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Sustainability and private investors

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Sustainability and Private Investors

Abstract

Private investors are an increasingly important voice in sustainability challenges. We examine investors' attitudes and behavior towards sustainable investing through a survey of 5,030 Finnish private investors. We document that 60 percent of all respondents consider environmental, social, and governance (ESG) factors when making investment decisions. Our results indicate that women and millennials are more likely to follow sustainable investment strategies than investors on average. We also find that language background, location and education levels influence investment behavior. Moreover, our findings suggest that both sustainable and traditional investors are willing to take risks in their investment strategy. We also report the effects of the COVID pandemic on investor behavior and find that investors who started investing during the pandemic are less likely to choose traditional investment strategies. Our findings have implications for financial market participants and policymakers.

Sustainability and Private Investors

'…transparency, choice and trust are needed to unlock the power of private investors in shaping sustainability'.

<div align="right">World Economic Forum (2022)</div>

1. Introduction

What motivates private investors to engage in sustainable investing? Sustainability has become an important consideration for investors, with an estimated $35.3 trillion in sustainable assets under management (AUM) globally out of a total AUM of $98.4 trillion (Global Sustainable Investment Review, 2020). Sustainability themes are included in the UN2030 Agenda for Sustainable Development, the 2015 Paris Agreement, 2050 Carbon Neutral Europe, Green Transition, COP27, COP15, and the International Sustainability Standards Board (ISSB). In this paper, we examine private investors' behavior and attitudes toward sustainable investing.

Sustainability encompasses "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (Brundtland Report, 1987). Sustainable investing is an approach that incorporates environmental, social, and governance (ESG) factors (Avramov et al., 2022; Gutsche and Ziegler, 2019; Buchanan et al., 2018; Amel-Zadeh and Serafeim, 2018). It is also a different strategy from both traditional and ethical investing. Traditional investors usually do not consider values or ESG, nor do they compromise returns, ethical investors are willing to compromise returns to invest according to their conscience (or values). An ethical investing strategy usually excludes five "sin" stock categories: alcohol, the arms industry, tobacco, adult entertainment, and gambling. Sustainable investors consider ESG issues and seek to earn good returns on their capital (Silvola and Landau, 2021; Brest and Born, 2013; Koellner et al., 2005).

In 2019, the percentage of both private and institutional investors worldwide that apply ESG principles to at least a quarter of their portfolios increased from 48 percent in 2017 to 75 percent (Deloitte, 2020). To date, sustainable investments research has focused on institutional investors (Scholtens & Sievänen, 2013; Hartzmark & Sussman, 2019) and how they understand

and apply sustainable investing principles (Amel-Zadeh & Serafeim, 2018; Buchanan et al., 2018; Eccles et al., 2017). According to Amel-Zadeh & Serafeim (2018), 82 percent of institutional investors take ESG seriously and are responsible for promoting organizational change.

Despite the rise in the share of assets allocated to sustainable investment targets, there is a relative dearth of research on private investors' attitudes and behavior toward sustainable investing. This is surprising, given that private investors hold investments equivalent to $42 trillion globally (World Economic Forum, 2022). In comparison, the institutional asset base totalled $61 trillion in 2020 (Boston Consulting Group, 2021). Specifically, there is a lack of empirical evidence on two major issues: (1) whether and how private investors perceive sustainable investing and (2) the characteristics of private investors who are interested in sustainable investing. The private investor perspective is important because they have a particular latitude in how their capital is deployed and are not accountable to others in the same way as fund managers. Private investors expect accountability from investment partners and investee organizations. The significant investment wealth that private investors hold has the potential to make them important change agents regarding sustainability challenges.

In this paper, we use the Jansson and Biel (2011) definition for a private investor, which refers to an individual who chooses to invest their own private money into financial markets. We empirically examine the profiles of private investors and their attitudes to sustainable, ethical, and traditional investing. We also study the most frequently applied decisions by private investors, as well as the main factors contributing to the decision to invest sustainably. We investigate how sustainable investing is expected to develop during the next five years. Finally, we report on the effects of the COVID-19 pandemic on private investor behavior.

