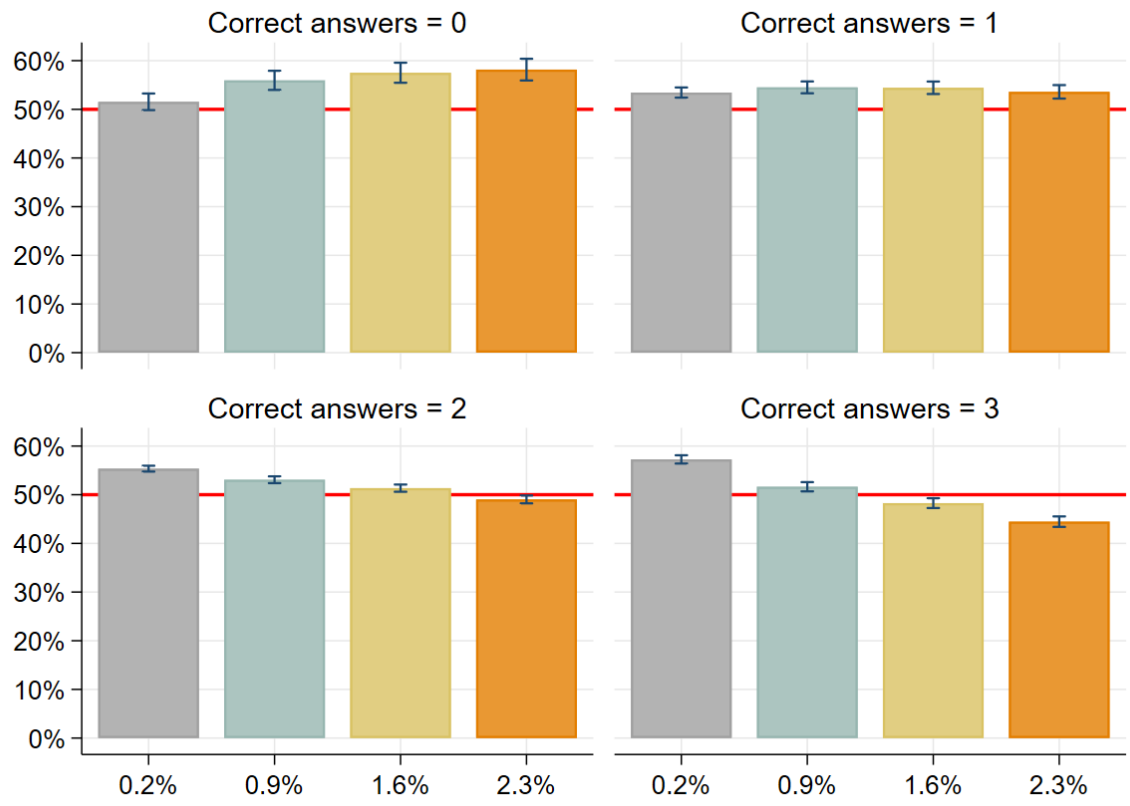


Figure 4: Fee sensitivity across different levels of financial literacy
This graph shows the predicted shares of the endowment respondents invested on average in sustainable ETFs, i.e. either in ETFs based on the MSCI World ESG Screened Index or in ETFs based on the MSCI World Climate Change Index, in the four different fee scenarios at different levels of financial literacy. Financial literacy is measured by counting the correct answers to three quiz questions. A higher number of correct answers indicates higher levels of financial literacy. Error bars represent 95% confidence intervals.

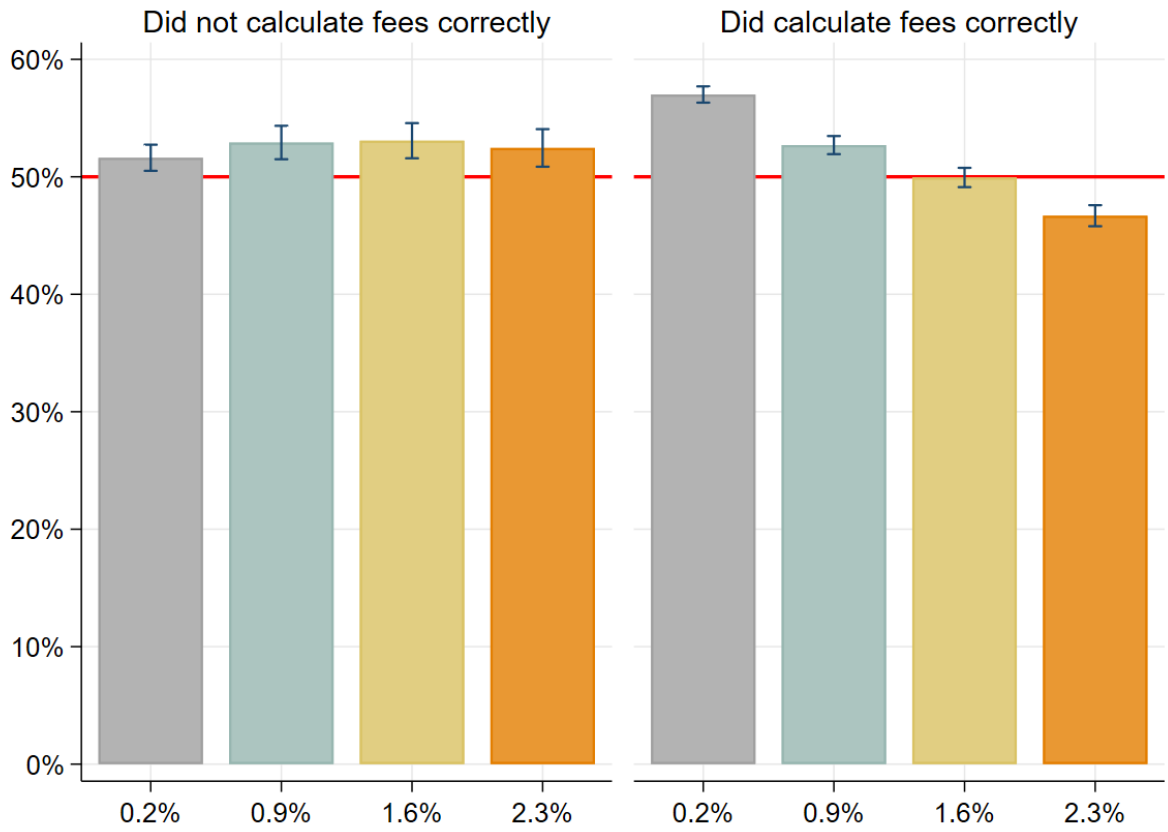


Figure 5: Fee sensitivity and understanding how to calculate fees
This graph shows the predicted shares of the endowment respondents invested on average in sustainable ETFs, i.e. either in ETFs based on the MSCI World ESG Screened Index or in ETFs based on the MSCI World Climate Change Index, in the four different fee scenarios for persons who do not understand how to calculate fees correctly, and those who do. A higher number of correct answers indicates higher levels of financial literacy. Error bars represent 95% confidence intervals.

