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The role of households in financing the move towards a sustainable economy: results from a lab-in-the-field experiment in Italy [1]

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Abstract

Based on survey data from a lab-in-the-field experiment ran in October-November 2024 in different branches of a large Italian bank, this paper presents results on the household Willingness to Pay (WTP) for sustainable assets with the final aim to explore the effect of a visual treatment and possible differences across the three different dimensions of sustainability, i.e. E, S and G. Main results from the analyses by means of a linear regression model can be summarized as follows. First, the estimate for the negative visual treatment reaches 10% statistical significance, whereby the positive one is not significant, thus implying that the exposure to a negative visual treatment, by contrast to a positive one, is associated to an average increase the WTP for ESG. Second, both treatments are not significant once the model is augmented with an additional set of controls, with the WTP lower for graduated individuals, but higher for those with an investment horizon between 1 and 5 years and among those engaged in volunteering and concerned about the climate change. Third, when dissecting results by the factor of interest, the negative visual treatment significantly increases the WTP for the E dimension only. This result hints to household investors not considering sustainability as a multidimensional concept, but it is encouraging considering that the treatment used leveraged on the environmental dimension only. This seems to suggest that, with the correct leverage, the demand for ESG assets and a potentially positive WTP for them can be stimulated with obvious industry and policy implications.

Keywords: Sustainable finance; household financial choices, willingness to pay

JEL: D14; G11; M30

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1. Introduction

Increased awareness of the need for the energy transition and the necessary investments has pushed the markets to offer new financial products. Most attention has so far been devoted to the role that firms and institutional investors can play in the transition to a less carbon intensive economy, also fostered by an increasing regulation in that direction in the banking, insurance, pension fund, and asset managers industries.

The role of household savings and their allocation into Socially Responsible Investments (SRI) or more generally sustainable investments has been increasingly investigated since the early 2000s, with focus on several aspects: i) households' motivations and the underlying theoretical framework (e.g. Beal et al. 2005, Bollen, 2007, Aryeli et al., 2009); ii) the comparison of returns on SRI with returns on conventional assets and the existence of a premium, with contrasting empirical results (e.g. Bauer et al., 2005, Renneboog et al., 2008, Hong and Kacperczyk, 2009, Bertelli et al., 2021); iii) the SRI household profiling in terms of socio-demographic and economic features (e.g. Bauer & Smeets, 2015, Rossi et al., 2019).

Since about 2015 (cf. Paris Agreement 2015), the awareness of environmental issues and the need for a financing transition has been growing particularly fast, involving governments, institutions, firms, markets, and all investors, including private households. Furthermore, the 17 Sustainable Development Goals (SDG), set up by the United Nations in 2015 and included in the 2030 Agenda (United Nations, 2015), established three dimensions of sustainability: economic growth, social inclusion and environmental protection. In other words, sustainability cannot be achieved by exclusively considering the environmental dimension.

Responsible and sustainable investments, along with the integration of Environmental, Social, and Governance (ESG) dimensions into investment decisions, have been gaining increasing attention especially after the introduction of the Principles for Responsible Investment (PRI, 2017) by the United Nations (Widyawati, 2020).

On the supply side, it is important to notice that the universe of available assets has greatly expanded with different types of assets that may finance the energy transition with or without attention for other dimensions of sustainability beside the environmental one, i.e. the social and governance dimensions. Debt products

now range from the most widespread Green Bonds considering the Environmental issue only and Social Bonds focused on social objectives to Sustainable bonds characterized by a combination of ESG objectives, and the so-called second-generation Sustainability linked bonds, whose return is linked to sustainable objectives in several dimensions. It should also be noted that the Covid-19 pandemic has fostered the issuance of Social Bonds, which are simple fixed-income securities whose proceeds are allocated to social initiatives (e.g. Torricelli and Pellati, 2023). As for capital products, they can be in the form of stocks or equity funds with E(SG) rating up to the most recent Net zero funds. Several important open issues from the supply side remain, which also impact the investors' choices including: a) the need of a refinement in the taxonomy, which is mainly there in the form of guidelines (e.g. for bonds see International Capital Market Association, ICMA), yet not regulation, and b) the risk of green/social/sustainability washing due to the problems in ESG rating assignment and possible divergence in ratings (Berg et al., 2022).

Furthermore, from a regulatory viewpoint, the new requirement that came into effect in August 2022, obliges advisers to ask their clients about their sustainability preferences as part of the existing MiFID II suitability assessment, whereby MiFID II has been amended through two delegated regulations (2021/1253 and 2021/1269) as part of a broad Sustainable Finance Action Plan (SFAP) developed by the European Commission (EC).

The role of households in financing the energy transition needs to be revisited because of: i) the relevant changes in the sustainable asset universe (described above), and ii) the change in households' attitudes towards this type of assets in their portfolio. As for the latter, several developments are relevant. First, there is an increasing awareness of the importance of financing a sustainable economy with attention to the energy transition but also to social needs and governance commitment. In fact, on the one hand the growing number of environmental disasters related to global warming is nowadays apparent to everyone, and on the other hand the recent Covid-19 pandemic put to the forefront the need for funds to support the economic and health recovery of society with attention to both firms and households.

Second, there are changes in socio-demographic characteristics of households in many countries, such as the ageing of the population, changes in household

composition, and changes in the composition of household wealth, cognitive abilities and financial knowledge. This requires rethinking how the supply of financial products can better accommodate demand. For example, should mutual funds of ESG assets be offered and if so, should separate products be offered for the three dimensions E, S and G?

Against this background, the present paper addresses several research questions: What products do private households prefer? Do they care only for the low carbon feature or are they becoming aware that sustainability means ESG and not only E? Do they think they have to sacrifice return by ESG investing? If so, what is the "willingness to pay" (WTP) for that, i.e. how much are they willing to pay in terms of reduced returns to foster sustainability via their financial investments? Or do they think they can "do well while doing good"? Can households be stimulated in their financial decisions to support financial sustainability by using nudges? If so, what kind of nudge is more effective?

To this end, this paper reports results for a lab-in-the-field experiment in Italy aimed to detect knowledge of ESG assets, interest in investing into these products and, if so, directly selecting the ESG features of the assets or indirectly (i.e. delegating to investment funds the choice of the ESG features), their WTP and the effect of a visual treatment on these choices/attitudes.

To our knowledge this is the first study to use a lab-in-the-field approach for these specific questions and in particular to detect the role of direct vs indirect investment choices. Furthermore, the treatment allows then to exploit the data to investigate the effect of nudges on the demand of sustainable assets and the investors' WTP.

The focus of the present paper is on the household WTP with the final aim to explore the effect of a visual treatment and possible differences across the three different dimensions of sustainability, i.e. E, S and G. However, Appendix C reports results from analyses on other issues investigated on the same data, specifically: knowledge, interest, preference for direct vs. indirect selection (these results will be more thoroughly discussed in a companion paper of future publication).

The remainder of this paper is organized as follows. Section 2 provides an overview of the relevant literature. Section 3 describes the experiment design. Section 4 provides descriptive statistics of the data collected, while Section 5 presents an econometric analysis of the results obtained. Section 6 concludes.

Appedix A reports the survey questions and Appendix B the definition of the variables used in the analyses. Appendix C reports complementary analyses.

2. Literature Review

The academic literature on sustainable investing taking the personal finance perspective, has been addressing a few related questions: why do households invest in sustainable assets? How do sustainable assets perform in comparison to conventional ones? What is the typical profile of a sustainable investor?

