

ESG in investor profiling: what are we talking about?

Andrea Lippi

Università Cattolica del Sacro Cuore Sede di Piacenza e Cremona, Piacenza, Italy, and

Federica Poli

*Department of Economics and Business Administration,
Università Cattolica del Sacro Cuore, Milano, Italy*

Abstract

Purpose – Inspired by the groundbreaking novel European regulations on financial investors' profiling (MiFID II regulation and the ESMA 2022 Guidelines), this paper aims to establish which distinctive socio-demographic traits distinguish investors who declare a generalized interest in all three environmental (E), social (S), and governance (G) pillars and investors who express interest in just one individual pillar or a combination of two pillars.

Design/methodology/approach – Based on a unique dataset of 190 real-world retail investors, this paper aims to create a profile of three types of investor: those whose interest lies in just the environmental pillar, those interested in a combination of the environmental and social pillars, and those interested in all three E, S, and G pillars jointly. Moreover, we try to ascertain whether it is possible to observe statistically significant differences between the different types of investors.

Findings – The results obtained indicate that it is possible to profile investors who are environmentally-oriented and investors who are ESG-oriented. Notably, levels of financial literacy do not influence investor ESG attitudes.

Practical implications – The results obtained may have multifaceted implications for financial advisors, the banking and financial institution industry, and marketing strategists, as well as for further research.

Originality/value – The originality of this paper derives from the responses used in the analysis, which were collected from a sample of real-world retail investors who completed a mandatory MiFID-questionnaire, validated by the Italian Securities and Markets Supervisory Authority. Our paper thus represents a bridge between a theoretical approach and real-world practice.

Keywords Investor ESG attitudes, Sustainable and responsible investors, Financial literacy, Green finance
Paper type Research paper

1. Introduction

Since 2004, EU legislation has regulated adequacy assessment through the Markets in Financial Instruments Directive 2004/39/EC, (known as MiFID) to ensure that retail investors allocate their savings to financial products that are appropriate to their personal attitudes towards risk. The subsequent Directive 2014/65/EU, the so-called MiFID II, has further enhanced the rules for adequacy assessment, imposing on banks and financial intermediaries the obligation to carefully verify their customers' levels of financial knowledge. Consequently, the financial market supervisory authorities have paid particular attention to the tools used for collecting information on customers to assess their adequacy, which takes the form of the so-called MiFID questionnaire. In the implementation of the Action Plan

JEL Classification — G11; G41; Q56

© Andrea Lippi and Federica Poli. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licences/by/4.0/legalcode>

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



to finance sustainable growth published by the European Commission in March 2018, the Delegated Regulation (EU) 2021/1253, applicable from 2 August 2022, highlights the obligation for banks and financial intermediaries to acquire information on customers' individual sustainability preferences (their so-called ESG profile) and to take this information into account when recommending financial products that are suitable for them. Furthermore, integrating sustainability criteria into the investment process is one of the main innovations in the new European Securities and Markets Authority (ESMA) Guidelines published on 23 September 2022.

More specifically, according to the ESMA 2022 Guidelines, banks and financial intermediaries must collect investors' statements regarding their sustainability preferences (their ESG profile) using the MiFID questionnaire. If the investor is not interested in sustainability issues, the financial advisor can offer financial products with or without sustainability-related features. Conversely, if the investor does express an interest in sustainability, the financial advisor has to establish the type of preference they hold in relation to one or more of the following:

- a) eco-sustainable investments (compliant with Regulation (EU) 2020/852, art. 2, point 1);
- b) sustainable investments (compliant with Regulation (EU) 2019/2088, the Sustainable Finance Disclosure Regulation, the so-called SFDR, art. 2, point 17);
- c) investments that consider Principal Adverse Impacts (PAI).

Principal Adverse Impacts (PAI) are the most significant negative impacts of investments on the environment and people. When an investor considers PAI in their decision-making on asset allocation, it means that they are seeking to reduce the negative impacts of the products or financial instruments they invest in. Thus, according to the ESMA 2022 Guidelines, if an investor expresses a preference for investments that consider PAI, the financial advisor must delve deeper into the issue by specifically focusing on E, S, or G, thus disaggregating the acronym ESG into its component parts, which must be considered individually.

The Italian securities and markets supervisory authority (Commissione Nazionale per la Società e la Borsa, CONSOB) complies with the MiFID II and ESMA 2022 Guidelines, imposing on banks and financial intermediaries the duty to collect this information from their investors. This new regulatory framework opens new frontiers of research in the field of investor choices and has stimulated the genesis of this paper. Indeed, this paper aims to establish which distinctive socio-demographic traits distinguish investors who are only interested in the environmental theme, the social theme, or the governance theme, in a specific combination of the three, and in all three ESG pillars together without differentiation between them.

In the literature, the real-world non-professional investor's attitude toward sustainability is defined by socio-demographic characteristics such as gender, age, and education level (e.g. [Junkus and Berry, 2010](#); [McLachlan and Gardner, 2004](#); [Williams, 2007](#)) even if the results obtained are not always consistent ([Gutsche et al., 2019](#)). Our paper improves the existing literature on the profile of the socially responsible investor (e.g. [Beal and Goyen, 1998](#); [Woodward, 2000](#); [Nilsson, 2008](#); [Jukus and Berry, 2010](#); [Bethlendi et al., 2022](#)) in an original way. While in previous studies (e.g. [Beal and Goyen, 1998](#); [McLachlan and Gardner, 2004](#); [Valor et al., 2009](#); [Pérez-Gladish et al., 2012](#)) the questionnaires used differ in the number and type of questions they pose, the questionnaire we used in this paper is MiFID II compliant and is validated by the Italian supervisory authority (CONSOB). We chose this questionnaire because it represents a connection between practice and academic literature. The MiFID questionnaire was employed for instance in the empirical studies performed by [Bajo et al. \(2015\)](#), [Broihanne \(2022\)](#), and [Broihanne et al. \(2023\)](#). As specified by CONSOB (2022), the

questionnaire used by Italian intermediaries, one the hand, complies with the regulatory dictate and ESMA guidelines and, on the other hand, is aligned with the vast literature within disciplines such as psychometrics, cognitive psychology, experimental economics, and behavioral finance. Indeed, the areas of analysis and the questions included in the CONSOB questionnaire are based on robust academic literature. For example, the questions to collect socio-demographic information, individual traits, value profiles, beliefs, and fears (including ESG investment preferences) are based on the studies of [Sparkers and Cowton \(2004\)](#), [Falk et al. \(2023\)](#), [Wiesel et al. \(2017\)](#), [Anderson and Robinson \(2019\)](#), [Broadback et al. \(2019\)](#), [Schoemaker and Schramade \(2018\)](#), and [Alemanni \(2022\)](#). The questions about financial knowledge are inspired by [Gutsche and Zwergel \(2020\)](#), [Aristei and Gallo \(2021\)](#), [Gutsche et al. \(2021\)](#), and [Anderson and Robinson \(2022\)](#). The area of portfolio asset allocation preferences is linked with the study of [Dorflleitner and Nguyen \(2016\)](#). Therefore, as the investor profile resulting from the questionnaire is used by financial advisors to propose appropriate asset allocation in terms of risk level and preferences for sustainable products, our paper represents a bridge between the theoretical approach and practical application in allocating sustainable assets to a portfolio.

We collected data from a sample of 190 real-world retail investors, provided to us by a leading Italian bank. We are conscious that the sample examined is not very extensive; however, we may neglect the size of the sample as argued by [Kahneman and Tversky \(1972\)](#). Moreover, other related studies have considered similar sample sizes (e.g. [McLachlan and Gardner, 2004](#); [Doncel et al., 2008](#); [Pérez-Gladish et al., 2012](#); [Valor et al., 2009](#)). Some variables examined in previous literature (such as income and wealth) are not included in our analysis due to constraints imposed by the data provider.

Our results are worthy of attention because they identify a difference at a socio-demographic level between investors who are only interested in the environmental pillar and those who are interested in all three E, S and G pillars together. As a consequence, our results may have implications for financial advisors, marketing strategists and robot-advised platform, as well as for further research.

The remainder of the paper is organized as follows: [Section 2](#) presents previous literature and our hypotheses; the sample description is presented in [Section 3](#); the analysis methodology is shown in [Section 4](#); and [Section 5](#) presents a discussion of the main results and offers conclusions.