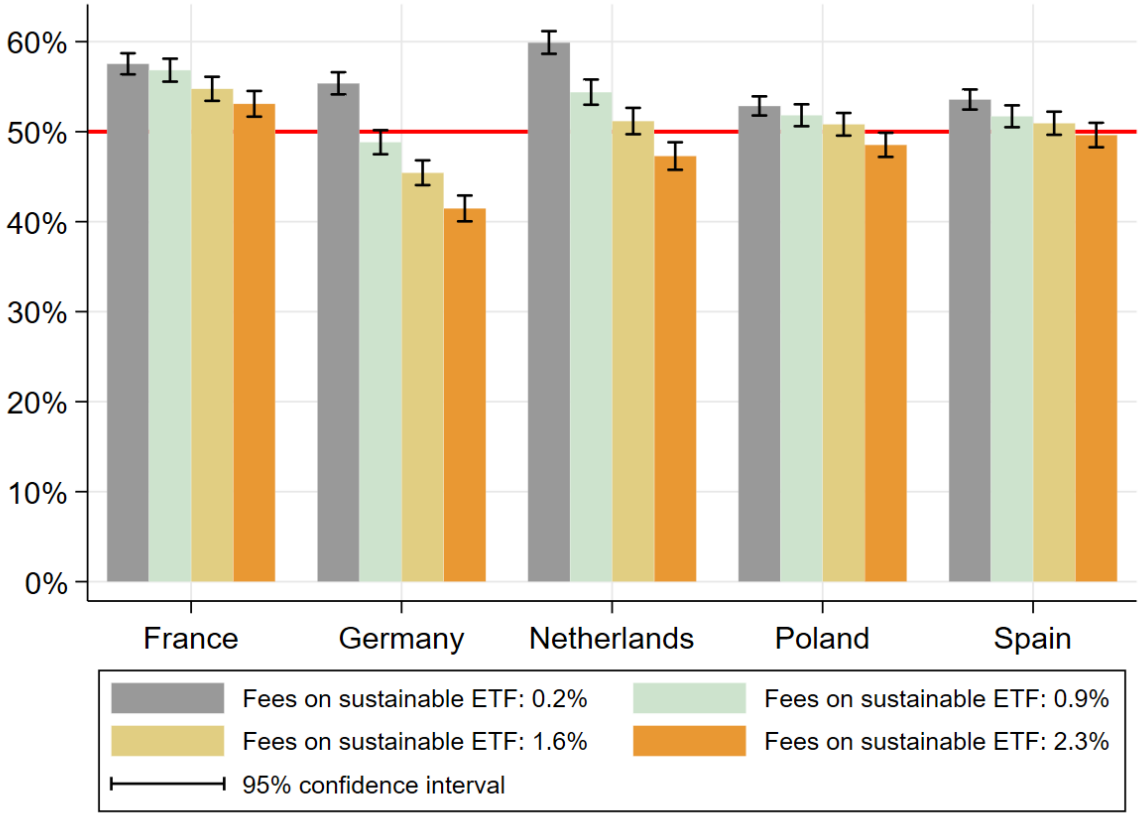


Figure 6: Investments in sustainable ETFs across countries
This graph shows the shares of the endowment respondents from the five different countries invested on average in sustainable ETFs, i.e. either in ETFs based on the MSCI World ESG Screened Index or in ETFs based on the MSCI World Climate Change Index, in the four different fee scenarios. Error bars represent 95% confidence intervals.

Appendix A: Additional tables

TABLE A.1 – REPRESENTATIVENESS OF THE FRENCH RESPONDENT SAMPLE

	Population (in %)	Persons who started the survey (in %)	Final sample of individual investors (in %)
Panel A: Gender			
Male	48.3	43.7	59.0
Female	51.7	56.1	41.0
Other	0.0	0.1	0.0
Panel B: Age			
18 to 24 years	10.2	8.7	6.5
25 to 29 years	7.2	8.3	9.7
30 to 39 years	15.8	16.9	21.7
40 to 49 years	16.5	16.7	22.4
50 to 64 years	24.5	29.6	24.9
65 years and older	25.7	20.0	14.8
Panel C: Region of main residence			
Île de France	18.3	18.7	21.4
Centre – Val de Loire	3.8	3.9	3.5
Bourgogne – Franche-Comté	4.2	4.2	5.0
Normandie	4.9	4.5	3.1
Hauts-de-France	8.9	11.7	9.8
Grand Est	8.2	7.9	8.1
Pays de la Loire	5.7	7.1	6.6
Bretagne	5.0	5.9	5.8
Nouvelle-Aquitaine	8.9	8.9	8.0
Occitanie	8.8	8.5	7.9
Auvergne-Rhône-Alpes	12.0	12.0	12.2
Provence-Alpes-Côte d'Azur	7.5	6.0	7.9
Corse	0.5	0.1	0.0
RUP FR — Régions Ultrapériphériques Françaises	3.3	0.5	0.1

The column *population (in %)* describes the population distribution in terms of age, gender, and region of main residence according to official population statistics derived from Eurostat. Since we had no prior information on the distribution of typical sociodemographic characteristics of the desired target group, i.e. individual investors in France, the survey institute recruited individuals in such a way that the sample of people who started the survey were, as close as possible, representative (in terms of age, gender, and region of main residence) of the French population with a minimum age of 18 years. Accordingly, the second column describes the distribution of all individuals who started the survey in terms of age, gender, and region of main residence. *Final sample of individual investors (in %)* describes the distribution of the final sample of experienced financial decision makers in terms of age, gender, and region of main residence, and thus the sample after screening out respondents who did not fulfil our criteria for experienced financial decision makers. Individuals who started the survey but were no financial decision maker in their household, did not hold investment products (e.g., stocks, funds, mutual funds, etc.) at the time of the survey or in the past, or did not inform themselves about those investment products were thus not part of the final sample.

TABLE A.2 – REPRESENTATIVENESS OF THE GERMAN RESPONDENT SAMPLE

	Population (in %)	Persons who started the survey (in %)	Final sample of individual investors (in %)
Panel A: Gender			
Male	49.3	62.0	64.4
Female	50.7	38.0	35.7
Other	0.0	0.0	0.2
Panel B: Age			
18 to 24 years	9.1	10.0	12.3
25 to 29 years	7.5	11.0	12.1
30 to 39 years	15.3	11.0	10.3
40 to 49 years	15.0	13.0	13.4
50 to 64 years	27.3	28.0	28.3
65 years and older	25.8	26.0	23.6
Panel C: Region of main residence			
Baden-Württemberg	13.3	11.0	12.3
Bayern	15.8	16.0	13.5
Berlin	4.4	5.0	7.3
Brandenburg	3.0	2.0	3.2
Bremen	0.8	1.0	0.4
Hamburg	2.2	2.0	4.0
Hessen	7.5	8.0	8.1
Mecklenburg-Vorpommern	1.9	1.0	1.0
Niedersachsen	9.6	9.0	9.6
Nordrhein-Westfalen	21.6	22.0	22.2
Rheinland-Pfalz	4.9	5.0	4.8
Saarland	1.2	1.0	1.2
Sachsen	4.9	6.0	4.8
Sachsen-Anhalt	2.7	3.0	1.9
Schleswig-Holstein	3.5	4.0	3.2
Thüringen	2.6	3.0	2.7

The column *population (in %)* describes the population distribution in terms of age, gender, and region of main residence according to official population statistics derived from Eurostat. Since we had prior information on the distribution of typical sociodemographic characteristics of the desired target group, i.e. individual investors in Germany, based on a pilot study, the survey institute recruited individuals according to these quotas. Accordingly, the second column describes the distribution of all individuals who started the survey in terms of age, gender, and region of main residence. *Final sample of individual investors (in %)* describes the distribution of the final sample of experienced financial decision makers in terms of age, gender, and region of main residence, and thus the sample after screening out respondents who did not fulfil our criteria for experienced financial decision makers. Individuals who started the survey but were no financial decision maker in their household, did not hold investment products (e.g., stocks, funds, mutual funds, etc.) at the time of the survey or in the past, or did not inform themselves about those investment products were thus not part of the final sample.

TABLE A.3 – REPRESENTATIVENESS OF THE DUTCH RESPONDENT SAMPLE

	Population (in %)	Persons who started the survey (in %)	Final sample of individual investors (in %)
Panel A: Gender			
Male	50.0	50.6	63.9
Female	50.0	49.0	35.9
Other	0.0	0.3	0.2
Panel B: Age			
18 to 24 years	10.7	7.0	8.0
25 to 29 years	8.0	6.2	7.6
30 to 39 years	15.0	14.4	18.1
40 to 49 years	16.0	21.1	18.8
50 to 64 years	25.6	26.9	28.6
65 years and older	24.7	24.3	18.8
Panel C: Region of main residence			
Groningen	3.4	4.3	3.9
Friesland (NL)	3.7	4.9	4.9
Drenthe	2.8	2.7	2.3
Overijssel	6.7	6.8	5.5
Flevoland	2.4	3.6	4.0
Gelderland	12.0	11.5	11.8
Utrecht	7.6	7.6	8.4
Noord-Holland	16.5	13.5	14.4
Zuid-Holland	21.5	20.1	19.5
Zeeland	2.2	2.7	2.5
Noord-Brabant	14.7	14.7	15.4
Limburg (NL)	6.4	7.6	7.5

The column *population (in %)* describes the population distribution in terms of age, gender, and region of main residence according to official population statistics derived from Eurostat. Since we had no prior information on the distribution of typical sociodemographic characteristics of the desired target group, i.e. individual investors in the Netherlands, the survey institute recruited individuals in such a way that the sample of people who started the survey were, as close as possible, representative (in terms of age, gender, and region of main residence) of the Dutch population with a minimum age of 18 years. Accordingly, the second column describes the distribution of all individuals who started the survey in terms of age, gender, and region of main residence. *Final sample of individual investors (in %)* describes the distribution of the final sample of experienced financial decision makers in terms of age, gender, and region of main residence, and thus the sample after screening out respondents who did not fulfil our criteria for experienced financial decision makers. Individuals who started the survey but were no financial decision maker in their household, did not hold investment products (e.g., stocks, funds, mutual funds, etc.) at the time of the survey or in the past, or did not inform themselves about those investment products were thus not part of the final sample.