The literature, which has been developing quickly since the 2000s, has addressed a few questions resting on some theoretical models accounting for the non-monetary feature of investment in the household decision process and has been testing households' choices based on two different empirical approaches. The first, more developed so far, provides econometric analyses based on either market data or survey data, the second, yet less developed in this specific financial field, rests on experiments (either lab or lab-in-the-field) set up to address specific research questions.[2]

Several studies look at motivations for sustainable investments. The answers rest on a theoretical framework where the individual's utility function depends on both wealth and non-wealth returns, the latter capturing the socially responsible dimensions of the decision. For example, Bollen (2007) tests whether differences in behavior exist between investors in SR mutual funds and investors in conventional funds. Results on the dynamics of cash flows in SR mutual funds are consistent with a multi-attribute utility function, with investors not only looking at the risk-return trade-off, but also getting direct utility from the socially responsible attributes of the funds, the so-called intrinsic motivation, the value of giving per se (Ariely et al., 2009). Similarly, Beal et al. (2005) provide three non-exhaustive and non-exclusive motivations for ethical investments: superior financial returns (consistently with traditional finance theory), non-wealth returns, and social change. In the same spirit, Døskeland and Pedersen (2016), based upon the theoretical model of utility of wealth and morality by Levitt and List (2007), use a natural field experiment to show that

[2] A recent special issue edited by Kirchler and Weitzel (Eds., 2023) overviews contributions in experimental finance, a field that has been gaining popularity in recent years. The contributions closer to our work are those in the field of individual decision making although none of the papers reviewed focuses on household choices of sustainable assets.

wealth framing is more effective than moral framing in inducing investors to engage in SRI. Glac (2009) uses lab experiments to underscore that the decision frame influences the likelihood of engagement in SRI. Pasewark and Riley (2010) utilize an experimental approach to determine the effects of values on an investment decision: they ask individuals to choose between bonds issued by a tobacco company or by a firm outside the tobacco industry: they conclude that personal values of the investor affect investment decisions. Gutsche et al. (2023) examine data from an incentivized framed field experiment that was part of an online survey among a broad sample of financial decision makers in Germany and find strong preferences for sustainable funds, which are driven by both pecuniary and non-pecuniary motives.

A related question concerns the historical performance of sustainable assets compared to conventional ones, and hence the potential existence of an "ethical penalty". In fact, in the real market some policymakers and academics argue that there is no trade-off between doing well and doing good whereas others have previously found that social responsibility does have implications for the expected returns (e.g. Hong and Kacperczyk, 2009). For example, Renneboog et al. (2008) find that SRI funds in European, North-American and Asia-Pacific countries underperform compared to conventional ones and conclude from this that the SRI investors pay a price for their socially responsible choice. In contrast, Bauer et al. (2005), using a database of German, UK and US ethical mutual funds, do not find significant differences in risk-adjusted returns between ethical and conventional funds. Gil-Bazo et al. (2010) even find that US SRI funds outperformed conventional ones in the period 1997-2005.

Renneboog et al. (2008) review the literature on SRI and emphasize that existing studies hint at but do not univocally prove the willingness of agents to accept a lower return in exchange for social or ethical goals. Benson and Humphrey (2008) analyze the investors' behavior and find that SRI fund flows are less sensitive to returns than conventional funds, and more persistent, thus pointing out the difficulty faced by SRI investors in finding alternative investments that meet their non-financial goals. Riedl and Smeets (2017) highlight social preferences as the main driver of investing in SRI, despite expecting a lower return, suggesting that there is a long run effect on asset prices.

A third strand of the literature aims to identify the SRI investor's profile empirically. Bauer and Smeets (2015) use survey data from retail customers of the only two banks in the Netherlands that exclusively offer SRI and find high levels of social identification among young, highly-educated and low-wealth investors, thus supporting the profiling of socially responsible investors by Junkus and Berry (2010). The roles of gender and education are also highlighted in Nilsson (2008), who further shows that social investors are not only driven by altruistic motives, but also by the idea that ethical mutual funds have an average or better than average performance. Hood et al. (2014) have recently looked at heterogeneities among socially conscious investors, emphasizing the different preferences for social investments across gender, age, religion and groups with different political affiliation.

Rossi et al. (2019) analyze revealed and stated household preferences for socially responsible investments. Using a questionnaire specifically designed for this purpose and administered to a Dutch representative household panel in 2016, they investigate the actual and latent demand for SRI products. Results show that social investors are willing to pay a price to be socially responsible rather than needing a little nudge, such as a gift (a book or a voucher). Highly educated individuals have a substantial latent demand that is currently unexploited. Keeping education constant, individuals who consider themselves financially literate are less interested in SRI than others. Particularly at the intensive margin, the stated demand for SRI funds is sensitive to the return penalty. Brunetti et al. (2025) has extended and resubmitted questions in 2024 so as to elicit changes compared to 2016.

In sum, there is no univocal evidence on the demand for sustainable products, the investors' WTP and the effect of nudges. Furthermore, the experimental approach has not been specifically implemented to address these issues, and this is the purpose of the present piece of research.

3. The experiment design

We conducted two rounds of an incentivized lab-in-the-field experiment in three branches of the same bank, a well-known large commercial bank that operates extensively across all regions of Italy. The branches are located in two distinct regions — specifically, in the North and Center of Italy — to account for potential geographical heterogeneity, which is to be expected in a country such as Italy where the financial-

economic situation is quite segmented typically across North, Centre, South and the Island. More specifically, one branch is the main one in Modena and is located close to one of the most popular fresh food markets in the city with mixed customers (retail, professionals, corporate), and the other two in Rome. In the latter case, one branch is highly central, and with a clientele primarily consisting of corporate customers, largely relying on online banking services, while the other is more peripherical, located – as the one in Modena - close to a popular market whereby customers are mainly retail. The branches were selected by the managers of the bank, in order to achieve the highest heterogeneity possible across clienteles as well as the widest numerosity of visitors during the experimental period.

The experiment was run during the opening hours (to the public) between 21 and 25 October in the main Modena branch, and between 25 and 29 November in the first Rome branch, and between 2 and 6 December 2024 in the second Rome branch.

The customers entering the bank were asked to participate in an incentivized survey.[3] The recruited subjects were thus informed that the interview would last about 5 minutes, and upon acceptance to participate, they would receive a gift at the end of the survey. They were also informed that the gift they would receive depended on the answers given to the questions of a specific section of the survey and a random selection mechanism.

Once the customers accepted participation in the survey, they were assigned to one of three groups, i.e., two treatment and one control group, through a randomized assignment mechanism.

The first group of customers (*"Negative visual nudge"*) received a card suggestive of the negative consequences of a natural disaster. In particular, we opted for a picture of a landscape after a flood, generated with AI and reported in the top panel of Figure 1. The choice was made based on two considerations. First, floods are among the natural disasters that are most easily reconducted to climate change (as opposed to e.g., wildfires or landslides). Second, extreme rainfalls and floods are likely to be quite resonant to the populations living in areas where the experiment took place, as

[3] Throughout the paper we will use the word customer and not client to mean that the person entering the bank were not necessarily linked to the bank by a formal relationship as normally the term client implies. In fact, we did not know the reason – and we did not mean to ask – why the person was there.

opposed to e.g., glaciers melting or hurricanes or sea level rise. The second group (*"Positive visual nudge"*) received a card displaying instead a picture of a nice green countryside (see bottom panel of Figure 1). In both cases, the card was handed to the participants in the moment of the presentation of the research project. The customers were invited to look at the names of the Universities involved and the title of the project, reported on the card. This had a twofold aim. On the one hand, this reassured that the initiative did not have commercial purposes and that their answers would have maintained completely anonym and used only for scientific aims. On the other hand, this ensured they took a good look at the picture, drawing their attention to the visual cue we adopted to nudge people towards sustainable investments. The card was delivered directly to the hands of the participants, who were also informed that they could take it home. Finally, the third group of customers did not receive any cards and acted as a control.

The experimental protocol was the same for the treated and control participants, hence irrespective of the group they were assigned, participants completed a short survey on their investment choices. Answers were provided to the researchers, who registered them on a tablet computer. The researchers conducted the interviews separately for each participant and in different places of the banks in order to reduce the risk of spillover effects across treatment groups. Before starting the questionnaire, researchers asked participants about their knowledge of ESG investments and provided a brief description of their characteristics.

Figure 1: Treatments

Negative visual treatment

Positive visual treatment

Then the questionnaire was administered (the full questionnaire is reported in Appendix A, along with the indication of which questions had answers provided in randomized order).