2. Conceptual frameworks, previous research, and hypotheses

According to classical economic theory, consumers' choices are guided by the maximization of their utility function ([Von Neumann and Morgenstern, 1944](#)). However, this principle does not seem to operate perfectly in investors' financial choices due to certain distortions, such as information asymmetries ([Stiglitz and Weiss, 1981](#)) or bounded rationality ([Kahneman, 2003](#)). The topic of choice in the financial field, and with specific reference to portfolio asset allocation, is more complex and ethical and moral dimensions have also been included in the utility model as possible drivers of choice ([Beal and Goyen, 1998](#); [Levitt and List, 2007](#)).

Several studies in the literature have examined the demographic characteristics of socially responsible consumers (e.g. [Laroche et al., 2001](#)) and, in recent years, studies have attempted to profile the socially responsible investor (e.g. [McLachlan and Gardner, 2004](#); [Valor et al., 2009](#); [Pérez-Gladish et al., 2012](#)). The existing literature on socially responsible investors includes studies on the motivations that drive sustainable investing (e.g. [Beal et al., 2005](#); [Williams, 2007](#)). As demonstrated by [Rosen et al. \(1991\)](#) and [Lewis \(2001\)](#), some investors do not wish to obtain profits by investing in companies that behave immorally or unethically. Some investors are driven by personal emotional benefits, for example, positive feelings that arise from acting in a

socially responsible manner or from supporting a “good” cause (Lewis, 2001; Beal *et al.*, 2005; Heeb *et al.*, 2023). Others are interested in better financial performance through social and responsible investments (Chatterji *et al.*, 2009; Nilsson, 2009). In the literature on socially responsible investors, gender, age, educational level, financial literacy, employment status, and income level have all been considered (e.g. Warren *et al.*, 1990; Junkus and Berry, 2010; Pérez-Gladish *et al.*, 2012). Hafenstein and Bassen (2016), using data collected from an online survey of 444 non-professional German investors, revealed that non-professional investors do not differentiate between the different aspects of sustainability issues in ESG categories, but regard them as belonging together as one joint factor. Most recently, Bethlendi *et al.* (2022) argued that the demand for green financial products is influenced by several factors such as investors’ socio-demographic characteristics, economic preferences, and financial (and green) knowledge. At the same time, the authors presented a theoretical framework demonstrating that the consumers of green finance are not homogeneous and confirmed socio-demographic profile as playing the main role in households that select green financial products. Following this approach, this paper aims to identify the profile of the real-world retail investors who are more interested in one individual ESG pillar (i.e. more interested in just one out of environmental, social, or governance issues), in a combination of two pillars (for example the environment and social issues or environment and governance) or all three ESG pillars without making any distinction between them.

2.1 Gender

Studies on the relationship between investor gender and attitude to ESG investment are mainly convergent in their findings. Although Lewis and Mackenzie (2000) found that the major investors in a UK ethical unit trust were male, Roberts (1996) and Laroche *et al.* (2001) showed that women are more socially responsible than men. Tippet and Leung (2001) confirmed that women seem readier to invest in socially responsible financial products. In the same vein, Junkus and Berry (2010) argued that the typical socially responsible investor is female, a result confirmed by Diouf *et al.* (2016). Beal and Goyen (1998) and Junkus and Berry (2010) found that women tend to invest a greater portion of their mutual fund investment portfolio in SRI-profiled mutual funds than men. Based on this previous research, we formulate the following hypothesis:

- H1. Female investors are more oriented towards all three E, S, and G pillars jointly than men.

2.2 Age

Rosen *et al.* (1991) and Tippet and Leung (2001) argued that socially responsible investors are mainly young people. Analogously, Hayes (2001) found that people aged between 18 and 34 have a stronger inclination towards ESG investments. Starting from an interdisciplinary review of the literature, Diamantopoulos *et al.* (2003) tested a large nationwide sample of British consumers. They demonstrated that young people are more socially oriented than older people. Similarly, using data from a survey of the retail clients of two Netherlands banks specialized in the provision of exclusively socially responsible investments, Bauer and Smeets (2015) demonstrated that young people identify more with socially responsible investments compared to others. McLachlan and Gardner (2004) introduced a distinction between conventional and ethical investors, supporting the idea that younger investors are more socially responsible than others. Woodward (2000), Nilsson (2008), and Junkus and Berry (2010) argued that younger investors invest a greater portion of their mutual fund investment portfolio in SRI-profiled mutual funds than older investors. Conversely, D’hondt *et al.* (2022), using both survey and trading data from 9,286 retail investors between 2005 and 2011, maintained that the older the investor, the higher their exposure to the three ESG

factors. The same conclusion was drawn by [Hafenstein and Bassen \(2016\)](#), and again by [Rossi et al. \(2019\)](#), who used a specific questionnaire administered to a representative panel of Dutch households. [Lewis and Mackenzie \(2000\)](#), using a specific survey administered to the investors in a UK ethical unit trust, found that the majority are over 45 years of age. Bearing in mind these mixed results, we formulate the following hypothesis:

- H2.* Older investors are more oriented to all three E, S, and G pillars jointly than younger investors.

2.3 Education level

The studies by [McLachlan and Gardner \(2004\)](#) and [D'hondt et al. \(2022\)](#) showed that highly educated investors present low ESG scores in the allocation of their portfolio assets. In particular, [Anderson and Robinson \(2022\)](#) concluded that investors with strong pro-environmental behaviors and beliefs are generally uninterested in financial matters. However, the majority of the literature on this topic asserts the opposite. [Rosen et al. \(1991\)](#), [Woodward \(2000\)](#), [Tippet and Leung \(2001\)](#), [Haigh \(2008\)](#), [Nilsson \(2008\)](#), [Junkus and Berry \(2010\)](#), and [Bauer and Smeets \(2015\)](#), among others, argued that better-educated investors invest a greater portion of their mutual fund investment portfolio in SRI-profiled mutual funds than less educated investors. [Riedl and Smeets \(2017\)](#) and [Rossi et al. \(2019\)](#) found that individuals with university degrees are more likely to invest in SRI funds than less educated investors. Based on this literature review, we formulate the following hypothesis:

- H3.* Better-educated investors are more oriented to all three E, S, and G pillars jointly.

2.4 Financial literacy and financial knowledge

Previous works (e.g. [Chen and Volpe, 1998](#); [Lusardi and Mitchell, 2007, 2008, 2014](#)) have considered financial literacy and financial knowledge to be interchangeable and we follow this approach in this paper. Few studies exist on the relationship between financial literacy and ESG portfolio choices. [Gutsche et al. \(2021\)](#) found a positive relationship between financial literacy and attitude toward sustainable investments. [Rossi et al. \(2019\)](#), [Anderson and Robinson \(2022\)](#), and [D'hondt et al. \(2022\)](#) found a negative relationship between financial literacy and ESG portfolio scores. [Varmaz et al. \(2022\)](#) showed that financial literacy is negatively associated with students' choice of ESG investment funds, although financial literacy is not significant. Based on this contradictory literature review, we formulate the following hypothesis:

- H4.* More financially literate investors are more oriented to all three E, S, and G pillars jointly than others.

2.5 Employment status

Very few studies have considered employment status as a variable that influences investment decision-making with respect to ESG financial products. [Rosen et al. \(1991\)](#) compared two groups of investors in mutual funds: socially responsible investors versus "standard" investors. They considered age, marital status, income, educational level, and employment status. They found that 81% of socially responsible investors were white-collar workers, 6.5% were blue-collar workers, and 12.5% were retired. On the other hand, 63% of "standard" investors were white-collar workers, 17% were blue-collar workers and 20% were retired. Despite this segmentation, the authors did not provide statistical evidence of the role played by the investors' employment status in their decision to be a sustainable or a "standard" investor. Based on the statistics presented above, they simply argued that socially responsible investors are more likely to hold white-collar jobs.

Again, Lewis (2001) compared seven groups composed of “standard” investors with seven groups of “ethical or green” investors. Using a qualitative methodology, the author argued that a majority of “ethical or green” investor groups worked in caring professions such as health, teaching, and nursing, thus confirming the conclusion reached by Rosen *et al.* (1991). However, a bias is identifiable in the composition of these groups, because not all kinds of employment status were considered. For example, there were no retired people in the “ethical or green” groups while only one retired soldier was included in the “standard” groups. Based on these very few studies, we formulate the following hypothesis:

H5. Employed investors are more oriented to all three E, S, and G pillars jointly than others.

3. Sample description

In the second half of 2022, 200 mandatory questionnaires completed by real-world investors in line with the European MiFID regulation were randomly selected from those collected by a major Italian bank active in the provision of financial advice. Out of all the collected questionnaires, only 10 respondents declared a lack of interest in ESG financial products. The responses of these clients were not considered for our analysis purposes, both due to their small number and because our specific research interest is aimed at clients who have indicated that they are interested in ESG investment products. Thus, our sample is composed of 190 real-world investors.