TABLE A.4 – REPRESENTATIVENESS OF THE POLISH RESPONDENT SAMPLE

	Population (in %)	Persons who started the survey (in %)	Final sample of individual investors (in %)
Panel A: Gender			
Male	48.4	43.2	53.6
Female	51.6	56.6	46.4
Other	0.0	0.2	0.1
Panel B: Age			
18 to 24 years	8.1	7.9	7.0
25 to 29 years	9.8	8.3	9.0
30 to 39 years	20.8	19.6	23.2
40 to 49 years	18.4	17.3	20.4
50 to 64 years	21.6	24.0	27.7
65 years and older	21.3	22.8	12.8
Panel C: Region of main residence			
Dolnoslaskie	7.1	7.5	6.7
Kujawsko-Pomorskie	5.2	5.4	5.1
Lubelskie	6.0	5.5	5.9
Lubuskie	2.4	2.6	2.5
Lódzkie	7.6	6.4	7.9
Malopolskie	8.8	8.9	8.3
Mazowiec / Warszawski stoleczny	13.0	14.2	15.4
Opolskie	2.9	2.5	2.6
Podkarpackie	5.2	5.5	5.3
Podlaskie	3.4	3.0	3.2
Pomorskie	5.5	6.1	6.1
Slaskie	12.1	11.8	11.8
Swietokrzyskie	3.1	3.2	3.6
Warminsko-Mazurskie	3.7	3.7	3.2
Wielkopolskie	9.5	9.2	7.8
Zachodniopomorskie	4.5	4.4	4.3

The column *population (in %)* describes the population distribution in terms of age, gender, and region of main residence according to official population statistics derived from Eurostat. Since we had no prior information on the distribution of typical sociodemographic characteristics of the desired target group, i.e. individual investors in Poland, the survey institute recruited individuals in such a way that the sample of people who started the survey were, as close as possible, representative (in terms of age, gender, and region of main residence) of the Polish population with a minimum age of 18 years. Accordingly, the second column describes the distribution of all individuals who started the survey in terms of age, gender, and region of main residence. *Final sample of individual investors (in %)* describes the distribution of the final sample of experienced financial decision makers in terms of age, gender, and region of main residence, and thus the sample after screening out respondents who did not fulfil our criteria for experienced financial decision makers. Individuals who started the survey but were no financial decision maker in their household, did not hold investment products (e.g., stocks, funds, mutual funds, etc.) at the time of the survey or in the past, or did not inform themselves about those investment products were thus not part of the final sample.

TABLE A.5 – REPRESENTATIVENESS OF THE SPANISH RESPONDENT SAMPLE

	Population (in %)	Persons who started the survey (in %)	Final sample of individual investors (in %)
Panel A: Gender			
Male	49.0	46.5	52.8
Female	51.0	53.5	47.2
Other	0.0	0.0	0.0
Panel B: Age			
18 to 24 years	8.3	10.7	10.7
25 to 29 years	6.5	9.0	8.6
30 to 39 years	16.2	19.3	24.3
40 to 49 years	20.2	21.3	23.7
50 to 64 years	25.2	25.4	24.9
65 years and older	23.6	14.4	7.8
Panel C: Region of main residence			
Galicia	5.7	6.1	6.0
Principado de Asturias	2.2	3.1	2.2
Cantabria	1.2	1.3	1.3
País Vasco	4.6	4.5	4.1
Comunidad Foral de Navarra	1.4	0.9	0.7
La Rioja	0.7	0.4	0.5
Aragón	2.8	3.4	2.9
Comunidad de Madrid	14.3	20.1	20.7
Castilla y León	5.1	5.0	4.9
Castilla-la Mancha	4.3	3.6	3.5
Extremadura	2.2	1.7	1.7
Cataluña	16.2	16.5	16.5
Comunitat Valenciana	10.6	5.1	6.2
Illes Balears	2.6	1.5	1.8
Andalucía	17.9	18.3	17.4
Región de Murcia	3.2	3.0	2.9
Ciudad de Ceuta	0.2	0.1	0.0

TABLE A.5 (CONTINUED) – REPRESENTATIVENESS OF THE SPANISH RESPONDENT SAMPLE

Ciudad de Melilla	0.2	0.0	0.0
Canarias	4.7	5.4	6.9

The column *population (in %)* describes the population distribution in terms of age, gender, and region of main residence according to official population statistics derived from Eurostat. Since we had no prior information on the distribution of typical sociodemographic characteristics of the desired target group, i.e. individual investors in Spain, the survey institute recruited individuals in such a way that the sample of people who started the survey were, as close as possible, representative (in terms of age, gender, and region of main residence) of the Spanish population with a minimum age of 18 years. Accordingly, the second column describes the distribution of all individuals who started the survey in terms of age, gender, and region of main residence. *Final sample of individual investors (in %)* describes the distribution of the final sample of experienced financial decision makers in terms of age, gender, and region of main residence, and thus the sample after screening out respondents who did not fulfil our criteria for experienced financial decision makers. Individuals who started the survey but were no financial decision maker in their household, did not hold investment products (e.g., stocks, funds, mutual funds, etc.) at the time of the survey or in the past, or did not inform themselves about those investment products were thus not part of the final sample.

TABLE A.6 – DESCRIPTIVE STATISTICS OF SURVEY VARIABLES

Country:	All countries	France	Germany	Nether-lands	Poland	Spain
Preferences						
Social preferences	5,023[a]	985	971	991	1,032	1,044
	6.76[b]	6.53	7.19	6.87	6.71	6.53
	2.58[c]	2.58	2.44	2.50	2.66	2.66
Risk preferences	5,065	982	991	1,002	1,046	1,044
	5.87	6.09	5.55	5.95	5.90	5.85
	2.35	2.20	2.49	2.20	2.42	2.42
Time preferences	5,033	971	986	993	1,036	1,047
	6.77	6.81	6.77	6.72	6.65	6.89
	2.08	2.07	2.21	1.77	2.28	2.03
Signaling	5,162	1,007	1,009	1,010	1,070	1,066
	3.45	3.18	3.43	3.22	3.50	3.88
	1.83	1.83	1.83	1.72	1.82	1.85
Return expectations						
Much higher returns compared to MSCI World	5,162	1,007	1,009	1,010	1,070	1,066
	0.09	0.16	0.06	0.06	0.08	0.10
	0.29	0.36	0.24	0.25	0.27	0.30
A little higher returns compared to MSCI World	5,162	1,007	1,009	1,010	1,070	1,066
	0.30	0.29	0.26	0.33	0.27	0.35
	0.46	0.45	0.44	0.47	0.44	0.48
Neither higher nor lower returns compared to MSCI World	5,162	1,007	1,009	1,010	1,070	1,066
	0.20	0.20	0.21	0.20	0.19	0.20
	0.40	0.40	0.41	0.40	0.39	0.40
A little lower returns compared to MSCI World	5,162	1,007	1,009	1,010	1,070	1,066
	0.21	0.15	0.29	0.24	0.16	0.20
	0.41	0.35	0.46	0.43	0.37	0.40
Much lower returns compared to MSCI World	5,162	1,007	1,009	1,010	1,070	1,066
	0.06	0.06	0.06	0.05	0.06	0.06
	0.23	0.24	0.23	0.23	0.24	0.23
Do not know returns	5,162	1,007	1,009	1,010	1,070	1,066
	0.14	0.15	0.12	0.10	0.24	0.10
	0.35	0.36	0.33	0.31	0.43	0.29
Risk perceptions						
Higher risk compared to MSCI World	5,162	1,007	1,009	1,010	1,070	1,066
	0.44	0.46	0.41	0.43	0.38	0.54
	0.50	0.50	0.49	0.49	0.48	0.50
Equal risk compared to MSCI World	5,162	1,007	1,009	1,009	1,070	1,066
	0.22	0.19	0.23	0.22	0.25	0.21
	0.42	0.39	0.42	0.41	0.43	0.41
Lower risk compared to MSCI World	5,162	1,007	1,009	1,010	1,070	1,066
	0.20	0.18	0.24	0.24	0.18	0.16
	0.40	0.38	0.43	0.43	0.39	0.37
Do not know risk	5,162	1,007	1,009	1,010	1,070	1,066
	0.14	0.18	0.12	0.11	0.19	0.09
	0.34	0.38	0.32	0.31	0.39	0.28