The first questions of the survey were related to participants' knowledge of ESG assets and their interest in ESG assets. In particular, they were asked which aspect (i.e., the E, S, G, or all components together) would they be willing to focus the most with their investment. They were also asked to declare the ideal share of ESG assets in their financial portfolio and whether they prefer to choose their stocks personally in order to identify the optimal mix for them between risk, return, and sustainability aspects or to rely on specialized operators, delegating the choice of the optimal mix of all the dimensions (risk, return, and sustainability) of their equity funds. Even

though this first part of the questionnaire may have induced an experimenter effect and may have affected the subsequent choices in the task presented below, we have balanced this risk with the need to guarantee that respondents had enough knowledge of sustainable financial products to make informed choices.

After the first set of questions, we presented participants a small "multiple price list" investment task. Specifically, we asked participants to indicate their preference between two assets with the same financial characteristics, i.e. type of asset and risk profile, but different return and sustainability profiles: one with ESG certification (asset A) and one without (asset B), under four different annual return scenarios (the different scenarios are displayed in Table 1). The four scenarios allow to detect the respondents' ESG preference and their potential WTP or, at the furthest extreme, a strong attitude against ESG features, by keeping at the same time the length of the interview within the time promised to the interviewed (about 5 minutes).[4]

For asset B, without ESG certification, the annual return ranges from 2% to 4%, while the annual return of security A, with ESG certification, is held fixed at 2% in the first three scenarios and then increased to 3% in the last scenario, compared to 2% of security B. In more detail, in the first scenario, the two securities are presented with the same return, with the aim of eliciting the respondent's preference for ESG products, other conditions (risk and return) being equal. In the next two scenarios, instead, conditions for ESG products are progressively worsened, by increasing the return of the non-ESG security and maintaining constant at 2% the return of the ESG security. The aim of these scenarios is to elicit how much return participants would be willing to give up (i.e. the WTP) to invest in a security with sustainable characteristics.

In the last scenario, the annual return is reversed, and security B is presented with a lower return (2%) compared to security A (ESG), offering 3%. The rationale in this case is checking whether the respondent is, irrespective of profitability, against ESG products.

[4] The values chosen for the financial returns, 2%, 3%, and 4%, were at the same time sufficiently easy to understand and in line with the financial market performances reported in late 2024 (the press release of the OEE, dated 19 September 2024, reported an annualized return for the CAC 40 French stock market index equal to 3.71%, and an annual average nominal performance of fixed income products of 1.5% (see www.oee.fr).

Table 1: Eliciting willingness to pay via asset choice task

Scenario	Asset A (ESG)	Asset B (non-ESG)
1	2% annual return	2% annual return
2	2% annual return	3% annual return
3	2% annual return	4% annual return
4	3% annual return	2% annual return

In order to elicit the true preferences of the participants, the answers to these questions were incentivized. Specifically, the monetary value of the gift given to each participant at the end of the survey was linked to the answers given by him/her to this multiple price list task (Table 2). In particular, the software used to set up the survey randomly choose one of the 4 scenarios and the gift given was associated with the financial return indicated as preferred in that scenario. In particular, choices of financial returns equal 2% were rewarded with a pencil (market value of 1.5€), choices of 3% financial return with a bag (market value of 7€), while the choices of 4% financial returns with a thermal water bottle (market value of 15€).

Table 2: Non-monetary incentives

Financial return	2%	3%	4%
Monetary value	1.5€	7€	15€
Associated gadget		 	 
See https://shop.gibischool.it/shop/b0qn9qfyib892k6653x4ctes0re7fdc4 and https://store.uniroma2.it			

Finally, participants were asked to provide some demographic and social context information. In particular, demographic questions were about gender, education, birth cohort, region of birth and region of residence. Social context information was about the degree of concern for climate change and for pollution (both with a 4 level Lickert scale: Not at all, little, quite a lot, a lot) and engagement in volunteering.

4. Experiment results: the Data

The final dataset counts 397 observations, almost identically split between the two cities (204 in Modena, and 195 in Rome). To gain insight into the resulting sample, the descriptive statistics over the entire sample are reported in Table 3. All variables are defined in the Appendix B.

The knowledge of ESG assets is quite widespread, but still not yet among the vast majority of the participants, as 56.2% of them were not aware of sustainable or ESG investment products before the interview (this percentage is a bit higher in Roma than in Modena and is slightly higher for women than men).

Table 3: Descriptive Statistics

Variable	Obs.	Mean	Std. dev.	Min	Max
City					
Modena	397	0.514	0.500	0	1
Rome	397	0.486	0.500	0	1
Knowledge					
No	397	0.562	0.497	0	1
Yes	397	0.438	0.497	0	1
Factor of Interest					
E Factor	397	0.159	0.366	0	1
S Factor	397	0.118	0.323	0	1
G Factor	397	0.028	0.164	0	1
ESG Mix	397	0.539	0.499	0	1
Not interested	397	0.156	0.363	0	1
Ideal allocation					
Less than 25%	397	0.348	0.473	0	1
Between 25% and 50%	397	0.375	0.485	0	1
Between 50% and 75%	397	0.081	0.273	0	1
More than 75%	397	0.035	0.185	0	1
Not interested	397	0.161	0.368	0	1

Selection					
Personally	397	0.295	0.456	0	1
Indirect via funds	397	0.544	0.499	0	1
Not interested	397	0.161	0.368	0	1
WTP					
0%	395	0.324	0.469	0	1
1%	395	0.271	0.445	0	1
2%	395	0.405	0.492	0	1
Gender					
Female	396	0.475	0.500	0	1
Male	396	0.525	0.500	0	1
Birth cohort					
≤ 1940	391	0.136	0.343	0	1
1950	391	0.184	0.388	0	1
1960	391	0.297	0.457	0	1
1970	391	0.192	0.394	0	1
≥ 1980	391	0.192	0.394	0	1
Birth Area					
North	395	0.433	0.496	0	1
Centre	395	0.339	0.474	0	1
South and Islands	395	0.127	0.333	0	1
Abroad	395	0.101	0.302	0	1
Education					
Primary School	392	0.005	0.071	0	1
Middle School	392	0.077	0.266	0	1
High School	392	0.421	0.494	0	1
Graduate	392	0.439	0.497	0	1
Post-graduate	392	0.059	0.235	0	1
Investment horizon					
Short	385	0.213	0.410	0	1
Medium	385	0.623	0.485	0	1
Long	385	0.164	0.370	0	1
Worried for climate crisis					
Not at all/Little	392	0.145	0.353	0	1
Quite a lot	392	0.441	0.497	0	1
A lot	392	0.413	0.493	0	1
Worried for pollution					
Not at all/Little	394	0.058	0.235	0	1
Quite a lot	394	0.388	0.488	0	1
A lot	394	0.553	0.498	0	1
Volunteering					
Yes	393	0.282	0.451	0	1
No	393	0.718	0.451	0	1
Treatment					
Positive Visual	397	0.348	0.477	0	1
Negative Visual	397	0.317	0.466	0	1
Control	397	0.335	0.473	0	1

Incoherent					
No	397	0.970	0.171	0	1
Yes	397	0.030	0.171	0	1
ESG Attitude					
Clearly averse	395	0.028	0.165	0	1
Weakly averse	395	0.041	0.197	0	1
Inconsistent	395	0.015	0.122	0	1
Non averse	395	0.916	0.277	0	1

Over the full sample, only the 15.6% of the respondents would not be interested in sustainable or ESG investment products. Among those interested, the vast majority (53.9%) are interested in assets targeting all the three dimensions of sustainability, had them a sum of money to invest. Finally, among those interested in one dimension only, most would target the environmental one (E Factor chosen by 15.9% of the respondents), while the social and the government ones are confirmed to be still less of interest (11.8% for the social one and only 2.8% for the governance one). Dissecting the results by city and gender we also identify potentially relevant interaction. For instance, we observe that in Rome there is less interest for ESG products, and more interest in the E and S factors to the expense of the mix, compared to Modena, and that females have higher propensity to invest in ESG assets, and are more sensitive to E and S factor than males.