3.1 The questionnaire and data collected

Using a questionnaire to profile socially responsible investors is common practice. Through an online survey, Pérez-Gladish *et al.* (2012) considered a sample of 145 investors in Australia to profile socially responsible investors. Valor *et al.* (2009) considered a sample of 400 telephone interviews with Spanish citizens conducted by a specialized market research agency to quantify the demand for socially responsible investments. McLachlan and Gardner (2004) compared a sample of 55 conventional investors and a sample of 54 ethical investors in Australia using a postal questionnaire. In the same vein, we also use a questionnaire. However, the difference between our study and the others is that the questionnaire used in this analysis was not created by us but is officially recognized by the relevant Italian Securities and Markets Supervisory Authority (CONSOB) as meeting the MiFID requirements. It contains, therefore, socio-demographic questions (gender, age, educational level, job position), questions aimed at determining the investor’s financial literacy knowledge, including their investment time horizon, and questions relating to their interest (or lack thereof) in ESG issues, to facilitate building a portfolio asset allocation that adequately considers these aspects. We highlight that the data used in this analysis comes from the questionnaire legally recognized by the relevant authority and that the responses collected are used by banks for customer risk profiling as well as for assessing the consistency of the subscribed investments with the view of sustainability professed.

To provide more details in relation to the responding investors’ preferences in terms of ESG objectives, the investors could choose between ESG goals that are relevant to their specific interests, indicating one or more objectives that could characterize their investments. Based on the data provided to us, we observe that some respondents expressed their interest and attitude as relating solely to the environmental pillar, others (although very few) solely to the social pillar and no one expressed interest purely in the governance dimension. Some expressed interest in the combination of the environmental and social pillars (no other pairings were observed), while others expressed interest in all three E, S and G pillars jointly. These observations allowed us to construct our dependent variable (*ESG_attitude*) as an

ordinal variable that can be assigned a value from 1 to 3, where 1 relates to those customers who are exclusively interested in solely one pillar (environment or social), 2 identifies those investors who are interested in two of the three ESG pillars (specifically environment and social issues), while 3 identifies those individuals who are interested in investing their savings in financial products that pursue all three ESG components without distinguishing between them. Among the independent variables employed in this empirical study, we consider the gender of investors and their age. The latter is a continuous variable (*age*) with its square (*age2*) introduced to account for possible non-linearities that can be interpreted from the contradictory results presented in the literature review (Hallahan *et al.*, 2004; Grable *et al.*, 2006; Faff *et al.*, 2009). To capture the educational attainment of respondents we employed three dummy variables, assuming a value equal to 1 to correspond to the highest level of education held by individuals and 0 otherwise (Table 1). The variable financial literacy (FL) was measured in additive terms, using the sum of the values assigned to respondents' answers to three questions included in the questionnaire which proxy the degree of investors' financial literacy. The first of the three questions concerned the frequency with which respondents obtain information on financial markets' performance. In answering this question, customers could indicate that they collect information regularly, in which case we assigned a value of 2; that they do this monthly, in which case we assigned a value of 1; or,

Variable	Description	Expected sign
<i>Dependent</i>		
ESG_attitude	This indicates the investor's attitude to taking into consideration Environment, Social, and Governance issues when choosing his/her portfolio asset allocation. It is an ordinal variable that considers three categories: 1 indicates that only one issue (environmental or social) is considered; 2 indicates that only two issues (environmental and social) are considered; 3 indicates that environmental, social, and governance issues are considered simultaneously	
<i>Independent</i>		
gender	Dummy variable: 1 if the individual is male; 0 if the individual is female	-
age	Age of each respondent	+/-
age2	Squared value of the age of each investor	
edu_1	Dummy Variable: 1 if the individual has no educational qualifications or if he/she did not complete high school (low level of education)	-
edu_2	Dummy Variable: 1 if the individual completed high school (medium level of education)	+/-
edu_3	Dummy Variable: 1 if the individual holds a university degree or equivalent (high level of education)	+
FL	The score obtained by each investor in answer to 3 specific questions	
nojob	Dummy variable: 1 if the individual does not work	
student	Dummy variable: 1 if the individual is a student	
self-employed	Dummy Variable: 1 if the individual is self-employed	
employed	Dummy Variable: 1 if the individual is salaried	
retired	Dummy Variable: 1 if the individual is retired	
entrepreneur	Dummy Variable: 1 if the individual is an entrepreneur	
LT	Dummy variable: 0 if the individual indicates a short-term investment horizon preference; 1 if the individual indicates a medium-term investment horizon preference; 2 if the individual indicates a long-term investment horizon preference	+
diversification	Dummy variable: 1 if the individual splits assets between banks; 0 otherwise	+/-

Table 1.
The variables used in the analysis

Source(s): Created by authors

finally, that they do not obtain information at all, for which we assigned a value of 0. The second question asked the client to indicate whether the riskiest investments are generally more profitable, requiring a yes or no response. By answering affirmatively, customers demonstrate that they are aware of the relationship between risk and return on financial investments, with the opposite being the case for negative answers. We assigned a value of 1 for a positive answer and 0 for a negative. The third question required the client to assign a level of risk, either low or high, to three financial instruments (specifically, derivatives, stocks, and money market funds). As is well-known, stocks and derivatives present a high risk, and money market funds a low risk. Each of the correct answers was assigned a value equal to 1, with 0 being assigned in the case of incorrect answers. Therefore, the additive variable constructed as a proxy of financial literacy could assume values ranging from 0 to 6, with the maximum value coinciding with the maximum level of financial literacy (see Table 1).

Respondents' employment status is also proxied with dummy variables (see Table 1). Finally, we introduced two original control variables: investment horizon (*LT*) and preference for splitting wealth between banks (*diversification*) (see Table 1). The investment horizon, and in particular the investor's long-term focus (Pérez-Galdish, 2012) is crucial in determining the asset allocation strategy for their portfolio, particularly in ESG investments. In the literature, a relationship is identified between SRI returns and a long time horizon (e.g. Sørensen and Pfeifer, 2011; Fuller, 2012; Wagemans *et al.*, 2013). In line with the prevailing literature (e.g. Dorfleitner and Utz, 2014) we considered short-term as less than one year, medium-term as from one to five years, and a long-term horizon as being more than five years. Thus, respondents with short-term portfolios were assigned an *LT* value of 0, those with medium-term an *LT* value of 1, while those with long-term orientation obtained an *LT* value of 2. The second control variable measures the tendency towards diversification between banks. The variable *diversification* is a dummy that takes the value of 1 if the respondents use more than one bank to manage their financial wealth and 0 if all their wealth is managed by a single bank.

For each variable used in this study, we provide a description and our expectation as to its ESG attitude (Table 1).

3.2 Descriptive statistics

Each investor in our dataset declared themselves interested in investing in ESG financial products but in different ways. Some investors (21.04% of the sample) considered only one pillar (more specifically, 16.32% considered only the environmental aims and 4.74% considered only the social dimension), others (12.11%) took into consideration a combination of environmental and social goals, while 71.58% of investors considered all three ESG aims in their decision-making on asset allocation.

Table 2 shows some descriptive statistics of the overall sample ($N = 190$) and highlights the specific features of the panel of available data. Tables 3, 4, 5, and 6 present some descriptive statistics related to respectively environmental investor profile ($n = 31$; 16.32% of the sample), social investor profile ($n = 9$; 4.74% of the sample), environmental and social investor profile ($n = 14$; 7.37% of the sample), and environmental, social, and governance investor profile ($n = 136$; 71.58% of the sample).

As shown in Table 2, the average age of the investors was 51.54 years. The sample is fairly balanced between men (53.68%) and women (46.32%) and consists of 44.74% employees, 11.58% self-employed workers, 12.11% entrepreneurs, 18.95% retired workers, 5.26% students, and 7.37% unemployed. People with a university degree or equivalent represented 23.68% of the sample, those who only completed high school represented 53.16%, and 23.16% of investors reported a low level of education. In our sample, 57.37% of investors concentrated their entire financial wealth in a single bank and 42.63% spread their savings between several banks.