TABLE A.6 (CONTINUED) – DESCRIPTIVE STATISTICS OF SURVEY VARIABLES

Individual characteristics						
Financial literacy	5,162	1,007	1,009	1,010	1,070	1,066
	2.21	2.00	2.45	2.53	1.98	2.10
	0.88	0.89	0.80	0.74	0.88	0.93
Did calculate fees correctly	5,162	1,007	1,009	1,010	1,070	1,066
	0.77	0.79	0.82	0.85	0.71	0.68
	0.42	0.41	0.38	0.36	0.46	0.47
Age	5,162	1,007	1,009	1,010	1,070	1,066
	45.95	45.85	47.72	48.27	45.42	42.72
	15.62	14.94	17.51	16.25	14.56	14.11
Female	5,162	1,007	1,009	1,010	1,070	1,066
	0.41	0.41	0.36	0.36	0.46	0.47
	0.49	0.49	0.48	0.48	0.50	0.50
High education	5,162	1,007	1,009	1,010	1,070	1,066
	0.46	0.35	0.35	0.56	0.53	0.52
	0.50	0.48	0.48	0.50	0.50	0.50
Married	5,162	1,007	1,009	1,010	1,070	1,066
	0.69	0.71	0.61	0.71	0.71	0.68
	0.46	0.45	0.49	0.45	0.45	0.46
High income	5,162	1,007	1,009	1,010	1,070	1,066
	0.39	0.37	0.37	0.39	0.41	0.42
	0.49	0.48	0.48	0.49	0.49	0.49
Middle income	5,162	1,007	1,009	1,010	1,070	1,066
	0.14	0.12	0.10	0.10	0.25	0.14
	0.35	0.33	0.29	0.30	0.44	0.35
Low income	5,162	1,007	1,009	1,010	1,070	1,066
	0.38	0.45	0.45	0.36	0.27	0.37
	0.49	0.50	0.50	0.48	0.44	0.48
Do not know or report income	5,162	1,007	1,009	1,010	1,070	1,066
	0.08	0.06	0.08	0.15	0.07	0.06
	0.28	0.23	0.28	0.35	0.25	0.25
Catholic	5,162	1,007	1,009	1,010	1,070	1,066
	0.36	0.30	0.23	0.17	0.67	0.42
	0.48	0.46	0.42	0.37	0.47	0.49
Protestant	5,162	1,007	1,009	1,010	1,070	1,066
	0.07	0.02	0.19	0.11	0.01	0.02
	0.25	0.14	0.39	0.32	0.08	0.12
Other religion	5,162	1,007	1,009	1,010	1,070	1,066
	0.04	0.05	0.05	0.05	0.02	0.03
	0.19	0.22	0.21	0.21	0.14	0.16
No religion	5,162	1,007	1,009	1,010	1,070	1,066
	0.38	0.47	0.36	0.49	0.17	0.41
	0.48	0.50	0.48	0.50	0.37	0.49
Do not report religion	5,162	1,007	1,009	1,010	1,070	1,066
	0.16	0.16	0.17	0.19	0.14	0.13
	0.36	0.37	0.38	0.39	0.35	0.33

This table reports the [a]number of respondents, [b]means, and [c]standard deviations of all surveys variables used in the main econometric analysis. Since the expected returns in four of the eight decisions refer to ETFs based on MSCI World ESG Screened Index and in the other four decisions to ETFs based on MSCI World Climate Change Index, the mean values and standard deviations for the categories reported in this table (e.g., "Much higher returns compared to MSCI World") result from averaging the two corresponding mean values or standard deviations for the respective categories, respectively.

TABLE A.7 – FEE SENSITIVITY AND SOCIAL PREFERENCES

Dependent variable:	Share of endowment invested in sustainable ETFs
Fees on sustainable ETF: 0.9% * social preferences	0.084
	(0.127)
Fees on sustainable ETF: 1.6% * social preferences	0.142
	(0.147)
Fees on sustainable ETF: 2.3% * social preferences	0.189
	(0.165)
Fees on sustainable ETF: 0.9%	-3.593***
	(0.931)
Fees on sustainable ETF: 1.6%	-6.106***
	(1.081)
Fees on sustainable ETF: 2.3%	-9.067***
	(1.205)
Social preferences	0.814***
	(0.129)
Constant	55.553***
	(2.279)
Preferences	Yes
Return expectations	Yes
Risk perceptions	Yes
Individual characteristics	Yes
Experimental controls	Yes
Country dummies	Yes
Respondents	4,901
Decisions	39,208
R^2	0.082

This table reports the estimation results of random effects estimations based on all eight decisions of all respondents. The dependent variable is the *Share of endowment invested in sustainable ETFs.* As explanatory variables, we consider individual preferences, return expectations, risk perceptions, but also control for other individual characteristics and experimental variables. We additionally include interaction terms between *Social preferences* and the dummy variables indicating the different fee scenarios variables. All variables are defined in Section 2.3. R^2 indicates the squared correlation between the observed and fitted values, reported as overall R^2 when using the Stata command xtreg (Stata version 15.1). *** (**, *) indicates that the estimated parameters are significantly different from zero at the 1% (5%, 10%) significance level (cluster-robust standard errors in parentheses).

TABLE A.8 – FEE SENSITIVITY AND FINANCIAL LITERACY

Dependent variable:	Share of endowment invested in sustainable ETFs
Fees on sustainable ETF: 0.9% * financial literacy	-3.341***
	(0.361)
Fees on sustainable ETF: 1.6% * financial literacy	-4.985***
	(0.415)
Fees on sustainable ETF: 2.3% * financial literacy	-6.467***
	(0.453)
Fees on sustainable ETF: 0.9%	4.412***
	(0.866)
Fees on sustainable ETF: 1.6%	5.954***
	(0.987)
Fees on sustainable ETF: 2.3%	6.604***
	(1.067)
Financial literacy	1.902***
	(0.377)
Constant	46.625***
	(2.259)
Preferences	Yes
Return expectations	Yes
Risk perceptions	Yes
Individual characteristics	Yes
Experimental controls	Yes
Country dummies	Yes
Respondents	4,901
Decisions	39,208
R^2	0.087

This table reports the estimation results of random effects estimations based on all eight decisions of all respondents. The dependent variable is the *Share of endowment invested in sustainable ETFs.* As explanatory variables, we consider individual preferences, return expectations, risk perceptions, but also control for other individual characteristics and experimental variables. We additionally include interaction terms between *Financial literacy* and the dummy variables indicating the different fee scenarios variables. All variables are defined in Section 2.3. R^2 indicates the squared correlation between the observed and fitted values, reported as overall R^2 when using the Stata command xtreg (Stata version 15.1). *** (**, *) indicates that the estimated parameters are significantly different from zero at the 1% (5%, 10%) significance level (cluster-robust standard errors in parentheses).

TABLE A.9 – FEE SENSITIVITY AND UNDERSTANDING FEES

Dependent variable:	Share of endowment invested in sustainable ETFs
Fees on sustainable ETF: 0.9% * did calculate fees correctly	-5.602***
	(0.750)
Fees on sustainable ETF: 1.6% * did calculate fees correctly	-8.520***
	(0.853)
Fees on sustainable ETF: 2.3% * did calculate fees correctly	-11.155***
	(0.938)
Fees on sustainable ETF: 0.9%	1.302*
	(0.665)
Fees on sustainable ETF: 1.6%	1.440*
	(0.745)
Fees on sustainable ETF: 2.3%	0.827
	(0.811)
Did calculate fees correctly	5.385***
	(0.667)
Constant	50.510***
	(2.298)
Preferences	Yes
Return expectations	Yes
Risk perceptions	Yes
Individual characteristics	Yes
Experimental controls	Yes
Country dummies	
Respondents	4,901
Decisions	39,208
R^2	0.085

This table reports the estimation results of random effects estimations based on all eight decisions of all respondents. The dependent variable is the *Share of endowment invested in sustainable ETFs.* As explanatory variables, we consider individual preferences, return expectations, risk perceptions, but also control for other individual characteristics and experimental variables. We additionally include interaction terms between *Did calculate fees correctly* and the dummy variables indicating the different fee scenarios variables. All variables are defined in Section 2.3. R^2 indicates the squared correlation between the observed and fitted values, reported as overall R^2 when using the Stata command xtreg (Stata version 15.1). *** (**, *) indicates that the estimated parameters are significantly different from zero at the 1% (5%, 10%) significance level (cluster-robust standard errors in parentheses).

TABLE A.10 – FEE SENSITIVITY AND RETURN EXPECTATIONS

Dependent variable:	Share of endowment invested in sustainable ETFs
Fees on sustainable ETF: 0.9% *	5.541***
much higher returns compared to MSCI World	(1.245)
Fees on sustainable ETF: 1.6% *	7.460***
much higher returns compared to MSCI World	(1.387)
Fees on sustainable ETF: 2.3% *	7.901***
much higher returns compared to MSCI World	(1.527)
Fees on sustainable ETF: 0.9% *	1.691**
a little higher returns compared to MSCI World	(0.839)
Fees on sustainable ETF: 1.6% *	2.650***
a little higher returns compared to MSCI World	(0.972)
Fees on sustainable ETF: 2.3% *	2.223**
a little higher returns compared to MSCI World	(1.082)
Fees on sustainable ETF: 0.9% *	-1.484*
a little lower returns compared to MSCI World	(0.893)
Fees on sustainable ETF: 1.6% *	-1.678
a little lower returns compared to MSCI World	(1.044)
Fees on sustainable ETF: 2.3% *	-2.865**
a little lower returns compared to MSCI World	(1.143)
Fees on sustainable ETF: 0.9% *	0.342
much lower returns compared to MSCI World	(1.379)
Fees on sustainable ETF: 1.6% *	0.864
much lower returns compared to MSCI World	(1.561)
Fees on sustainable ETF: 2.3% *	1.349
much lower returns compared to MSCI World	(1.610)
Fees on sustainable ETF: 0.9% *	1.873*
do not know returns	(1.065)
Fees on sustainable ETF: 1.6% *	4.071***
do not know returns	(1.260)
Fees on sustainable ETF: 2.3% *	3.108**
do not know returns	(1.365)
Fees on sustainable ETF: 0.9%	-4.006***
	(0.694)
Fees on sustainable ETF: 1.6%	-6.870***
	(0.808)
Fees on sustainable ETF: 2.3%	-9.080***
	(0.893)