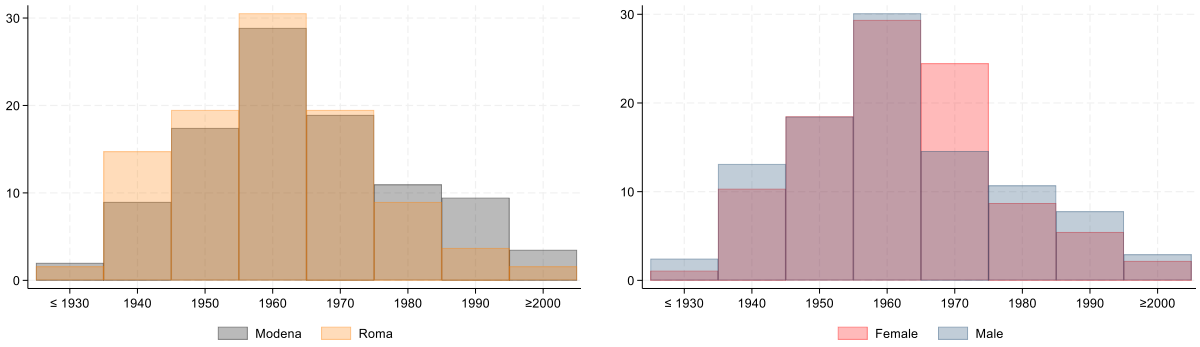
Most of the respondents interested in ESG investments, declare that in their ideal portfolio allocation ESG assets would represent a relevant portion, ranging from less than a quarter (34.8%) to up to a half (37.5%). Remarkably, 8.1% and 3.5% would invest most of their financial assets in ESG products (with respondents in Modena and women slightly more likely to invest higher shares in ESG products).

In doing so, more than a half of the sample (54.4%) would prefer an indirect investment, via e.g. funds, in which the selection is made by specialized operators on the topic, delegating the optimal mix of all the involved dimensions (risk, return, and sustainability), while only 29.5% would personally make their selection.

Finally, most of the respondents are willing to forgo part of the financial return in order to hold a sustainable investment: specifically, the WTP equals 1% in 27.1% of the cases, and even 2% in the 40.5% of the cases.

In terms of demographics, the sample is almost evenly split between "Female" and "Male," with a slight majority for males, confirming the well-known result that males are more typically in charge of the financial decisions of the households (for the case of Italy see e.g. Bertocchi et al., 2014). Despite all birth cohorts are represented, almost two thirds of respondents were born in the 1950s (18.4%), 1960s (29.7%) and 1970s (19.2%), with some differences by gender (more females among those born in the 1970s) and by city (younger in Modena than in Rome) displayed in Figure 2.

Figure 2: Distribution of birth cohort by city and gender.



Most of the respondents hold either a high school diploma or a university degree, representing 42.1% and 43.9% of the total sample, respectively. Postgraduate qualifications, slightly more common in Rome compared to Modena, represent a small portion of the sample. The education level is almost evenly split between "Female" and "Male, even if women have a slightly higher educational level with respect to man. The sample shows a good heterogeneity also in terms of birth area, with most of the respondents being born in the North and Center of Italy (where the interviews took place), but there are also sufficient portions of people born in the South of Italy (12.7%) and abroad (10.1%). Most of the respondents, 62.3%, have a medium investment horizon (between 1 and 5 years), while the rest is almost evenly split between a shorter (less than one year, 21.3%) and longer (more than 5 years, 16.4%) horizon. The distribution is almost the same across the two gender categories, with males (respondents in Rome) having a slightly more (less) marked preference for longer horizons. Climate and pollution concerns are widespread, with 85.4% of respondents either a lot (41.3%) or quite a lot (44.1%) concerned about the climate crisis, with women slightly more concerned than men. Even more marked the concerns about pollution, with 94.1% of respondents declaring some

degree of concern, again with women more sensitive than men. Remarkably, respondents express greater concern about pollution than about climate crisis, with more than half of the sample (55.3%) reporting strong concern about pollution, compared to 41.3% expressing similar concern about climate crisis. Finally, 28.2% of the respondents engage in volunteering activity, with a distribution that is overall similar across the two cities and gender.

Last, the perfectly uniform distribution of the treatments confirms the correct execution of the experiment.

We then define two additional variables, helpful for the definition of the estimation sample. The first one is Incoherent, which isolates some inconsistencies in the answers given by the respondents. For instance, we located 7 respondents (6 in Modena, 1 in Rome) who declared to be willing to forego a 2% financial return in Scenario 3 but were not willing to forego a 1% financial return in Scenario 2. Similarly, we spotted 5 respondents (2 in Modena, 3 in Rome) declaring a positive WTP in Scenarios 2 and 3, but who eventually selected the non-ESG asset, despite its lower return, in Scenario 4. Finally, we reported 6 respondents (2 in Modena, 4 in Rome) who declared a preference for the ESG asset in Scenario 1, i.e., when it has the same return as the non-ESG asset, but not in Scenario 4, when it has an even higher return. The variable Incoherent thus takes value 1 in these 12 cases (some of these respondents made more than one inconsistent choice) and 0 otherwise. The second variable is ESG Adverse. This variable takes value 1 for the 11 respondents (3 in Modena, 8 in Rome) who never selected ESG assets, even when it comes with a higher return compared to the non-ESG asset (Scenarios 1 and 4, respectively). It thus indicates that the respondent is absolutely averse to this type of assets (some of them, e.g., explicitly reported their scepticism citing the *green washing* phenomenon). All the econometric analyses are run on a sample excluding 23 individuals who gave inconsistent answers or were clearly ESG averse.

5. Econometric analyses

In order to assess if and how the treatment *causally* affects the willingness to pay for ESG products, we estimate the following linear regression model:

$$WTP_i = \beta_0 + \beta_1 T_i^+ + \beta_2 T_i^- + \boldsymbol{X\beta} + \varepsilon_i \quad (1)$$

where:

- WTP_i is the Willingness to pay of the respondent *i;*
- T_i^+ : is an indicator for respondent *i* receiving the positive visual treatment
- T_i^- : is an indicator for respondent *i* receiving the negative visual treatment
- $\boldsymbol{X}$: is a vector of controls, including various combinations of the following set of variables:
    - Demographic: gender (dummy for being a male), birth cohort (dummy for being relatively young, i.e. born after 1980), birth area (categorical: North – the reference category –, Centre, South and islands, abroad) and level of education (dummy for being at least graduated).
    - Survey city (dummy for being interviewed in Rome).
    - Financial horizon: a categorical variable indicating whether the preferred investment horizon is below 1 year (short, the reference category), between 1 and 5 years (medium) or otherwise (long).
    - Social preferences: which are controlled with a dummy for being engaged in volunteering activity together with either a dummy for being concerned (quite a lot or a lot) for climate change or similarly so for pollution.
- ε_i is the error term.

Estimates for coefficients in model (1) are obtained by OLS and requesting bootstrap standard errors (150 replications, with seed 1979).[5] The results obtained are reported in Table 4.

Column (1) reports the estimates with only the visual treatments: the positive one is not significant while the negative one has a 10% statistical significance. In other words, compared to receiving no treatment, a positive visual treatment does not cause any significant change in WTP, while the exposure to a negative one is associated to an average increase in the WTP for ESG asset by 18.69%.