Variable	Min	Max	Mean	Std. Dev
<i>Dependent variable</i>				
ESG_attitude	1	3	2.5526	0.7593
<i>Independent variables</i>				
gender	0	1	0.5368	0.4999
age	18	93	51.5421	18.2274
age2	324	8,649	2987.079	1933.798
edu_1	0	1	0.2316	0.4230
edu_2	0	1	0.5316	0.5003
edu_3	0	1	0.2368	0.4263
FL	4	6	5.0842	0.6200
nojob	0	1	0.0736	0.2620
student	0	1	0.0526	0.2239
self-employed	0	1	0.1156	0.3208
employed	0	1	0.4474	0.4985
retired	0	1	0.1895	0.3929
entrepreneur	0	1	0.1211	0.3271
LT	0	2	1	0.3563
diversification	0	1	0.4263	0.3271

Table 2.
Summary of dataset's variables

Note(s): This table shows the summary of the variables in the overall dataset ($N = 190$)
Source(s): Created by authors

Variable	Min	Max	Mean	Std. Dev
gender	0	1	0.7742	0.4250
age	22	93	62.1613	21.1504
age2	484	8,649	4296.93	2570.24
edu_1	0	1	0.4194	0.5016
edu_2	0	1	0.4194	0.5016
edu_3	0	1	0.1613	0.3739
FL	4	6	5	0.7746
nojob	0	1	0.0645	0.2497
student	0	1	0.03226	0.1796
self-employed	0	1	0.0968	0.3005
employed	0	1	0.2581	0.4448
retired	0	1	0.3548	0.4864
entrepreneur	0	1	0.1935	0.4016
LT	0	2	1	0.4472
diversification	0	1	0.8065	0.4016

Table 3.
Summary of dataset's variables

Note(s): This table shows the summary of the variables in the dataset considering the environmental investor attitude only ($n = 31$; 16.32% of the overall dataset)
Source(s): Created by authors

Finally, the level of the respondents' financial literacy was quite high; the possible scores using our methodology range from 0 to 6 but in our sample, the range is between 4 and 6.

Table 7 shows the matrix correlation.

4. Methodology and analysis

Our analysis was conducted using a two-step process. For the first step, using their socio-demographic characteristics, we set out to create a profile of three types of investors: those who have a particular interest in just one pillar, those interested in a combination of the

Variable	Min	Max	Mean	Std. Dev
gender	0	1	0.4444	0.5270
age	32	79	49.2222	17.3766
age2	1,024	6,241	2691.22	1895.99
edu_1	0	0	0	0
edu_2	0	1	0.7778	0.4410
edu_3	0	1	0.2222	0.4410
FL	4	6	5	0.5
nojob	0	0	0	0
student	0	0	0	0
self-employed	0	0	0	0
employed	0	1	0.5556	0.5270
retired	0	1	0.1111	0.3333
entrepreneur	0	1	0.3333	0.5
LT	1	1	1	0
diversification	0	1	0.7778	0.4410

Note(s): This table shows the summary of the variables in the dataset considering the social investor attitude only ($n = 9$; 4.74% of the overall dataset)

Source(s): Created by authors

Table 4.
Summary of dataset's
variables

Variable	Min	Max	Mean	Std. Dev
gender	0	1	0.3571	0.4972
age	34	70	48.9286	12.4805
age2	1,156	4,900	2538.64	1243.45
edu_1	0	1	0.1429	0.3613
edu_2	0	1	0.8571	0.3631
edu_3	0	0	0	0
FL	4	6	4.8571	0.8644
nojob	0	0	0	0
student	0	0	0	0
self-employed	0	1	0.0714	0.2672
employed	0	1	0.5714	0.5136
retired	0	0	0	0
entrepreneur	0	0	0	0
LT	0	2	0.7857	0.5789
diversification	0	1	0.2143	0.4258

Note(s): This table shows the summary of the variables in the dataset considering the environmental and social investor attitude only ($n = 14$; 7.37% of the overall dataset)

Source(s): Created by authors

Table 5.
Summary of dataset's
variables

environmental and social pillars, and those whose interest spans all three pillars collectively. In the second step, we tried to ascertain whether it is possible to observe statistically significant differences between the different types of investors. Specifically, we looked for evidence of distinctive traits among investors who are only interested in the environmental theme, in the social theme, in both the environmental and social themes and in all three ESG pillars together.

4.1 Step 1 – profiling investors according to their single or multiple ESG attitude

Since ESG_attitude is an ordinal variable ranging from 1 to 3, an ordered logistic regression was used. The estimated equation is as follows:

Variable	Min	Max	Mean	Std. Dev
gender	0	1	0.5074	0.5018
age	18	84	49.5441	17.3738
age2	324	7,056	2754.25	1711.78
edu_1	0	1	0.2132	0.4111
edu_2	0	1	0.5074	0.5018
edu_3	0	1	0.2794	0.4504
FL	4	6	5.1324	0.5552
nojob	0	1	0.5147	0.2218
student	0	1	0.0662	0.2495
self-employed	0	1	0.1324	0.3401
employed	0	1	0.4706	0.5010
retired	0	1	0.1765	0.3826
entrepreneur	0	1	0.1029	0.3050
LT	0	2	1.0221	0.3095
diversification	0	1	0.3382	0.4749

Table 6.
Summary of dataset's variables

Note(s): This table shows the summary of the variables in the dataset considering the environmental, social, and governance investor attitude only ($n = 136$; 71.58% of the overall dataset)

Source(s): Created by authors

$$ESG_attitude = \alpha_1 gender + \alpha_2 age + \alpha_3 age2 + \alpha_4 \sum_{i=1}^3 edu_i + \alpha_5 FL + \alpha_6 \sum_{k=1}^6 job_k + \alpha_7 LT + \alpha_8 diversification + \varepsilon \quad (1)$$

where:

- gender indicates if the investor is female (0) or male (1);
- age and age2 indicate respectively the age and its squared value for each investor;
- edu_i indicates the education level held by the investor, with specifically edu₁ representing a low level of education, edu₂ a medium level of education, and edu₃ a high level of education;
- FL proxies the financial literacy score obtained by each investor;
- job_k indicates whether the individual was unemployed (nojob), a student, self-employed, employed, an entrepreneur, or retired;
- LT indicates the investor's short-, medium- or long-term orientation;
- diversification indicates whether the investor has concentrated all their financial wealth in a single bank or spread their savings between several banks.

The estimates are reported in [Table 8](#).

Our results suggest that female investors pay more attention to the three ESG aims collectively while male investors seem to have a more pronounced interest in one pillar only. Our [H1](#) is therefore confirmed. Age significantly influences the investor's ESG attitude. However, the significance and sign of the variable "age-squared" show that the relationship between age and ESG attitude is not necessarily linear. More specifically, we can argue a positive relationship between age and the three ESG aims in those over 44 years old while younger investors (under 44 years old) tend to pay attention to just one element of sustainability. Based on this result, our [H2](#) is confirmed. Investors with a high level of

	ESG_ attitude	gender	age	age2	edu_1	edu_2	edu_3	FL	nojob	student	self-employed	employed	retired	entrepreneur	L/T	diversification
ESG_attitude	1															
gender	-0.1584	1														
age	-0.2297	0.0027	1													
age2	-0.2604	0.0013	0.9809	1												
edu_1	-0.1370	-0.0155	0.4380	0.4867	1											
edu_2	0.0026	-0.0470	-0.2366	-0.2532	-0.5848	1										
edu_3	0.1329	0.0706	-0.1569	-0.1858	-0.3058	-0.5935	1									
FL	0.1029	0.0753	-0.0546	-0.0957	-0.1756	-0.0939	0.2845	1								
nojob	-0.0728	-0.2228	0.1246	0.0944	-0.0116	0.0225	-0.0150	-0.1036	1							
student	0.0770	-0.1592	-0.4051	-0.3138	-0.0735	0.1268	-0.0759	-0.0702	-0.0665	1						
self-employed	0.0617	0.2042	-0.0316	-0.0685	-0.1207	-0.1877	0.3401	0.2689	-0.1021	-0.0853	1					
employed	0.1262	-0.0346	-0.3616	-0.3922	-0.1677	-0.1234	0.0216	0.0144	-0.2538	-0.2121	-0.3256	1				
retired	-0.1223	0.0720	0.6497	0.7162	0.4032	-0.1652	-0.2062	-0.1962	-0.1364	-0.1140	-0.1750	-0.4350	1			
entrepreneur	-0.1004	0.0535	-0.0208	-0.0562	-0.0507	0.0897	-0.0549	0.0799	-0.1047	-0.0875	-0.1343	-0.3339	-0.1794	1		
L/T	0.0587	0.0000	-0.0961	-0.0982	-0.0702	-0.0297	0.1045	0.0000	0.0567	0.0663	0.0000	0.0596	-0.0378	-0.1362	1	
diversification	-0.3339	0.0750	0.2816	0.2519	0.1323	-0.1079	-0.0046	0.0547	0.0013	-0.2032	0.0207	-0.1763	0.1264	0.2347	0.0299	1

Source(s): Created by authors

Table 7.
Matrix correlation

Gender	-0.861** (0.393)
age	0.195*** (0.0611)
age2	-0.0022*** (0.0006)
edu_1	0.546 (0.464)
edu_3	1.010* (0.585)
FL	0.261 (0.289)
student	2.190 (1.692)
self-employed	1.433 (0.895)
employee	0.917 (0.644)
retired	2.575*** (0.786)
entrepreneur	0.996 (0.837)
LT	0.335 (0.535)
diversification	-1.629*** (0.365)
Observations	190
Pseudo R2	0.1590
Prob > chi2	0.0002

Table 8.
Ologit regression
analysis

Note(s): Ordered logistic regression. Dependent variable: ESG_attitude. Robust standard errors in parentheses. Significance codes: *** indicate statistical significance at 1%, ** at 5% and * at 10%
Source(s): Created by authors

education expressed more interest in environmental, social, and governance issues than those with a school-leaving diploma (a medium level of education). Thus our H3 is confirmed. However, financial literacy is not found to be statistically significant; thus our H4 is rejected.