TABLE A.10 (CONTINUED) – FEE SENSITIVITY AND RETURN EXPECTATIONS

Much higher returns compared to MSCI World	4.297*** (1.387)
A little higher returns compared to MSCI World	3.886*** (0.882)
A little lower returns compared to MSCI World	0.246 (0.996)
Much lower returns compared to MSCI World	-8.820*** (1.624)
Do not know returns	-4.076*** (1.276)
Constant	55.829*** (2.293)
Preferences	Yes
Return expectations	Yes
Risk perceptions	Yes
Individual characteristics	Yes
Experimental controls	Yes
Respondents	4,901
Decisions	39,208
R^2	0.084

This table reports the estimation results of random effects estimations based on all eight decisions of all respondents. The dependent variable is the *Share of endowment invested in sustainable ETFs.* As explanatory variables, we consider individual preferences, return expectations, risk perceptions, but also control for other individual characteristics and experimental variables. We additionally include interaction terms between each of the variables capturing return expectations and the dummy variables indicating the different fee scenarios variables. All variables are defined in Section 2.3. R^2 indicates the squared correlation between the observed and fitted values, reported as overall R^2 when using the Stata command xtreg (Stata version 15.1). *** (**, *) indicates that the estimated parameters are significantly different from zero at the 1% (5%, 10%) significance level (cluster-robust standard errors in parentheses).

TABLE A.11 – SUSTAINABLE INVESTMENTS IN REAL LIFE AND SOCIAL DESIRABILITY

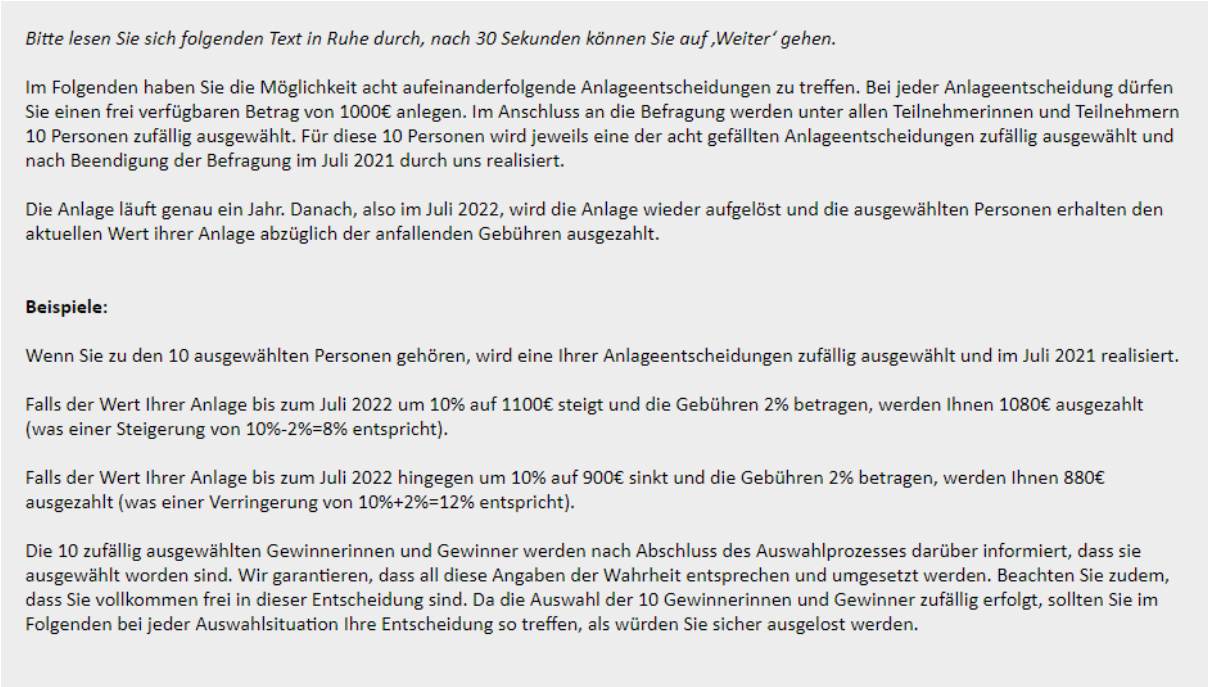
Dependent variable:	Respondent reports to hold sustainable investments in real life	
Sample:	All	Only current investors
	(1)	(2)
Average share invested in sustainable ETFs in the experiment (reference category: 0% to 25%)		
Above 25% to 50%	0.048***	0.055**
	(0.018)	(0.025)
Above 50% to 75%	0.045**	0.057**
	(0.019)	(0.026)
Above 75% to 100%	0.088***	0.125***
	(0.024)	(0.032)
Social desirability motives		
Self-deceptive enhancement	0.002	0.009
	(0.005)	(0.007)
Impression management	-0.008	-0.008
	(0.005)	(0.007)
Preferences		
Social preferences	0.009***	0.013***
	(0.002)	(0.003)
Risk preferences	0.011***	0.007*
	(0.003)	0.004)
Time preferences	0.012***	0.015***
	(0.003)	(0.004)
Signaling	0.026***	0.025***
	(0.003)	(0.005)
Return expectations		
Much higher returns compared to conventional investments	0.022	0.057*
	(0.022)	(0.032)
A little higher returns compared to conventional investments	0.020	0.036*
	(0.014)	(0.020)
A little lower returns compared to conventional investments	-0.060***	-0.088***
	(0.014)	(0.020)
Much lower returns compared to conventional investments	-0.035	-0.050
	(0.022)	(0.031)
Do not know returns	-0.089***	-0.120***
	(0.022)	(0.034)

TABLE A.11 (CONTINUED) – SUSTAINABLE INVESTMENTS IN REAL LIFE AND SOCIAL DESIRABILITY

Risk perceptions		
Higher risk compared to conventional investments	0.016	0.023
	(0.014)	(0.020)
Lower risk compared to conventional investments	0.032**	0.045**
	(0.014)	(0.020)
Do not know risk	-0.221***	-0.254***
	(0.033)	(0.044)
Individual characteristics		
Financial literacy	0.005	0.000
	(0.007)	(0.010)
Age	0.000	0.001
	(0.000)	(0.001)
Female	-0.018	-0.016
	(0.011)	(0.016)
High education	0.054***	0.049***
	(0.011)	(0.015)
Married	0.010	0.018
	(0.012)	(0.017)
High income	-0.011	-0.026
	(0.016)	(0.022)
Low income	-0.044***	-0.051**
	(0.017)	(0.024)
Do not know or report income	-0.069***	-0.060*
	(0.025)	(0.036)
Catholic	0.013	0.008
	(0.013)	(0.018)
Protestant	-0.021	-0.019
	(0.022)	(0.031)
Other religion	0.016	0.003
	(0.026)	(0.037)
Do not report religion	0.017	0.005
	(0.017)	(0.024)
Germany	0.030	0.041
	(0.019)	(0.026)
Netherlands	0.082***	0.114***
	(0.019)	(0.026)
Poland	-0.073***	-0.071***
	(0.016)	(0.024)
Spain	-0.034**	-0.039
	(0.016)	(0.024)
Observations	4,901	3,124

This table reports, based on binary probit models, the estimates of average marginal and discrete probability effects of continuous and discrete explanatory variables, respectively. The dependent variable is a dummy variable that takes the value of one if a respondent reported to hold sustainable investments in real life, and zero otherwise. As explanatory variables, we consider the dummy variables *Above 25% to 50%*, *Above 50% to 75%*, and *Above 75% to 100%* that take the value of one if a respondent's average share of endowment invested in sustainable ETFs in the experiment (in %) falls into the respective interval, and zero otherwise. To capture social desirability motives, we include the variables *Self-deceptive enhancement* and *Impression management*, which are based on six items from the Balanced Inventory of Desirable Responding (BIDR) developed by Paulhus (1984, 1991), as described in footnote 22. We additionally control for return expectations, risk perceptions, individual preferences, and other individual characteristics and country-fixed effects. Return expectations are captured by asking the question "What returns do you expect on sustainable investments?" Respondents could choose among "much lower returns compared to conventional investments," "a little lower returns compared to conventional investments," "neither lower nor higher returns compared to conventional investments," "a little higher returns compared to conventional investments," "much higher returns compared to conventional investments," and "don't know." We construct one dummy variable for each response category, except for "neither lower nor higher returns compared to conventional investments," which serves as reference category. We capture risk perceptions concerning sustainable investments compared to conventional investments by asking respondents to indicate their agreement with the statement "Sustainable investments are riskier than conventional investments." Respondents could rate their agreement on a 7-point Likert scale ranging from 1 "fully disagree" to 7 "fully agree" or select "don't know." The dummy variable *Lower risk compared to conventional investments* takes the value of one if the respondent perceives sustainable investments to be less risky than conventional investments (Likert scale 1-3), and zero otherwise. The dummy variable *Higher risk compared to conventional investments* takes the value of one if the respondent perceives sustainable investments to be riskier than conventional investments (Likert scale 5-7), and zero otherwise. The medium category (Likert scale 4) serves as reference category. All further variables are defined in Section 2.3. The subsample of current investors only contains respondents who reported to hold at least one of the following investment products: Stocks, passively managed stock funds, actively managed stock funds, mixed funds, passively managed bond funds, actively managed bond funds, other non-fixed-income forms of investment, precious metals, and cryptocurrencies. *** (**, *) indicates that the estimated average probability effects are significantly different from zero at the 1% (5%, 10%) significance level (standard errors in parentheses).