However, as shown in columns (2) and (3) of Table 4, both treatments are not significance once the model is augmented with additional set of controls. As for the latter, we observe that the WTP is not associated with the gender, or with the cohort

[5] Mooney and Duval (1993) suggest a total of 50 – 200 replications to get adequate for estimates of standard error and normal-approximation confidence intervals.

or area of birth, and does not vary between the two cities considered for the experiment. We do find, though, a negative association between the WTP and the level of education. Specifically, we find that graduated individuals have WTP that is somewhat between 19% and 21% lower compared to those non-graduated. Results in the literature typically report that the preferences for sustainable assets are positively associated with the level of education (see, e.g., Nilsson, 2008, Bauer and Smeets, 2015, or Rossi et al., 2019). However, recalling that we were not able to collect any information about wealth or income, the level of education might somewhat act as a proxy for them and thus actually capturing the negative association again typically reported in the same literature between wealth and income and the WTP. The investment horizon also plays a role, as the WTP is significantly higher for those with an investment horizon comprised between 1 and 5 years, as opposed to those with shorter horizons, typical of elderly people. Finally, and quite interestingly, social preferences and climate concern play a key role, as, the WTP is significantly higher among those engaged in volunteering activities and concerned about climate change.

We then dissect the results by which factor of interest, if any, was declared with reference to ESG assets (see Table 5). Several considerations are in order. First, once again, the positive visual treatment is never statistically significant. Second, the negative visual treatment has significantly boosted the WTP of the individuals who reported an interest in the environmental dimension only. This result, which is remarkably robust to different ways of controlling for environmental and social preferences, is fascinating in several respects. First, it seems to confirm that the awareness that sustainability cannot be reached without a multidimensional approach is still far to be reached among the public opinion. Against this somewhat deceiving evidence, the remarkably significant – and large in magnitude – effect of the treatment proposed is encouraging considering that the treatment we have used leveraged on the environmental dimension only. This seems to suggest that, with the correct leverage, the demand for ESG assets and a potentially positive WTP for them can be stimulated.

Table 4: Treatment effect estimates

VARIABLES	(1)	(2)	(3)
T_i^+	0.0298	0.0396	0.0228
	(0.113)	(0.108)	(0.101)
T_i^-	0.1869*	0.1542	0.1325
	(0.110)	(0.104)	(0.122)
Male		-0.1264	-0.1283
		(0.092)	(0.083)
Young		-0.0927	-0.0970
		(0.117)	(0.120)
Birth = Centre		-0.0546	-0.0687
		(0.182)	(0.170)
Birth = South and islands		-0.0070	0.0175
		(0.158)	(0.177)
Birth = Abroad		0.0019	-0.0077
		(0.198)	(0.203)
Graduate		-0.1917**	-0.2134**
		(0.091)	(0.093)
City = Rome		-0.0274	0.0133
		(0.155)	(0.143)
Investment horizon = Medium		0.2340**	0.2362**
		(0.112)	(0.118)
Investment horizon = Long		0.0922	0.1011
		(0.153)	(0.150)
Volunteer		0.2295**	0.2181**
		(0.096)	(0.099)
Climate		0.3250**	
		(0.135)	
Pollution			0.3794
			(0.235)
Constant	1.0236***	0.7323***	0.6664***
	(0.073)	(0.180)	(0.253)
Observations	372	353	354
R-squared	0.0091	0.0812	0.0700

Notes: bootstrap standard errors (150 replications, with seed 1979) are reported in parentheses. ***, ** and * represent significance at 1, 5, 10% levels, respectively.

Table 5: Treatment effect estimates, by factor of interest

VARIABLES	E Factor	S Factor	ESG Factor	Interested	Not interested
T_i^+	0.1905	0.2905	0.044	0.1006	-0.0659
	-0.278	-0.341	-0.12	-0.107	-0.29
T_i^-	0.5909**	0.1833	0.0751	0.2037*	0.0238
	-0.247	-0.322	-0.147	-0.107	-0.335
Demographic	NO	NO	NO	NO	NO
Investment horizon	NO	NO	NO	NO	NO
Volunteer	NO	NO	NO	NO	NO
Climate	NO	NO	NO	NO	NO
Pollution	NO	NO	NO	NO	NO
Observations	62	45	204	320	52
R-squared	0.0938	0.0176	0.0015	0.0104	0.0023
T_i^+	0.0525	0.2514	0.0154	0.0659	-0.0406
	(0.308)	(0.468)	(0.133)	(0.120)	(0.398)
T_i^-	0.6634**	0.2591	0.0331	0.1687	0.0816
	(0.292)	(0.426)	(0.133)	(0.118)	(0.502)
Demographic	YES	YES	YES	YES	YES
Investment horizon	YES	YES	YES	YES	YES
Volunteer	YES	YES	YES	YES	YES
Climate	YES	YES	YES	YES	YES
Pollution	NO	NO	NO	NO	NO
Observations	60	41	198	308	45
R-squared	0.3087	0.4849	0.0935	0.0805	0.1319
T_i^+	-0.0012	0.2217	0.0056	0.0548	-0.0298
	(0.301)	(0.455)	(0.129)	(0.108)	(0.376)
T_i^-	0.6210**	0.1826	-0.0007	0.1446	0.0861
	(0.296)	(0.432)	(0.143)	(0.125)	(0.506)
Demographic	YES	YES	YES	YES	YES
Investment horizon	YES	YES	YES	YES	YES
Volunteer	YES	YES	YES	YES	YES
Climate	NO	NO	NO	NO	NO
Pollution	YES	YES	YES	YES	YES
Observations	60	40	200	309	45
R-squared	0.2900	0.4434	0.0902	0.0685	0.1310

Notes: bootstrap standard errors (150 replications, with seed 1979) are reported in parentheses. ***, ** and * represent significance at 1, 5, 10% levels, respectively.

6. Conclusions

Against changes in the sustainable asset universe and in households' attitudes towards investing in sustainability, we ran a lab-in-the-field experiment aimed to detect: knowledge of ESG assets; interest in investing into these products; preference for personally selecting the ESG features of the assets vs. delegating the choice of the ESG features to e.g. investment funds; the WTP for ESG features in the assets and the effect of a visual treatment.

Within this broader research, the focus of the present paper is on the household WTP in order to explore, beside the role of the demographic characteristics, the investment horizon and social attitudes, the effect of a visual treatment and possible differences across the three different dimensions of sustainability, i.e. E, S and G. Main results from the analyses of the collected survey data by means of a linear regression model can be summarized as follows.

First, the estimates of a regression for the WTP including only the treatments show that, compared to receiving no treatment, the negative visual one has a 10% statistical significance, while the positive one is not significant. Thus, this result implies that the exposure to a negative visual treatment is associated to an average increase (18.69%) in the WTP for ESG, while receiving a positive visual treatment does not cause any significant effect.

Second, once the model is augmented with an additional set of controls, we do not find a significant effect of either treatment. As for the controls, we find a significant negative association between the WTP and the level of education with graduated individuals having a WTP that is somewhat between 19% and 21% lower compared to those non-graduated. Results in the literature typically report that the preferences for sustainable assets are positively associated with the level of education (see, e.g., Nilsson, 2008, Bauer and Smeets, 2015, or Rossi et al., 2019), but since we do not have any information about wealth or income, education is likely to capture the negative association typically reported in the same literature between wealth and income and the WTP. The investment horizon also plays a role, as the WTP is significantly higher for those with an investment horizon between 1 and 5 years hinting to investors correctly interpreting sustainability as a long-term concept. Further, we find a significant higher WTP for those engaged in volunteering activities and with climate change concerns.

Finally, when we then dissect the results by factor of interest, we find again that the positive visual treatment is never statistically significant while the negative visual one significantly increases the WTP of the individuals with interest in the environmental dimension only. This result, which is robust to different ways of controlling for environmental and social preferences, points to a connection between the sustainability dimension of the treatment and the household ESG factor of interest. Specifically, when exposed to a treatment such as the one used in our experiment that leverages on an environmental issue, the only household who react are those with interest in the single environmental dimension.

Although this result hints to households not considering sustainability as a multidimensional concept, the remarkably significant – and large in magnitude – effect of the treatment proposed is encouraging considering that the treatment we have used leveraged on the environmental dimension only. This seems to suggest that, with the correct leverage, the demand for ESG assets and a potentially positive WTP for them can be stimulated.