Retired investors are more interested in the three ESG targets than people without a job, thus H5 is rejected. This result cannot be explained by the level of education of the retired investors in our sample. Indeed, only 2 retirees out of the 36 in the sample (6%) held a university degree. Therefore, this focus on all ESG goals could be an expression of other aspects not controlled for, such as, for example, a greater concern for leaving a better world to their descendants.

The long-term investor orientation is not statistically significant in our analysis.

One very interesting result however is that investors who concentrate their portfolio in a single bank are more oriented towards the three sustainable goals (environment, social, and governance) collectively than those who diversify their assets between several banks.

4.2 Step 2 – disentangling ESG investor’s profile

Several studies (e.g. Beal and Goyen, 1998; Woodward, 2000; Nilsson, 2008; Junkus and Berry, 2010) have attempted to define the profile of the socially responsible investor. In more recent years, Bethlendi *et al.* (2022) examined heterogeneity among consumers of green finance and the possibility of identifying different investors’ sustainable profiles according to their socio-demographic characteristics. Intending to verify this statement, whereas in step 1 we

performed a general analysis of the answers provided by the sample examined, in step 2 we aimed to draw a more defined socio-demographic profile of the investor who is more oriented towards one or other of the E and S pillars (as no one expressed interest solely in the governance pillar), or to a combination of E and S, or to E, S, and G jointly. To this purpose, we introduce a dummy variable (*d_ESG_attitude*) which takes a value of 1 or 0 according to the following scheme. If the respondent expressed interest solely in either the environmental or the social pillar, the *d_ESG_attitude* takes a value of 1; otherwise 0. If the investor expressed interest in a combination of E and S jointly, the *d_ESG_attitude* takes a value of 1; otherwise 0. Finally, if the respondent expressed interest in all three E, S and G pillars jointly, the *d_ESG_attitude* takes a value of 1; otherwise 0. Thus, we repeat (1) four times using a logit regression. In this way, we obtain four theoretical ESG investor profiles as shown in [Table 9](#).

The results presented in [Table 9](#) appear to be in line with those shown in [Tables 8](#) and in [Appendix](#). Moreover, they allow for the identification of a specific ESG investor profile. First

	(a) Environmental Investor profile	(b) Social Investor profile	(c) ES Investor profile	(d) ESG Investor profile
gender	1.875*** (0.619)	-0.544 (0.926)	0.0582 (0.875)	-0.784* (0.416)
age	-0.281** (0.113)	-0.205 (0.182)	0.420*** (0.133)	0.191*** (0.0611)
age2	0.000319*** (0.00117)	0.0020 (0.0019)	-0.00452*** (0.0015)	-0.0022*** (0.0006)
edu_1	0.333 (0.736)	-	-0.153 (1.165)	-0.225 (0.666)
edu_2	-	0.152 (0.826)	-	-1.092* (0.594)
edu_3	-0.4414 (0.7708)	-	-	-
FL	-0.206 (0.368)	-1.025 (0.741)	-0.369 (1.087)	0.347 (0.317)
nojob	-	-	2.537 (1.626)	-1.383* (0.823)
student	0.328 (1.875)	-	-	1.150 (1.590)
self-employed	-0.688 (1.133)	-	-	0.412 (0.879)
employee	-0.182 (0.806)	-0.284 (0.904)	0.0274 (1.337)	-0.152 (0.578)
retired	-2.355 (1.569)	-1.986 (1.953)	-	1.811** (0.817)
entrepreneur	-	-	-	-
LT	0.500 (0.712)	-0.609 (0.562)	-2.434*** (1.095)	0.660 (0.594)
diversification	2.488*** (0.570)	2.483* (1.439)	-0.644 (0.862)	-1.625*** (0.382)
Constant	1.310 (3.428)	7.253 (5.693)	-6.696 (6.428)	-3.194 (2.627)
Observations	190	106	83	190
Pseudo R2	0.3253	0.1632	0.2454	0.1917
Prob > chi2	0.0004	0.3416	0.0153	0.0003

Source(s): Created by authors

Table 9.
Logit regression
results

of all, the results shown in [Table 9](#) column (b) are weak ($\text{Prob} > \chi^2$ 0.3416) and without statistical significance, therefore it is not possible to profile the investor who is oriented solely towards the social pillar. This is doubtless due to there being only a small number of investors in our sample who expressed their interest as being in favor of the social theme alone. The results shown in columns (a), (c), and (d) of [Table 9](#) are statistically significant ($\text{Prob} > \text{Chi}^2$ 0.0004; $\text{Prob} > \text{Chi}^2$ 0.0153; $\text{Prob} > \text{Chi}^2$ 0.0003 respectively). However, column (c) reports only two significant variables: age and long-term orientation. Therefore we can argue that investors who expressed an interest in environmental and social issues jointly are young people (under the age of 46) and do not have a long-term orientation. This last result represents a contradiction since long-term orientation is an essential element for achieving sustainability aims. Columns (a) and (d) demonstrate the greatest significance.

Comparing columns (a) and (d) of [Table 9](#), one of the main results is that men tend to be more environmentally oriented than women who, by contrast, are more oriented towards the environment-social-governance issues jointly. Again, our [H1](#) is confirmed.

Investors who are over 44 years of age are more interested in the ESG pillars jointly (again confirming our [H2](#)) while investors under 44 seem to be more interested in environmental goals alone. The level of education is significant only in column (d), highlighting that investors with a medium level of education are less interested in the three E S and G pillars jointly than those with a high level of education. Thus, again, our [H3](#) is confirmed. Retirees appear to be more interested in all three ESG pillars considered jointly than those who are entrepreneurs. By contrast, investors who are unemployed seem to be less interested than entrepreneurs in the ESG pillars jointly. Thus, again, our [H5](#) is rejected. In [Table 9](#), financial literacy is not statistically significant in any column, thus, again, our [H4](#) is rejected. Investors who express a greater interest solely in environmental aims are more likely to have relationships with multiple banks. Conversely, those who report an interest in all three ESG pillars jointly tend to have a higher concentration of portfolios with a single bank. Again, the long-term orientation is not statistically significant.

5. Discussion and conclusions

The results presented in [Tables 8](#) and [9](#) jointly confirm the theoretical framework of [Bethlendi et al. \(2022\)](#): the consumers of green finance are not homogenous. As demonstrated in this paper, it is possible to identify some distinctive features of investors who are interested only in the environmental issue rather than in the three ESG pillars together. More specifically, [Bethlendi et al. \(2022\)](#) argue that younger male investors and more highly educated people represent the potential customers of green financial products. Based on the results obtained, we can argue that the more environmentally oriented investor is a young male (up to approximately 44 years of age) who tends to have a relationship with multiple banks. On the other hand, the more ESG-oriented investor is an older female, with an increasing age (over 44) and who tends to concentrate their investment portfolio in only one bank. Retirees show greater interest than entrepreneurs in all three ESG pillars jointly. The unemployed, conversely, show less interest in these issues than entrepreneurs. Moreover, those with a medium level of education demonstrate less interest in these topics than more educated investors.

According to our analysis, the level of financial literacy does not influence ESG attitudes, in contrast with [Gutsche et al. \(2023\)](#) but in line with the conclusions of [Anderson and Robinson \(2022\)](#). This result is very interesting from several points of view. Firstly, it demonstrates that interest in the issue of E, S, or G or in ESG topics can be expressed by individuals with any level of financial knowledge and skills (including zero). Thus, all individuals can potentially act being mindful of, for example, environmental protection, attention to social issues, and the aims of good governance. Secondly, as a consequence, we can argue that investors' ESG attitudes are influenced by other aspects, which can also include morals and ethical principles (e.g. [Anand](#)

and Cowton, 1993; Beal and Goyen, 1998), a religious dimension (e.g. Peifer, 2011) and care for others (e.g. Rosen *et al.*, 1991; Lewis, 2001). These aspects are independent of the individual's level of financial literacy or financial engagement.