Appendix B: Additional figures



Bitte lesen Sie sich folgenden Text in Ruhe durch, nach 30 Sekunden können Sie auf ‚Weiter' gehen.

Im Folgenden haben Sie die Möglichkeit acht aufeinanderfolgende Anlageentscheidungen zu treffen. Bei jeder Anlageentscheidung dürfen Sie einen frei verfügbaren Betrag von 1000€ anlegen. Im Anschluss an die Befragung werden unter allen Teilnehmerinnen und Teilnehmern 10 Personen zufällig ausgewählt. Für diese 10 Personen wird jeweils eine der acht gefällten Anlageentscheidungen zufällig ausgewählt und nach Beendigung der Befragung im Juli 2021 durch uns realisiert.

Die Anlage läuft genau ein Jahr. Danach, also im Juli 2022, wird die Anlage wieder aufgelöst und die ausgewählten Personen erhalten den aktuellen Wert ihrer Anlage abzüglich der anfallenden Gebühren ausgezahlt.

Beispiele:

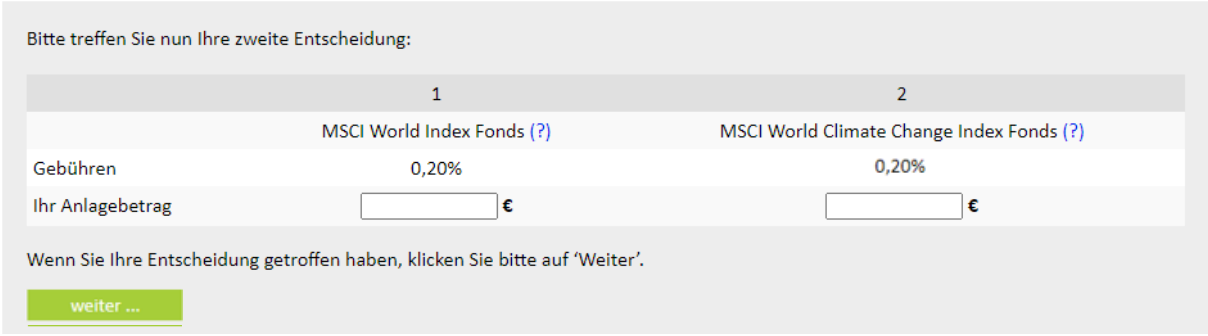
Wenn Sie zu den 10 ausgewählten Personen gehören, wird eine Ihrer Anlageentscheidungen zufällig ausgewählt und im Juli 2021 realisiert.

Falls der Wert Ihrer Anlage bis zum Juli 2022 um 10% auf 1100€ steigt und die Gebühren 2% betragen, werden Ihnen 1080€ ausgezahlt (was einer Steigerung von 10%-2%=8% entspricht).

Falls der Wert Ihrer Anlage bis zum Juli 2022 hingegen um 10% auf 900€ sinkt und die Gebühren 2% betragen, werden Ihnen 880€ ausgezahlt (was einer Verringerung von 10%+2%=12% entspricht).

Die 10 zufällig ausgewählten Gewinnerinnen und Gewinner werden nach Abschluss des Auswahlprozesses darüber informiert, dass sie ausgewählt worden sind. Wir garantieren, dass all diese Angaben der Wahrheit entsprechen und umgesetzt werden. Beachten Sie zudem, dass Sie vollkommen frei in dieser Entscheidung sind. Da die Auswahl der 10 Gewinnerinnen und Gewinner zufällig erfolgt, sollten Sie im Folgenden bei jeder Auswahlsituation Ihre Entscheidung so treffen, als würden Sie sicher ausgelost werden.

Figure B.1: First screen of the investment experiment
This figure shows an exemplary screenshot of the first screen of the experiment (in German language). In the upper part, we explain the general setting such as that respondents have the opportunity to make eight consecutive investment decisions, each of which allows them to invest an amount of €1000. In addition, we explain the payout mechanism. In the lower part, we give concrete examples that show the amount the respondents would receive after one year if they were among the people randomly selected after the survey.



Bitte treffen Sie nun Ihre zweite Entscheidung:

	1	2
	MSCI World Index Fonds (?)	MSCI World Climate Change Index Fonds (?)
Gebühren	0,20%	0,20%
Ihr Anlagebetrag	€	€

Wenn Sie Ihre Entscheidung getroffen haben, klicken Sie bitte auf 'Weiter'.

weiter ...

Figure B.2: Exemplary second investment decision in the experiment
This figure shows a screenshot of an exemplary second investment decision between an ETF based on the MSCI World Index with fees of 0.20% and an ETF based on the MSCI World Climate Change Index with fees of 0.20% (in German language).

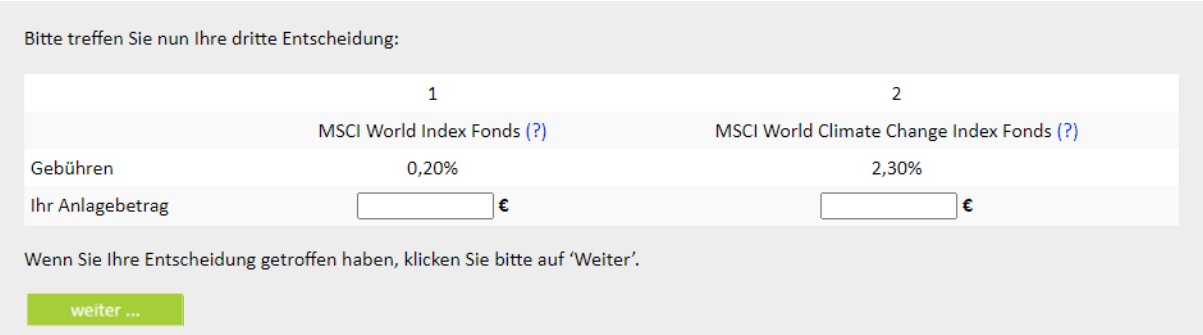


Figure B.3: Exemplary third investment decision in the experiment
This figure shows a screenshot of an exemplary third investment decision between an ETF based on the MSCI World Index with fees of 0.20% and an ETF based on the MSCI World Climate Change Index with fees of 2.30% (in German language).

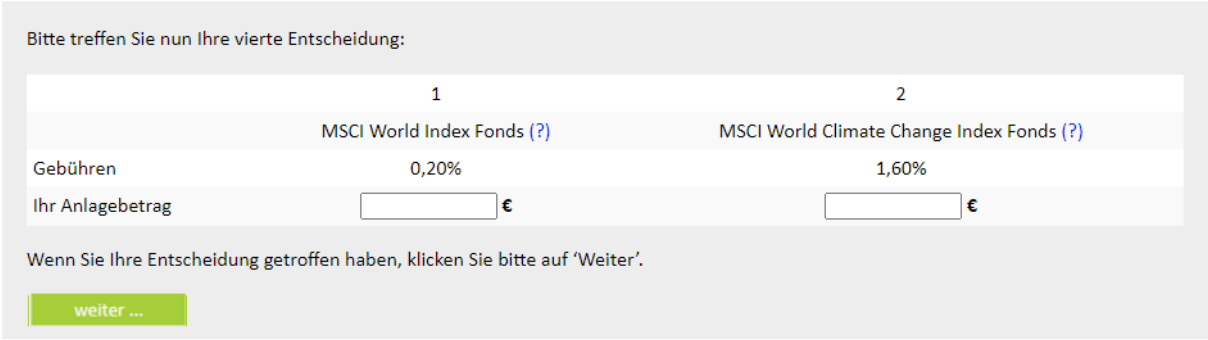


Figure B.4: Exemplary fourth investment decision in the experiment
This figure shows a screenshot of an exemplary fourth investment decision between an ETF based on the MSCI World Index with fees of 0.20% and an ETF based on the MSCI World Climate Change Index with fees of 1.60% (in German language).