Our results have industry and policy implications. Specifically, for the financial industry also in regulatory terms (e.g. MiFID II) and for asset managers in term of assets/portfolios offered to customers (e.g. Bertelli and Torricelli, 2024 and 2025) and the appropriate nudges to be used.

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Appendix A - Questionnaire (Translated form Italian).

The University of Modena and Reggio Emilia and the University of Rome Tor Vergata are conducting a research project on financial investment choices in Italy in connection to sustainability.
To this end, we would like to ask you a few questions. The questionnaire is completely anonymous, does not require sensitive data, and lasts about 5 minutes.
To thank you for your time, we will give you a gift. The monetary value of the gift is tied to the financial choices you will indicate during the questionnaire in a scenario drawn randomly from the 4 that will be presented to you.
ESG financial products (such as stocks, bonds, or funds), also known as Sustainable or (Socially) Responsible investments, are those linked to companies committed to protecting the environment (e.g., reducing greenhouse gas emissions), promoting social initiatives (for the society in general or their employees, e.g., corporate kindergarten), and improving corporate governance (e.g., anti-corruption rules, ethical business practices).

Q1: Had you already heard about sustainable or ESG investment products?
Answer:

- Yes
- No

Q2: Suppose you receive a sum of cash to invest. Would you be interested in investing it in ESG products and, if so, in which of the following directions?
Answer (randomized order):

- Exclusively for environmental purposes (E Factor), e.g., reduction of greenhouse gas emissions in their production activity
- Exclusively for social purposes (S Factor), e.g., promoting safety in the workplace
- Exclusively for purposes related to corporate governance (G Factor), e.g., promoting ethical business practices
- For a mix of initiatives with purposes in all three directions (environmental, social, and governance - ESG Factors)
- I would not be interested in investing this amount of money in ESG financial products

Q3 (if Q2 ≠ from not interested): What percentage of your portfolio would you like to be invested in ESG products?
Answer:

- Not at all (0%)
- A little (less than 25%)
- Quite (between 25% and 50%)
- A lot (between 50% and 75%)
- All or almost all (more than 75%)

Q4 (if Q2 ≠ from not interested): Assuming you want to invest in stocks with sustainability characteristics, would you prefer to choose between (randomized order):
Answer:

- stocks personally selected in order to identify the optimal mix for her between risk, return, and sustainability
- equity funds, in which the selection is made by operators specialized in the topic, delegating the optimal mix of all dimensions involved (risk, return, and sustainability)

Q5: In the following questions, we will ask you to choose between two securities that have the same risk profile but differ in return and sustainability profile.
You will be asked to tell us which security you would prefer between security A, which has no ESG certification, and security B, which does have such certification, under four different annual return scenarios.

Scenario	Security A (non-ESG)	Security B (ESG)
1	2% annual return	2% annual return
2	3% annual return	2% annual return
3	4% annual return	2% annual return
4	2% annual return	3% annual return

In conclusion, we would like to ask you some questions necessary to process the results of our study. This information request has been structured in such a way that the respondent cannot be identified in any way.

- Gender
  - Male
  - Female
  - Other
  - Prefer not to answer

- Birth cohort
  - 1930 or earlier
  - 1940
  - 1950
  - 1960
  - 1970
  - 1980
  - 1990
  - 2000 or later
  - Prefer not to answer

- Education
    - Elementary School
    - Middle School
    - High School
    - Graduate
    - Post-graduate
    - Prefer not to answer

- Birth region
    - List of all Italian regions and “abroad”
    - Prefer not to answer

- Residence region
    - List of all Italian regions and “abroad”
    - Prefer not to answer

- Investment horizon
    - Short (Less than 1 year)
    - Medium (between 1 and 5 years)
    - Long (over 5 years)
    - Prefer not to answer

- Are engaged in any volunteering?
    - Yes
    - No
    - Prefer not to answer

- How concerned are you about the climate crisis?
    - Not at all
    - Little
    - Quite a lot
    - A lot
    - Prefer not to answer

- How concerned are you about pollution?
    - Not at all
    - Little
    - Quite a lot
    - A lot
    - Prefer not to answer

Appendix B – Definition of variables

Variable	Definition
Rome	Binary variable taking value 1 if the respondent is interviewed in Rome, 0 otherwise
Knowledge	Binary variable assuming value 1 if answer to Q1 is "Yes", 0 if answer to Q1 is "No"
Factor of Interest	Categorical variable indicating which direction, if any, would the investor care the most in ESG products (based on answers to Q2), i.e.: 1 = for Factor E; 2 = for Factor S; 3 = for factor G; 4 = for the mix of the three above, i.e., ESG Factors; 5 = not interested in ESG financial products
Ideal allocation	Ordinal variable indicating the ideal amount of ESG in financial portfolio, and taking the following values (based on answers to Q3): 1= 0% 2 = less than 25% 3 = between 25% and 50% 4 = between 50% and 75% 5 = more than 75%
Selection	Categorical variable indicating the preferred type of ESG investment, and assuming the following values (based on answers to Q4): 1= direct investments (assets personally selected by the investor) 2 = indirect investments (assets selected by a fund)
WTP	Variable representing the respondent's willingness to pay i.e., the highest return he/she is willing to sacrifice for sustainability. Specifically, WTP $=$ max (w_S) where $w_s = \max($ return of non-ESG asset $-$ return of ESG asset; $0)$, where $s = 1, 2, 3, 4$ are the four scenarios in Q5. WTP thus takes values 0%, 1% or 2%.
Male	Binary variable taking value 1 if the respondent is Male, 0 otherwise
Birth cohort	Ordinal variable indicating the birth cohort, and taking the following values: 1= birth year up to 1949 2 = birth year between 1950 and 1959; 3 = birth year between 1960 and 1969; 4 = birth year between 1970 and 1979; 5 = birth year equal or after 1980
Birth Area	Categorical variable taking the following values: 1 = North 2 = Centre 3 = South and Islands 4 = Abroad "North", "Centre", "South and Islands" correspond to the regional divisions defined by the Italian National Institute of Statistics (ISTAT)
Education	Ordinal variable representing the respondent's highest education level achieved, and taking the following values:

	1= Primary school; 2 = Middle school; 3 = High school; 4 = Graduate; 5 = Post-graduate
Investment horizon	Ordinal variable representing the respondent's preferred investment horizon, and taking values: 1 = less than 1 year 2 = between 1 and 5 years 3 = 5 years or longer
Climate	Binary variable taking value 1 if the respondent declared to be “Quite a lot” or “A lot” concerned about the climate crisis, and 0 otherwise.
Pollution	Binary variable taking value 1 if the respondent declared to be “Quite a lot” or “A lot” concerned about pollution, and 0 otherwise.
Volunteering	Binary variable assuming value 1 if the respondent is engaged in volunteering, and 0 otherwise
Treatment	Categorical variable representing the customer assignment group upon survey participation acceptance, and taking values: 1 = "Positive Visual" 2 = "Negative Visual" 3 = "Control"
Incoherent	Binary variable assuming value 1 if the respondent makes incoherent choices in Q5, 0 otherwise. We consider as incoherent the following choices: - Respondent declares a 2% WTP in Scenario 3, but does not accept a 1% WTP in Scenario 2 - respondent has a non-zero WTP in Scenarios 2 and 3, but eventually selects the non-ESG asset despite its lower return in Scenario 4 - respondent selects ESG asset in Scenario 1, i.e., when it has the same return as the non-ESG asset, but not in Scenario 4, when it has a higher return
ESG Attitude	Categorical variable assuming one of the following labels based on choices in Q5: • "Clearly averse" if the respondent selects the non-ESG asset both when it has the same return and when it has a lower return than the ESG asset (Scenarios 1 and 4, respectively); • "Weakly averse" if the respondent selects the non-ESG asset when its return is equal to that of the ESG asset (Scenario 1) but switches to the ESG asset when it offers a higher return (Scenario 4); • "Inconsistent" if the respondent selects the ESG asset when its return is equal to that of the non-ESG asset (Scenario 1) but then chooses the non-ESG asset when it has a lower return (Scenario 4); • "Non averse" if the respondent selects the ESG asset both when its return is equal to and higher than that of the non-ESG asset (Scenarios 1 and 4, respectively)