In our analysis we considered investors' tendency to concentrate their wealth in a single bank or to divide it between several banks. We find that the investors who have a relationship with a single bank are more oriented towards all three ESG issues, while those who have relationships with several banks are more inclined towards environmental issues alone. In our opinion, this result is important and reasonable. Climate change as well as other environmental issues (for example, soil depletion, air and water pollution, drought, etc.) are widespread topics of discussion among the population and they receive daily attention in the media. For this reason, environmental aims can be defined as a "common" topic for starting a conversation between investors and financial advisors. There is generally a lesser awareness among investors of the other social and governance pillars, despite their importance, and so these are more complicated to deal with in a dialogue with advisors. In light of this reasoning, if an investor keeps their portfolio concentrated in a single bank and therefore deals with a single financial advisor, over time, it will become easier to gradually address all three ESG issues in financial investing. However, if the investor divides their portfolio between several banks and therefore maintains relationships with several financial advisors, the environmental topic can be considered the easiest topic to build a conversation around and the simplest driver in the allocation of assets in the investor portfolio.

Based on our results another interesting outcome is worthy of discussion. In our analysis, long-term orientation is not significant either for environmental-oriented investors or for ESG-oriented investors. This is a negative conclusion because SRI investments require a specific long-term orientation (Regulation EU 2019/2088). Thus we can argue that investors in our sample are "theoretical" sustainable investors but not "in practice". In this respect, we believe that the role of financial advisers is crucial to educate investors to transform a declared interest in one or more ESG pillars into a real-world sustainable and responsible investment portfolio. Finally, from a policymaker's point of view, our paper demonstrates the possibility of profiling investors' attitudes toward the three individual E, S and G pillars. Using these profiles may produce consequences. At the portfolio level, the prevalence of sustainability investment products may affect, positively or negatively, the performance of the investor's asset allocation (Auer and Schuhmacher, 2016; Gutsche and Ziegler, 2019). Additionally, intermediaries should produce reporting of financial portfolios that meets with the individual investor's interest in a single or a combination of ESG pillars. At the industry level, the role of financial advisors will become even more crucial in driving investors' choice of investment products and funds that are specialized in the individual E, S and G pillars.

References

- Alemanni, B. (2022), "Retail investors' attitude and preferences and sustainable investing regulation", in Linciano, N., Soccorso, P. and Guagliano, C. (Eds), *Information as a Driver of Sustainable Finance. The European Regulatory Framework*, Palgrave MacMillan.
- Anand, P. and Cowton, C.J. (1993), "The ethical investor: Exploring dimensions of investment behaviour", *Journal of Economic Psychology*, Vol. 14 No. 2, pp. 377-385, doi: [10.1016/0167-4870\(93\)90007-8](https://doi.org/10.1016/0167-4870(93)90007-8).
- Anderson, A. and Robinson, D.T. (2019), "Knowledge, fear and beliefs: understanding household demand for green investments", *Swedish House of Finance Research Paper*.
- Anderson, A. and Robinson, D.T. (2022), "Financial literacy in the age of green investment", *Review of Finance*, Vol. 26 No. 6, pp. 1551-1584, doi: [10.1093/rof/rfab031](https://doi.org/10.1093/rof/rfab031).
- Aristei, D. and Gallo, M. (2021), "Financial knowledge, confidence, and sustainable financial behavior", *Sustainability*, Vol. 13 No. 19, 10926, doi: [10.3390/su131910926](https://doi.org/10.3390/su131910926).

- Auer, B.R. and Schuhmacher, F. (2016), "Do socially (ir) responsible investments pay? New evidence from international ESG data", *The Quarterly Review of Economics and Finance*, Vol. 59, pp. 51-62, doi: [10.1016/j.qref.2015.07.002](https://doi.org/10.1016/j.qref.2015.07.002).
- Bajo, E., Barbi, M. and Sandri, S. (2015), "Financial literacy, households' investment behavior, and risk propensity", *Journal of Financial Management, Markets and Institutions*, Vol. 3 No. 1, pp. 157-174, doi: [10.12831/80534](https://doi.org/10.12831/80534).
- Bauer, R. and Smeets, P. (2015), "Social identification and investment decisions", *Journal of Economic Behavior and Organization*, Vol. 117, pp. 121-134, doi: [10.1016/j.jebo.2015.06.006](https://doi.org/10.1016/j.jebo.2015.06.006).
- Beal, D. and Goyen, M. (1998), "Putting your money where your mouth is: a profile of ethical investors", *Financial Services Review*, Vol. 7 No. 2, pp. 129-143, doi: [10.1016/S1057-0810\(99\)80007-9](https://doi.org/10.1016/S1057-0810(99)80007-9).
- Beal, D.J., Goyen, M. and Philips, P. (2005), "Why do we invest ethically?", *The Journal of Investing*, Vol. 14 No. 3, pp. 66-78, doi: [10.3905/joi.2005.580551](https://doi.org/10.3905/joi.2005.580551).
- Bethlendi, A., Nagy, L. and Póra, A. (2022), "Green finance: the neglected consumer demand", *Journal of Sustainable Finance and Investment*, Vol. ahead-of-print No. ahead-of-print, pp. 1-19, doi: [10.1080/20430795.2022.2090311](https://doi.org/10.1080/20430795.2022.2090311).
- Brodback, D., Guenster, N. and Mezger, D. (2019), "Altruism and egoism in investment decisions", *Review of Financial Economics*, Vol. 37 No. 1, pp. 118-148, doi: [10.1002/rfe.1053](https://doi.org/10.1002/rfe.1053).
- Broihanne, M.H. (2022), "Banks retail clients' profiles and the gender gap in subjective financial literacy of spouses", *Financial Planning Review*, Vol. 5 Nos 2-3, e1149, doi: [10.1002/cfp2.1149](https://doi.org/10.1002/cfp2.1149).
- Broihanne, M.H., Orkut, H. and Osei-Tutu, F. (2023), "Cold time, cool time? Weather-induced moods and financial risk tolerance: evidence from a real-world banking context", *Finance Research Letters*, Vol. 55, 103978, doi: [10.1016/j.frl.2023.103978](https://doi.org/10.1016/j.frl.2023.103978).
- Chatterji, A.K., Levine, D.I. and Toffel, M.W. (2009), "How well do social ratings actually measure corporate social responsibility?", *Journal of Economics and Management Strategy*, Vol. 18 No. 1, pp. 125-169, doi: [10.1111/j.1530-9134.2009.00210.x](https://doi.org/10.1111/j.1530-9134.2009.00210.x).
- Chen, H. and Volpe, R.P. (1998), "An analysis of personal financial literacy among college students", *Financial Services Review*, Vol. 7 No. 2, pp. 107-128, doi: [10.1016/S1057-0810\(99\)80006-7](https://doi.org/10.1016/S1057-0810(99)80006-7).
- Diamantopoulos, A., Schlegelmilch, B.B., Sinkovics, R.R. and Bohlen, G.M. (2003), "Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation", *Journal of Business Research*, Vol. 56 No. 6, pp. 465-480, doi: [10.1016/S0148-2963\(01\)00241-7](https://doi.org/10.1016/S0148-2963(01)00241-7).
- Diouf, D., Hebb, T. and Touré, E.H. (2016), "Exploring factors that influence social retail investors' decisions: evidence from Desjardins fund", *Journal of Business Ethics*, Vol. 134 No. 1, pp. 45-67, doi: [10.1007/s10551-014-2307-4](https://doi.org/10.1007/s10551-014-2307-4).
- Doncel, L.M., Reinhart, W. and Sainz, J. (2008), "A behavioural approach to MiFID", *Banks and Bank Systems*, Vol. 3 No. Iss. 1, pp. 22-25.
- Dorflleitner, G. and Nguyen, M. (2016), "Which proportion of SR investments is enough? A survey-based approach", *Business Research*, Vol. 9, pp. 1-25, doi: [10.1007/s40685-016-0030-y](https://doi.org/10.1007/s40685-016-0030-y).
- Dorflleitner, G. and Utz, S. (2014), "Profiling German-speaking socially responsible investors", *Qualitative Research in Financial Markets*, Vol. 6 No. 2, pp. 118-156, doi: [10.1108/QRFM-07-2012-0024](https://doi.org/10.1108/QRFM-07-2012-0024).
- D'hondt, C., Merli, M. and Roger, T. (2022), "What drives retail portfolio exposure to ESG factors?", *Finance Research Letters*, Vol. 46, 102470, doi: [10.1016/j.frl.2021.102470](https://doi.org/10.1016/j.frl.2021.102470).
- Faff, R., Hallahan, T. and McKenzie, M. (2009), "Nonlinear linkages between financial risk tolerance and demographic characteristics", *Applied Economics Letters*, Vol. 16 No. 13, pp. 1329-1332, doi: [10.1080/13504850701381123](https://doi.org/10.1080/13504850701381123).
- Falk, A., Becker, A., Dohmen, T., Huffman, D. and Sunde, U. (2023), "The preference survey module: a validated instrument for measuring risk, time, and social preferences", *Management Science*, Vol. 69 No. 4, pp. 1935-1950.