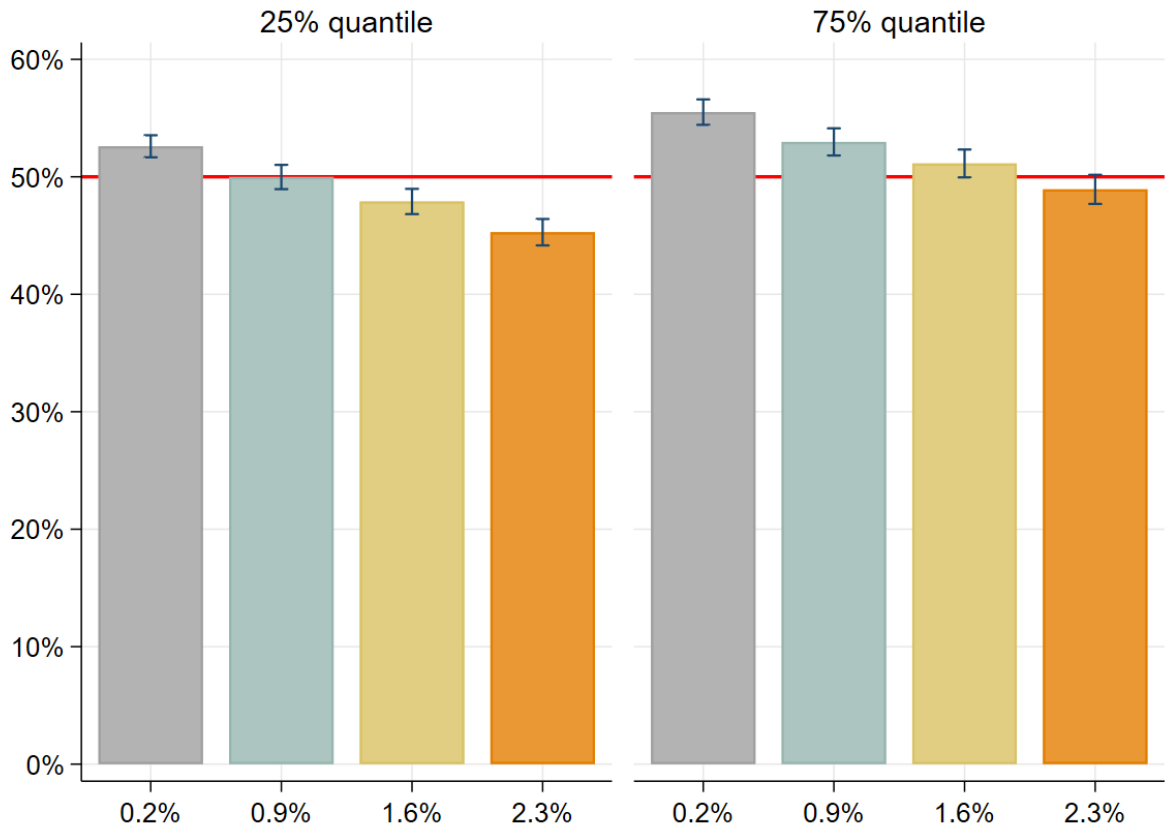


Figure B.5: Fee sensitivity across different levels of social preferences (only ETFs based on the MSCI World ESG Screened Index)
This graph shows the predicted shares of the endowment respondents invested on average in ETFs based on the MSCI World ESG Screened Index in the four different fee scenarios at 25% and 75% quantiles of the sample distribution for social preferences, respectively. Social preferences are measured on a Likert-scale ranging from 0 to 10. The 25% quantile refers to a score of 5 and the 75% to a score of 9. Error bars represent 95% confidence intervals.

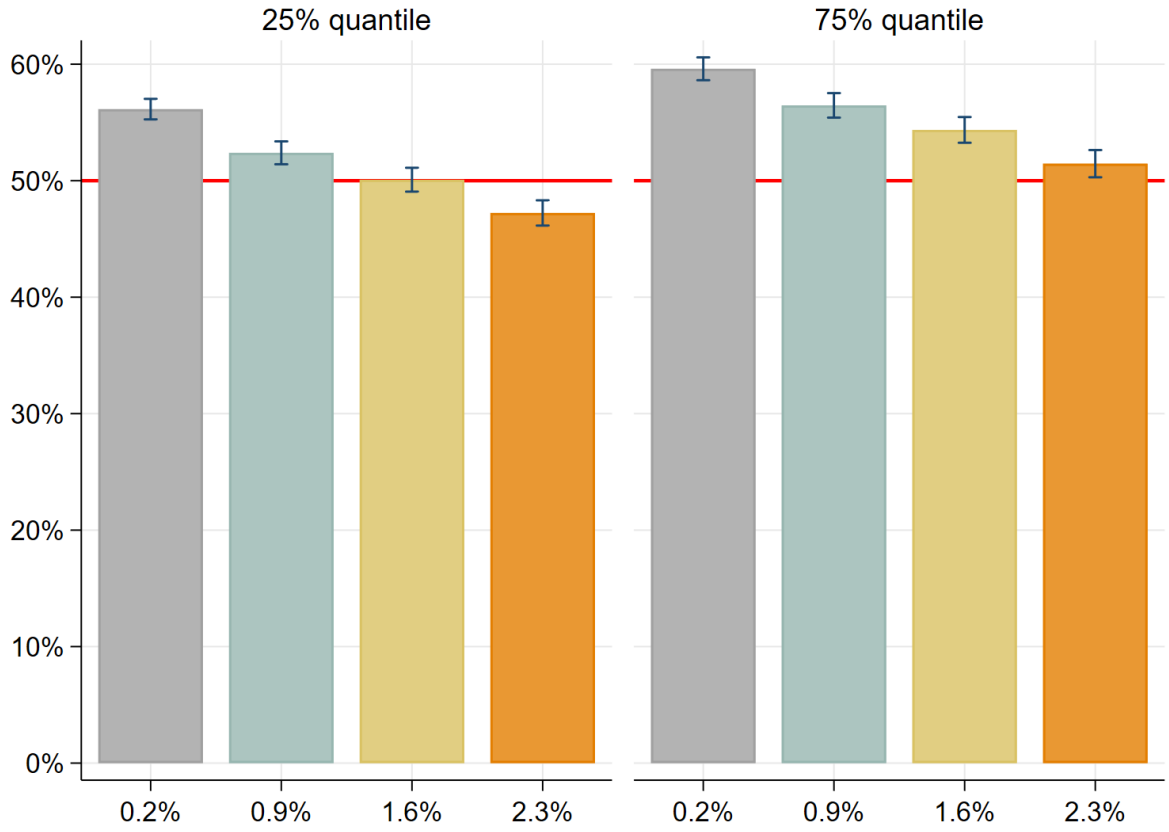


Figure B.6: Fee sensitivity across different levels of social preferences (only ETFs based on the MSCI World Climate Change Index)
This graph shows the predicted shares of the endowment respondents invested on average in ETFs based on the MSCI World Climate Change Index in the four different fee scenarios at 25% and 75% quantiles of the sample distribution for social preferences, respectively. Social preferences are measured on a Likert-scale ranging from 0 to 10. The 25% quantile refers to a score of 5 and the 75% to a score of 9. Error bars represent 95% confidence intervals.