Appendix C

In this appendix we report results on other issues elicitable from the present survey: the knowledge, the interest (considering both the factor of interest and the ideal allocation), and preferences for indirect vs. direct selection. To do so, we consider the following estimation model:

$$Y_i = f(\beta_0 + \boldsymbol{X\beta}) + \varepsilon_i \qquad (C1)$$

where:

- Y_i can be:
    - a binary variable for knowledge (assuming value 1 when the respondent has already heard about sustainable assets and 0 otherwise), interest (assuming value 1 when the variable factor of interest $\neq 5$ i.e. "Not interested" and 0 otherwise), indirect selection (assuming value 1 when the respondent prefers indirect selection of ESG assets and 0 otherwise)
    - an unordered categorical variable for factor of interest (E, S, G, ESG mix, Not interested)
    - an ordered categorical variable for allocation (Not interested, less than 25%, between 25% and 50%, more than 50%)
- f represents the cumulative distribution function of a Normal distribution when Y_i is a binary variable, meaning that the functional form of the model is a probit. When Y_i is an ordered or unordered categorical variable, the model is extended to an ordered probit or multinomial probit respectively
- $\boldsymbol{X}$ is a vector of regressors, including various combinations of the following set of variables:
    - Demographic: gender (dummy for being a male), birth cohort (dummy for being relatively young, i.e. born after 1980), birth area (categorical: North – the reference category –, Centre, South and islands, abroad) and level of education (dummy for being at least graduated).
    - Survey city (dummy for being interviewed in Rome).
    - Financial horizon: a categorical variable indicating whether the preferred investment horizon is below 1 year (short, the reference category), between 1 and 5 years (medium) or otherwise (long).

- Social preferences: which are controlled with a combination of a dummy for being engaged in volunteer activity and a dummy for being concerned (quite a lot or a lot) for climate change or similarly so for pollution.
- Treatment: the dummy T_i^+ for respondent *i* receiving the positive visual treatment and the dummy T_i^- for respondent *i* receiving the negative visual treatment
- Answers given to previous questions of the questionnaire: knowledge (dummy for having already heard about sustainable assets), interest for ESG mix (dummy for preferring the ESG mix in Q2), allocation (ordered: Not interested – the reference category –, less than 25%, between 25% and 50%, more than 50%).

- ε_i is the error term.

To be noted that dependent variables such as knowledge and allocation may also be used as control variables in model specifications with a different Y_i.

Main results are summarized by the following associations. The probability of knowing about ESG assets is higher for male respondents, those born in the North of Italy and with a medium or long investment horizon (see Table A1). As for the probability of being interested in ESG assets (compared to not being interested), it is lower for male respondents, but higher for those concerned about climate change or pollution (see Table A2). When, in Table A3, we dissect the interest by considering E/S/G factors, the probability of being interested in E assets is higher for respondents with climate concerns, while the probability of being interested in S assets is lower for male respondents, graduated and those already knowing ESG assets. Further, graduates are more likely to express interest in the ESG (mix) factor, suggesting a broader understanding or a more holistic approach to sustainable investing. However, there are no significant associations between the probability of being interested in G assets and the variables considered. From estimates on the ideal allocation, it emerges that male respondents are less likely to allocate a higher percentage of their investments to ESG assets, whereas respondents with a medium or long investment horizon and climate concerns are more likely to do so (see Table A4). Finally, the probability of preferring indirect (via funds) vs. direct selection of ESG assets is higher for respondents interviewed in Roma, with a medium or long horizon and interested in the ESG (mix) factor (see Table A5). Finally, it is worth stressing that the treatment never has a significant causal effect on the outcomes examined in the present appendix.

Table A1. Results knowledge

VARIABLES	(1) Knowledge	(2) Knowledge	(3) Knowledge	(4) Knowledge
Male	0.0940*	0.1014**	0.0984*	0.1057**
	(0.050)	(0.046)	(0.051)	(0.047)
Young	-0.0387	-0.0420	-0.0440	-0.0474
	(0.064)	(0.072)	(0.063)	(0.074)
Birth = Centre	-0.2363**	-0.2215**	-0.2343**	-0.2185**
	(0.118)	(0.111)	(0.118)	(0.109)
Birth = South and islands	-0.2725**	-0.2799***	-0.2618**	-0.2674**
	(0.109)	(0.103)	(0.110)	(0.104)
Birth = Abroad	-0.2062*	-0.2027**	-0.2028*	-0.1972*
	(0.115)	(0.103)	(0.117)	(0.103)
Graduate	0.0839	0.0905*	0.0897	0.0961*
	(0.055)	(0.052)	(0.056)	(0.052)
City = Rome	0.0248	0.0153	0.0265	0.0166
	(0.100)	(0.103)	(0.099)	(0.101)
Investment horizon = Medium	0.1341*	0.1318*	0.1351*	0.1343*
	(0.074)	(0.069)	(0.075)	(0.069)
Investment horizon = Long	0.1812*	0.1738**	0.1797*	0.1729**
	(0.096)	(0.078)	(0.098)	(0.079)
Volunteer	0.0447	0.0501	0.0509	0.0572
	(0.062)	(0.059)	(0.062)	(0.059)
Climate	-0.0691		-0.0673	
	(0.079)		(0.080)	
Pollution		-0.0866		-0.0881
		(0.134)		(0.134)
T_i^+			-0.0290	-0.0384
			(0.066)	(0.063)
T_i^-			0.0515	0.0464
			(0.064)	(0.063)
Observations	355	356	355	356
R-squared	0.0720	0.0710	0.0753	0.0746

Notes: The table reports marginal effects from probit models, estimated with bootstrap standard errors (150 replications, with seed 1979) that are reported in parentheses. ***, ** and * represent significance at 1, 5, 10% levels, respectively.

Table A2. Results Interest ESG

VARIABLES	(1) Interest	(2) Interest	(3) Interest	(4) Interest
Male	-0.0774*	-0.0833**	-0.0775*	-0.0833**
	(0.041)	(0.034)	(0.042)	(0.036)
Young	0.0677	0.0713	0.0677	0.0707
	(0.042)	(0.045)	(0.043)	(0.046)
Birth = Centre	-0.1058	-0.1284	-0.1021	-0.1245
	(0.086)	(0.102)	(0.090)	(0.104)
Birth = South and islands	-0.0265	-0.0150	-0.0195	-0.0082
	(0.064)	(0.073)	(0.067)	(0.073)
Birth = Abroad	-0.0496	-0.0560	-0.0420	-0.0466
	(0.083)	(0.095)	(0.086)	(0.092)
Graduate	-0.0057	-0.0100	-0.0030	-0.0080
	(0.039)	(0.034)	(0.039)	(0.034)
City = Rome	0.0615	0.0818	0.0617	0.0826
	(0.075)	(0.087)	(0.078)	(0.091)
Investment horizon = Medium	0.0857	0.0954*	0.0875	0.0975*
	(0.054)	(0.055)	(0.057)	(0.058)
Investment horizon = Long	0.0484	0.0624	0.0444	0.0590
	(0.074)	(0.071)	(0.080)	(0.075)
Volunteer	0.0235	0.0115	0.0279	0.0169
	(0.043)	(0.038)	(0.045)	(0.038)
Climate	0.1690***		0.1652**	
	(0.064)		(0.066)	
Pollution		0.2442**		0.2374**
		(0.108)		(0.110)
Knowledge			0.0023	0.0036
			(0.046)	(0.044)
T_i^+			-0.0441	-0.0448
			(0.046)	(0.045)
T_i^-			0.0118	0.0110
			(0.044)	(0.042)
Observations	355	356	355	356
R-squared	0.100	0.0910	0.107	0.0978

Notes: The table reports marginal effects from probit models, estimated with bootstrap standard errors (150 replications, with seed 1979) that are reported in parentheses. ***, ** and * represent significance at 1, 5, 10% levels, respectively.