- Fuller, R. (2012), "Environmental, social and governance investing from an idea to getting it done", *InFinance: The Magazine for Finsia Members*, Vol. 126 No. 2, pp. 42-43.
- Grable, J., Lytton, R., O'neil, B., Joo, S. and Klock, D. (2006), "Risk tolerance, projection bias, vividness, and equity prices", *The Journal of Investing*, Vol. 15 No. 2, pp. 68-74, doi: [10.3905/joi.2006.635632](https://doi.org/10.3905/joi.2006.635632).
- Gutsche, G. and Ziegler, A. (2019), "Which private investors are willing to pay for sustainable investments? Empirical evidence from stated choice experiments", *Journal of Banking and Finance*, Vol. 102, pp. 193-214, doi: [10.1016/j.jbankfin.2019.03.007](https://doi.org/10.1016/j.jbankfin.2019.03.007).
- Gutsche, G. and Zwergel, B. (2020), "Investment barriers and labeling schemes for socially responsible investments", *Schmalenbach Business Review*, Vol. 72 No. 2, pp. 111-157, doi: [10.1007/s41464-020-00085-z](https://doi.org/10.1007/s41464-020-00085-z).
- Gutsche, G., Köbrich León, A. and Ziegler, A. (2019), "On the relevance of contextual factors for socially responsible investments: an econometric analysis", *Oxford Economic Papers*, Vol. 71 No. 3, pp. 756-776, doi: [10.1093/oeq/gy051](https://doi.org/10.1093/oeq/gy051).
- Gutsche, G., Nakai, M. and Arimura, T.H. (2021), "Revisiting the determinants of individual sustainable investment - the case of Japan", *Journal of Behavioral and Experimental Finance*, Vol. 30, 100497, doi: [10.1016/j.jbef.2021.100497](https://doi.org/10.1016/j.jbef.2021.100497).
- Gutsche, G., Wetzel, H. and Ziegler, A. (2023), "Determinants of individual sustainable investment behavior - a framed field experiment", *Journal of Economic Behavior and Organization*, Vol. 209, pp. 491-508, doi: [10.1016/j.jebo.2023.03.016](https://doi.org/10.1016/j.jebo.2023.03.016).
- Hafenstein, A. and Bassen, A. (2016), "Influences for using sustainability information in the investment decision-making of non-professional investors", *Journal of Sustainable Finance and Investment*, Vol. 6 No. 3, pp. 186-210, doi: [10.1080/20430795.2016.1203598](https://doi.org/10.1080/20430795.2016.1203598).
- Haigh, M. (2008), "What counts in social managed investments: evidence from an international SurveyAdvances in public interest accounting", Vol. 13, pp. 35-62, doi: [10.1016/S1041-7060\(07\)13003-0](https://doi.org/10.1016/S1041-7060(07)13003-0).
- Hallahan, T., Faff, R. and McKenzie, M. (2004), "An empirical investigation of personal financial risk tolerance", *Financial Services Review*, Vol. 13 No. 1, pp. 57-78.
- Hayes, J. (2001), "We want values for money", *The Australian*, Vol. 31.
- Heeb, F., Kölbel, J.F., Paetzold, F. and Zeisberger, S. (2023), "Do investors care about impact?", *The Review of Financial Studies*, Vol. 36 No. 5, pp. 1737-1787, doi: [10.1093/rfs/hhac066](https://doi.org/10.1093/rfs/hhac066).
- Junkus, J.C. and Berry, T.C. (2010), "The demographic profile of socially responsible investors", *Managerial Finance*, Vol. 36 No. 6, pp. 474-481, doi: [10.1108/03074351011042955](https://doi.org/10.1108/03074351011042955).
- Kahneman, D. (2003), "Maps of bounded rationality: psychology for behavioral economics", *The American Economic Review*, Vol. 93 No. 5, pp. 1449-1475, doi: [10.1257/000282803322655392](https://doi.org/10.1257/000282803322655392).
- Kahneman, D. and Tversky, A. (1972), "Subjective probability: a judgment of representativeness", *Cognitive Psychology*, Vol. 3 No. 3, pp. 430-454, doi: [10.1016/0010-0285\(72\)90016-3](https://doi.org/10.1016/0010-0285(72)90016-3).
- Laroche, M., Bergeron, J. and Barbaro-Forleo, G. (2001), "Targeting consumers who are willing to pay more for environmentally friendly products", *Journal of Consumer Marketing*, Vol. 18 No. 6, pp. 503-520, doi: [10.1108/EUM00000000006155](https://doi.org/10.1108/EUM00000000006155).
- Levitt, S.D. and List, J.A. (2007), "What do laboratory experiments measuring social preferences reveal about the real world?", *Journal of Economic Perspectives*, Vol. 21 No. 2, pp. 153-174, doi: [10.1257/jep.21.2.153](https://doi.org/10.1257/jep.21.2.153).
- Lewis, A. (2001), "A focus group study of the motivation to invest: 'ethical/green' and 'ordinary' investors compared", *The Journal of Socio-Economics*, Vol. 30 No. 4, pp. 331-341, doi: [10.1016/S1053-5357\(01\)00103-2](https://doi.org/10.1016/S1053-5357(01)00103-2).
- Lewis, A. and Mackenzie, C. (2000), "Morals, money, ethical investing and economic psychology", *Human Relations*, Vol. 53 No. 2, pp. 179-191, doi: [10.1177/a010699](https://doi.org/10.1177/a010699).
- Lusardi, A. and Mitchell, O.S. (2007), "Baby boomer retirement security: the roles of planning, financial literacy, and housing wealth", *Journal of Monetary Economics*, Vol. 54 No. 1, pp. 205-224, doi: [10.1016/j.jmoneco.2006.12.001](https://doi.org/10.1016/j.jmoneco.2006.12.001).