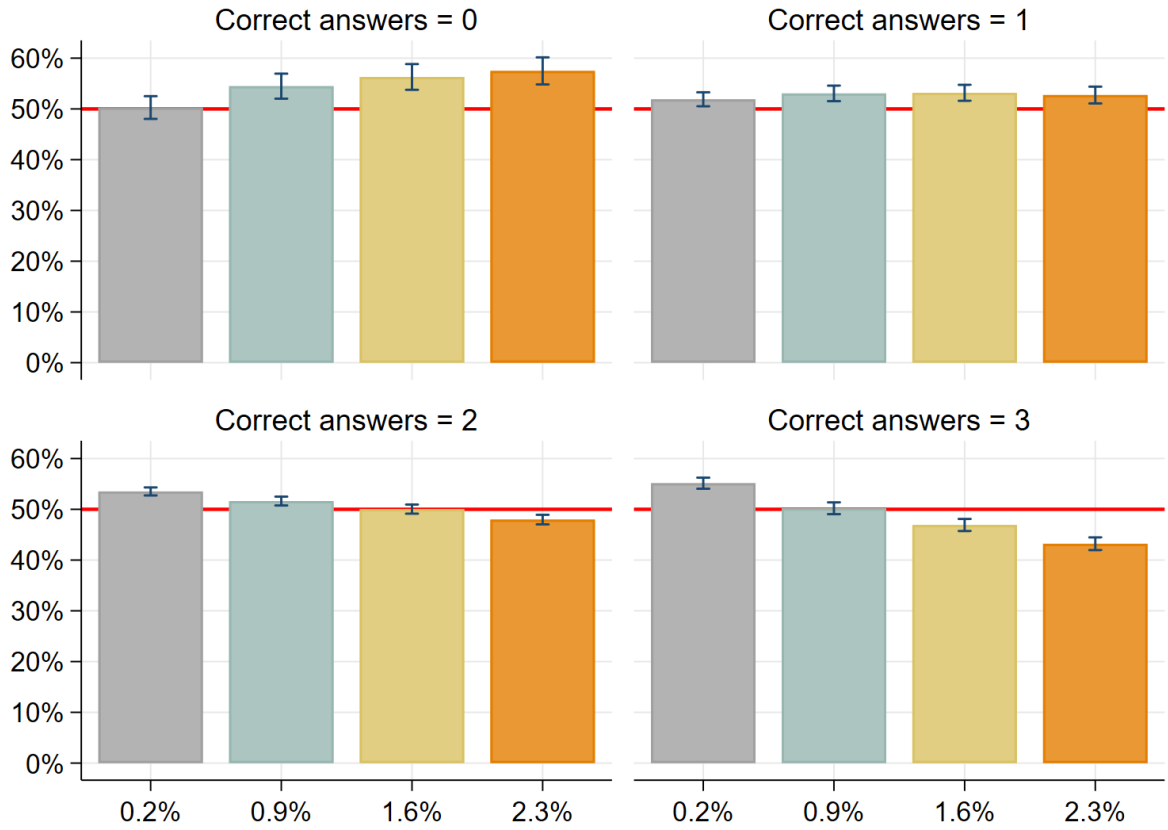


Figure B.7: Fee sensitivity across different levels of financial literacy (only ETFs based on the MSCI World ESG Screened Index)
This graph shows the predicted shares of the endowment respondents invested on average in ETFs based on the MSCI World ESG Screened Index in the four different fee scenarios at different levels of financial literacy. Financial literacy is measured by counting the correct answers to three quiz questions. A higher number of correct answers indicates higher levels of financial literacy. Error bars represent 95% confidence intervals.

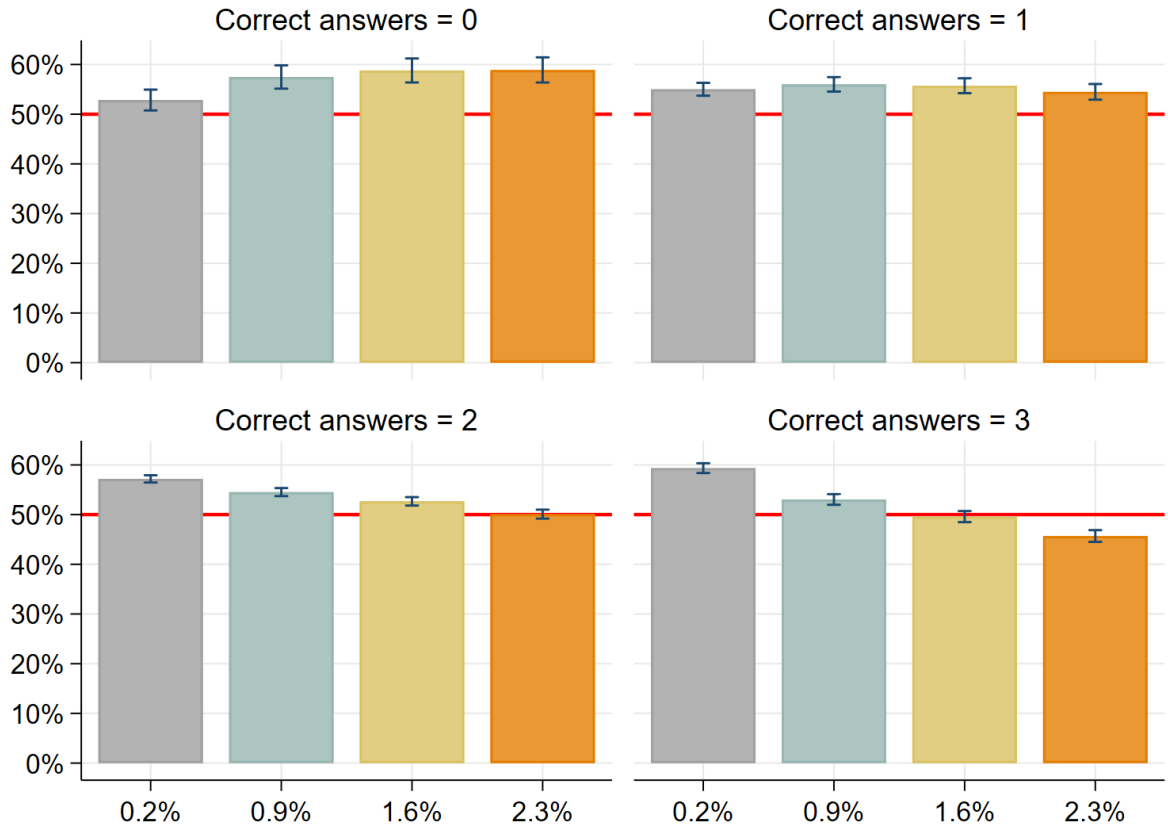


Figure B.8: Fee sensitivity across different levels of financial literacy (only ETFs based on the MSCI World Climate Change Index)
This graph shows the predicted shares of the endowment respondents invested on average in ETFs based on the MSCI World Climate Change Index in the four different fee scenarios at different levels of financial literacy. Financial literacy is measured by counting the correct answers to three quiz questions. A higher number of correct answers indicates higher levels of financial literacy. Error bars represent 95% confidence intervals.

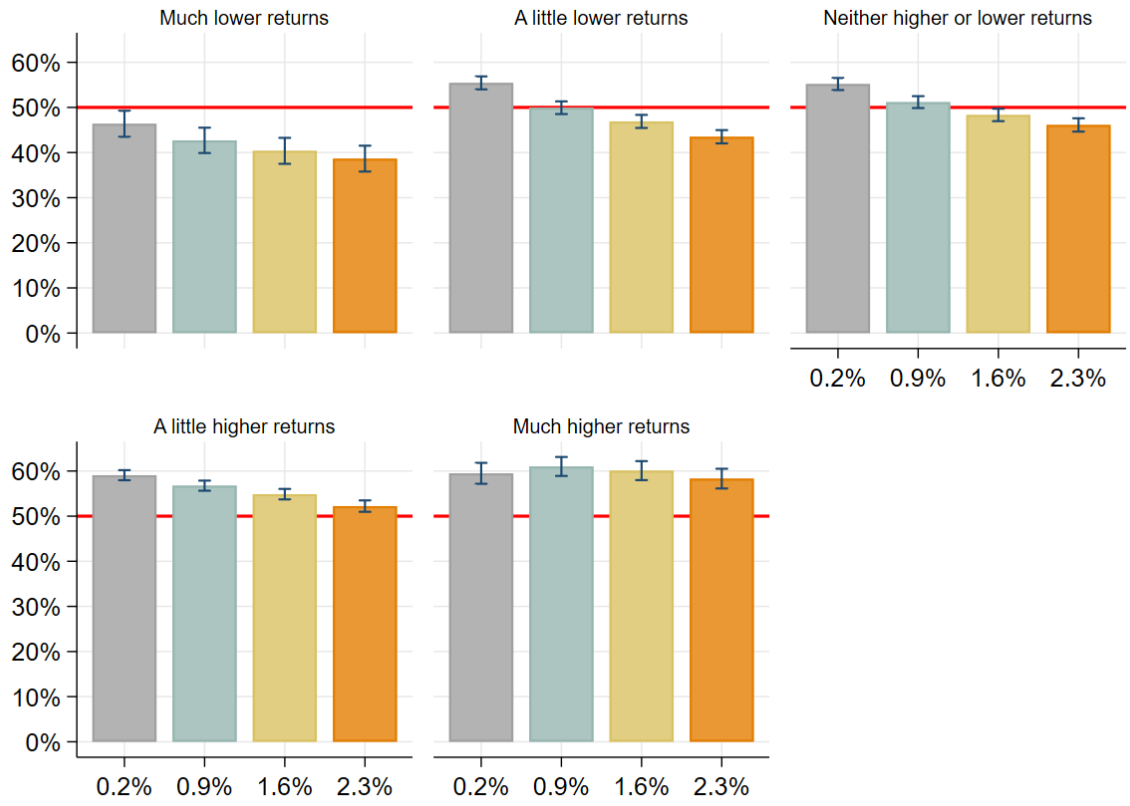


Figure B.9: Fee sensitivity across different levels of return expectations
This graph shows the predicted shares of the endowment respondents invested on average in sustainable ETFs, i.e. either in ETFs based on the MSCI World ESG Screened Index or in ETFs based on the MSCI World Climate Change Index, in the four different fee scenarios across different levels of return expectations. Error bars represent 95% confidence intervals.