Table A3. Results Interest in ESG different factors

VARIABLES	(1) E factor	(2) S factor	(3) G factor	(4) ESG MIX factor	(5) Not interested
Male	-0.0198	-0.1160***	0.0082	0.0490	0.0786*
	(0.042)	(0.038)	(0.025)	(0.052)	(0.047)
Young	-0.0417	-0.0293	-0.0021	0.1428	-0.0697*
	(0.077)	(0.043)	(0.111)	(0.125)	(0.040)
Birth = Centre	-0.0608	0.1063	-0.0369	-0.1027	0.0941
	(0.070)	(0.078)	(0.031)	(0.106)	(0.091)
Birth = South and islands	-0.0673	0.0987	-0.0263	-0.0270	0.0218
	(0.089)	(0.063)	(0.154)	(0.143)	(0.061)
Birth = Abroad	0.0195	0.0887	-0.0123	-0.1479	0.0520
	(0.110)	(0.094)	(0.036)	(0.130)	(0.097)
Graduate	-0.0143	-0.0732**	-0.0032	0.0895*	0.0012
	(0.042)	(0.036)	(0.021)	(0.051)	(0.049)
City = Rome	0.0845	-0.0442	0.0479	-0.0340	-0.0542
	(0.074)	(0.075)	(0.053)	(0.111)	(0.076)
Investment horizon = Medium	-0.0198	0.0535	0.0204	0.0329	-0.0870
	(0.053)	(0.038)	(0.027)	(0.077)	(0.070)
Investment horizon = Long	-0.0519	0.0545	-0.0033	0.0401	-0.0394
	(0.068)	(0.043)	(0.012)	(0.071)	(0.084)
Volunteer	-0.0672	0.0510	0.0234	0.0232	-0.0304
	(0.049)	(0.050)	(0.027)	(0.077)	(0.044)
Climate	0.1444***	-0.0797	-0.0328	0.1343	-0.1662***
	(0.039)	(0.063)	(0.040)	(0.083)	(0.054)
Knowledge	-0.0502	-0.0672**	0.0287	0.0917	-0.0029
	(0.055)	(0.033)	(0.029)	(0.070)	(0.043)
T_i^+	0.0396	-0.0386	-0.0089	-0.0358	0.0437
	(0.047)	(0.047)	(0.024)	(0.064)	(0.043)
T_i^-	0.0392	-0.0184	-0.0024	-0.0081	-0.0103
	(0.057)	(0.054)	(0.028)	(0.052)	(0.049)
Observations	355	355	355	355	355
LogLikelihood	-391.5	-391.5	-391.5	-391.5	-391.5

Notes: The table reports marginal effects from multinomial probit model, estimated with bootstrap standard errors (150 replications, with seed 1979) that are reported in parentheses. ***, ** and * represent significance at 1, 5, 10% levels, respectively.

Table A4. Results ESG Allocation

VARIABLES	(1) Not interested	(2) Less than 25%	(3) 25% - 50%	(4) More than 50%
Male	0.0569**	0.0469**	-0.0510**	-0.0528**
	(0.028)	(0.022)	(0.024)	(0.026)
Young	-0.0197	-0.0167	0.0173	0.0192
	(0.031)	(0.029)	(0.027)	(0.033)
Birth = Centre	0.0539	0.0481	-0.0496	-0.0523
	(0.050)	(0.044)	(0.047)	(0.047)
Birth = South and islands	0.0400	0.0382	-0.0366	-0.0415
	(0.043)	(0.040)	(0.040)	(0.043)
Birth = Abroad	0.1375**	0.0824**	-0.1247**	-0.0951**
	(0.065)	(0.034)	(0.058)	(0.039)
Graduate	-0.0167	-0.0133	0.0148	0.0153
	(0.026)	(0.020)	(0.023)	(0.023)
City = Rome	0.0092	0.0074	-0.0082	-0.0084
	(0.042)	(0.034)	(0.038)	(0.038)
Investment horizon = Medium	-0.0752*	-0.0473**	0.0685*	0.0540**
	(0.040)	(0.024)	(0.039)	(0.025)
Investment horizon = Long	-0.0921*	-0.0643*	0.0834*	0.0730*
	(0.050)	(0.039)	(0.046)	(0.043)
Volunteer	-0.0278	-0.0235	0.0244	0.0269
	(0.028)	(0.025)	(0.024)	(0.028)
Climate	-0.1269**	-0.0651***	0.1139**	0.0781***
	(0.057)	(0.018)	(0.049)	(0.025)
Knowledge	-0.0336	-0.0278	0.0300	0.0314
	(0.029)	(0.025)	(0.027)	(0.027)
T_i^+	0.0380	0.0278	-0.0342	-0.0316
	(0.031)	(0.023)	(0.029)	(0.026)
T_i^-	-0.0098	-0.0092	0.0086	0.0104
	(0.028)	(0.027)	(0.025)	(0.030)
Observations	355	355	355	355
R-squared	0.0497	0.0497	0.0497	0.0497
Wald Chi	44.52	44.52	44.52	44.52
pvalue Chi2	4.88e-05	4.88e-05	4.88e-05	4.88e-05
LogLikelihood	-427	-427	-427	-427

Notes: The table reports marginal effects from ordered probit model, estimated with bootstrap standard errors (150 replications, with seed 1979) that are reported in parentheses. ***, ** and * represent significance at 1, 5, 10% levels, respectively.

Table A5. Results Indirect Selection

VARIABLES	(1) Indirect Selection	(2) Indirect Selection	(3) Indirect Selection	(4) Indirect Selection
Male	-0.0545	-0.0669	-0.0612	-0.0740
	(0.057)	(0.053)	(0.057)	(0.050)
Young	-0.0336	-0.0302	-0.0462	-0.0435
	(0.079)	(0.068)	(0.087)	(0.077)
Birth = Centre	-0.1518	-0.1795*	-0.1558	-0.1872*
	(0.106)	(0.105)	(0.123)	(0.109)
Birth = South and islands	-0.1648	-0.1572*	-0.1607	-0.1605
	(0.109)	(0.088)	(0.116)	(0.099)
Birth = Abroad	-0.0950	-0.1030	-0.0630	-0.0730
	(0.112)	(0.115)	(0.124)	(0.122)
Graduate	-0.0371	-0.0450	-0.0556	-0.0619
	(0.060)	(0.059)	(0.062)	(0.064)
City = Rome	0.1321	0.1533*	0.1504*	0.1727**
	(0.087)	(0.091)	(0.091)	(0.085)
Investment horizon = Medium	0.1819**	0.1862**	0.1874**	0.1900**
	(0.080)	(0.074)	(0.086)	(0.079)
Investment horizon = Long	0.1713	0.1874**	0.1656	0.1810*
	(0.105)	(0.087)	(0.112)	(0.101)
Volunteer	-0.1002	-0.1123*	-0.1063	-0.1203*
	(0.064)	(0.062)	(0.066)	(0.064)
Climate	0.1450		0.1314	
	(0.094)		(0.102)	
Pollution		0.2868*		0.2764
		(0.162)		(0.171)
Knowledge			-0.0339	-0.0433
			(0.062)	(0.057)
T_i^+			0.0247	0.0379
			(0.079)	(0.065)
T_i^-			0.0060	0.0136
			(0.067)	(0.082)
Interest for ESG Mix			0.1318**	0.1388**
			(0.059)	(0.065)
ESG allocation = less than 25%			-0.0779	-0.0427
			(0.141)	(0.150)
ESG allocation = between 25% and 50%			-0.0592	-0.0156
			(0.141)	(0.146)
ESG allocation = more than 50%			0.0119	0.0510
			(0.149)	(0.166)
Observations	307	308	307	308
R-squared	0.0475	0.0517	0.0650	0.0717

Notes: The table reports marginal effects from probit models, estimated with bootstrap standard errors (150 replications, with seed 1979) that are reported in parentheses. ***, ** and * represent significance at 1, 5, 10% levels, respectively.