- Lusardi, A. and Mitchell, O.S. (2008), "Planning and financial literacy: how do women fare?", *American Economic Review*, Vol. 98 No. 2, pp. 413-417, doi: [10.1257/aer.98.2.413](https://doi.org/10.1257/aer.98.2.413).
- Lusardi, A. and Mitchell, O.S. (2014), "The economic importance of financial literacy: theory and evidence", *Journal of Economic Literature*, Vol. 52 No. 1, pp. 5-44, doi: [10.1257/jel.52.1.5](https://doi.org/10.1257/jel.52.1.5).
- McLachlan, J. and Gardner, J. (2004), "A comparison of socially responsible and conventional investors", *Journal of Business Ethics*, Vol. 52 No. 1, pp. 11-25, doi: [10.1023/B:BUSI.0000033104.28219.92](https://doi.org/10.1023/B:BUSI.0000033104.28219.92).
- Nilsson, J. (2008), "Investment with a conscience: examining the impact of pro-social attitudes and perceived financial performance on socially responsible investment behavior", *Journal of Business Ethics*, Vol. 83 No. 2, pp. 307-325, doi: [10.1007/s10551-007-9621-z](https://doi.org/10.1007/s10551-007-9621-z).
- Nilsson, J. (2009), "Segmenting socially responsible mutual fund investors: the influence of financial return and social responsibility", *International Journal of Bank Marketing*, Vol. 27 No. 1, pp. 5-31, doi: [10.1108/02652320910928218](https://doi.org/10.1108/02652320910928218).
- Peifer, J.L. (2011), "Morality in the financial market? A look at religiously affiliated mutual funds in the USA", *Socio-Economic Review*, Vol. 9 No. 2, pp. 235-259, doi: [10.1093/ser/mwq024](https://doi.org/10.1093/ser/mwq024).
- Pérez-Gladish, B., Benson, K. and Faff, R. (2012), "Profiling socially responsible investors: Australian evidence", *Australian Journal of Management*, Vol. 37 No. 2, pp. 189-209, doi: [10.1177/0312896211429158](https://doi.org/10.1177/0312896211429158).
- Riedl, A. and Smeets, P. (2017), "Why do investors hold socially responsible mutual funds?", *The Journal of Finance*, Vol. 72 No. 6, pp. 2505-2550, doi: [10.1111/jofi.12547](https://doi.org/10.1111/jofi.12547).
- Roberts, J.A. (1996), "Green consumers in the 1990s: profile and implications for advertising", *Journal of Business Research*, Vol. 36 No. 3, pp. 217-231, doi: [10.1016/0148-2963\(95\)00150-6](https://doi.org/10.1016/0148-2963(95)00150-6).
- Rosen, B.N., Sandler, D.M. and Shani, D. (1991), "Social issues and socially responsible investment behavior: a preliminary empirical investigation", *Journal of Consumer Affairs*, Vol. 25 No. 2, pp. 221-234, doi: [10.1111/j.1745-6606.1991.tb00003.x](https://doi.org/10.1111/j.1745-6606.1991.tb00003.x).
- Rossi, M., Sansone, D., Van Soest, A. and Torricelli, C. (2019), "Household preferences for socially responsible investments", *Journal of Banking and Finance*, Vol. 105, pp. 107-120, doi: [10.1016/j.jbankfin.2019.05.018](https://doi.org/10.1016/j.jbankfin.2019.05.018).
- Schoenmaker, D. and Schramade, W. (2018), *Principles of Sustainable Finance*, Oxford University Press.
- Sørensen, O.B. and Pfeifer, S. (2011), "Climate change issues in fund investment practices", *International Social Security Review*, Vol. 64 No. 4, pp. 57-71, doi: [10.1111/j.1468-246X.2011.01411.x](https://doi.org/10.1111/j.1468-246X.2011.01411.x).
- Sparkes, R. and Cowton, C.J. (2004), "The maturing of socially responsible investment: a review of the developing link with corporate social responsibility", *Journal of Business Ethics*, Vol. 52 No. 1, pp. 45-57, doi: [10.1023/B:BUSI.0000033106.43260.99](https://doi.org/10.1023/B:BUSI.0000033106.43260.99).
- Stiglitz, J.E. and Weiss, A. (1981), "Credit rationing in markets with imperfect information", *The American Economic Review*, Vol. 71 No. 3, pp. 393-410.
- Tippet, J. and Leung, P. (2001), "Defining ethical investment and its demography in Australia", *Australian Accounting Review*, Vol. 11 No. 25, pp. 44-55, doi: [10.1111/j.1835-2561.2002.tb00389.x](https://doi.org/10.1111/j.1835-2561.2002.tb00389.x).
- Valor, C., de la Cuesta, M. and Fernandez, B. (2009), "Understanding demand for retail socially responsible investments: a survey of individual investors and financial consultants", *Corporate Social Responsibility and Environmental Management*, Vol. 16 No. 1, pp. 1-14, doi: [10.1002/csr.172](https://doi.org/10.1002/csr.172).
- Varmaz, A., Fieberg, C. and Poddig, T. (2022), "Portfolio optimization for sustainable investments", SSRN 3859616.
- Von Neumann, J. and Morgenstern, O. (1944), *Theory of Games and Economic Behavior*, Princeton Univ. Press, Princeton.
- Wagemans, F.A., Koppen, C.K. and Mol, A.P. (2013), "The effectiveness of socially responsible investment: a review", *Journal of Integrative Environmental Sciences*, Vol. 10 Nos 3-4, pp. 235-252, doi: [10.1080/1943815x.2013.844169](https://doi.org/10.1080/1943815x.2013.844169).

- Warren, W.E., Stevens, R.E. and McConkey, C.W. (1990), "Using demographic and lifestyle analysis to segment individual investors", *Financial Analysts Journal*, Vol. 46 No. 2, pp. 74-77, doi: [10.2469/faj.v46.n2.74](https://doi.org/10.2469/faj.v46.n2.74).
- Wiesel, M., Myrseth, K.O.R. and Scholtens, B. (2017), "Social preferences and socially responsible investing: a survey of U.S. Investors", Working Papers in Responsible Banking & Finance, WP N° 17-002 1st Quarter 2017.
- Williams, G. (2007), "Some determinants of the socially responsible investment decision: a cross-country study", *Journal of Behavioral Finance*, Vol. 8 No. 1, pp. 43-57, doi: [10.1080/15427560709337016](https://doi.org/10.1080/15427560709337016).
- Woodward, T. (2000), *The Profile of Individual Ethical Investors and Their Choice of Investment Criteria*, Occasional Paper, Bournemouth University.

Further reading

- Author 1 (n.d.), Delegate Regulation EU 2021/1253.
- Author 2 (n.d.), Directive 2004/39/EC – Markets in Financial Instruments Directive – MiFID.
- Author 3 (n.d.), European Securities and Markets Authority – ESMA 2022 Guidelines.
- Author 4 (n.d.), Regulation EU 2019/2088.
- Author 5 (n.d.), Regulation EU 2020/852.
- Quaranta, F. and Socorso, P. (2023), "Profilazione della clientela per la valutazione di adeguatezza", Discussion Paper - CONSOB.

(The Appendix follows overleaf)

	(a) ESG_attitude = 1 (vs)		(b) ESG_attitude = 2 (vs)		(c) ESG_attitude = 3 (vs)	
	ESG_attitude = 2	ESG_attitude = 3	ESG_attitude = 1	ESG_attitude = 3	ESG_attitude = 1	ESG_attitude = 2
gender	-2.063*** (0.769)	-1.869*** (0.625)	2.063*** (0.769)	0.194 (0.551)	1.869*** (0.625)	-0.194 (0.551)
age	0.324** (0.159)	0.293*** (0.109)	-0.324** (0.159)	-0.0308 (0.127)	-0.293*** (0.109)	0.0308 (0.127)
age2	-0.0036** (0.0017)	-0.0033*** (0.0011)	0.0036** (0.0017)	0.00032 (0.0014)	0.0033*** (0.0011)	-0.00032 (0.0014)
edu_1	-1.338 (1.034)	0.354 (0.670)	1.338 (1.034)	1.692* (0.890)	-0.354 (0.670)	-1.692* (0.890)
edu_3	-1.013 (1.030)	0.654 (0.686)	1.013 (1.030)	1.667* (0.852)	-0.654 (0.686)	-1.667* (0.852)
FL	-0.336 (0.589)	0.312 (0.413)	0.336 (0.589)	0.647 (0.487)	-0.312 (0.413)	-0.647 (0.487)
student	-15.51 (1,053)	0.278 (1.916)	15.51 (1,053)	15.79 (1,053)	0.278 (1.916)	-15.79 (1,053)
self-employed	-1.039 (1.739)	1.149 (1.348)	1.039 (1.739)	2.188 (1.383)	-1.149 (1.348)	-2.188 (1.383)
employee	-0.817 (1.281)	0.560 (1.182)	0.817 (1.281)	1.377* (0.832)	-0.560 (1.182)	-1.377* (0.832)
retired	-0.148 (1.806)	3.028** (1.413)	0.148 (1.806)	3.175** (1.479)	-3.028** (1.413)	-3.175** (1.479)
entrepreneur	-1.266 (1.460)	0.468 (1.296)	1.266 (1.460)	1.734 (1.063)	-0.468 (1.296)	-1.734 (1.063)
LT	-1.439* (0.853)	-0.259 (0.713)	1.439* (0.853)	1.180* (0.657)	0.259 (0.713)	-1.180* (0.657)
Diversification	-1.815** (0.847)	-2.654*** (0.698)	1.815** (0.847)	-0.839 (0.575)	2.564*** (0.698)	0.839 (0.575)
Constant	0.423 (4.715)	-3.386 (3.633)	-0.423 (4.715)	-3.809 (3.739)	3.386 (3.633)	3.809 (3.739)
Observation	190		190		190	
Pseudo R2	0.2783		0.2783		0.2783	
Prob > chi2	0.0000		0.0000		0.0000	

Note(s): Multinomial logit model. Dependent variable: ESG_attitude
 ESG_attitude = 1 refers to Environment; ESG_attitude = 2 refers to Environment and Social; ESG_attitude = 3 refers to Environment, Social and Governance
 Standard errors in parentheses. Significance codes: *** indicate statistical significance at 1%, ** at 5% and * at 10%

Source(s): Created by authors

Table A1.
Robustness test:
multinomial logit
regression results

Corresponding author

Andrea Lippi can be contacted at: andrea.lippi@unicatt.it

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com