Our empirical design is based on survey methodology. Survey studies in financial economics have been employed to examine dividend policy (Lintner, 1956; Brav et al. (2005), corporate financial practices (Graham & Harvey, 2001; Graham et al. (2005), investment

professionals (Cheung & Chinn, 2001; Cheung et al. (2004) climate finance (Stroebel and Wurgler, 2021) and household finance (Anderson and Robinson, 2022; Das et al., 2020; Giglio et al., 2020; Choi & Robertson, 2020; Bender et al. 2022). Survey methodology is beneficial in providing direct evidence on individuals' beliefs about future growth and returns (Giglio et al., 2022). Like Choi and Robertson (2020), our goal is to capture how investors consciously view themselves to be making financial decisions.

Our study is based on survey data gathered from private investors in Finland. The sample consists of 5,030 online responses. Our survey contains thirty-one questions across five categories. The questions capture whether and how individuals make investment decisions that include ESG considerations. We also include questions about the materiality and impact of the COVID-19 pandemic on private investor decisions. In the wake of the COVID pandemic, there is more societal uncertainty, which has escalated the importance of ESG concerns and how companies operate.

Our survey data provide interesting results on the way Finnish private investors make sustainable investment decisions. We find that 60 percent of all respondents consider ESG factors when making investment decisions. We also document that women and millennials are more likely to follow sustainable investment strategies than investors generally. Moreover, our findings suggest that both sustainable and traditional investors are willing to take risks in their investments, thereby indicating that sustainable investors have similar risk-taking preferences to traditional investors. In terms of the impact of the COVID-19 pandemic on investment decisions, we find that investors who start to invest during the pandemic are less likely to choose traditional investment strategies. Yet we find that investors who report investing more during the pandemic than before are less likely to invest according to ethical or sustainable investment strategies and are more likely to follow traditional investment strategies. Several additional findings also emerge from our survey data and tests. The salary level and work-life status do not impact chosen

investment strategies. Traditional, ethical and sustainable investors tend not to act on the advice of internet experts, family, or friends, nor do parents play a considerable role in determining how their children invest. Our main results are robust to a variety of model specifications.

Our paper makes several contributions to the literature on sustainability, private investing, and risk-taking. First, we provide empirical evidence on the growing importance of millennial[1] and women investors in the sustainable investing area. This is especially relevant due to the ongoing intergenerational wealth transfer to millennials[2]. Second, we find that the risk-taking preferences of sustainable and traditional investors are similar. Third, we provide evidence on a country where an investing culture and share ownership is a relatively new phenomenon. Fourth, we provide evidence that indicates the COVID-19 pandemic has altered private investor behavior. To the best of our knowledge, our final sample size of 5,030 respondents is the largest to date for a survey on private investing and sustainability. The sample size exceeds Jansson and Biel (2011) - 453 investors; Paetzold and Busch (2014) - 10 private investors; Gutsche and Ziegler (2019) - 1173 responses; Lagerkvist et al. (2020) - 559 responses; Anderson and Robinson (2022) – 3,993 respondents; Choi and Robertson (2020) – 1013 investors and Bender et al. (2022) - 2,484 respondents.

Our study is related to several studies that examine private investor behavior (Paetzold & Busch, 2014; Choi & Robertson, 2020; Giglio et al., 2021; Bender et al., 2022). Related to Choi and Robertson (2020) and Bender et al. (2022), we show how individuals perceive themselves to consciously make financial decisions. However, our study is different from Choi and Robertson (2020) and Bender et al (2022) in the following aspects. First, Bender et al. (2022) focus on wealthy private investors (those with at least $1 million) in invested assets whereas we focus on all salary and wealth levels. Only 5 percent of private Finnish investors we survey have assets of more than €500,000 ($531,000). Second, Bender et al. (2022) and Choi and Robertson (2020) emphasize equity investments, whereas we investigate more asset classes (for example, ETFs,

bonds, and cryptocurrencies). Third, Choi and Robertson (2020), Giglio et al. (2021), and Bender et al. (2022) do not consider sustainability investing as part of their empirical analyses, whereas we explicitly include it in our analyses. Fourth, although Paetzold and Busch (2014) discuss sustainability and private investing, we compare sustainable, ethical, and traditional investing strategies. Different from Paetzold and Busch (2014), we also cover more investor characteristics and investing determinants. Fifth, our sample is more than twice the size of Choi and Robertson (2020), Bender et al. (2022), and Paetzold and Busch (2014).

The paper is structured as follows: in Section 2 we discuss the Finnish context for the study. The methodology, including survey design, data collection, and summary statistics are provided in Section 3. Section 4 details the regression results and robustness checks. Section 5 concludes with directions for future research.

2. Finnish Context

Like Grinbatt and Keloharju (2001), we employ an intracountry analysis of Finland to study investor behavior. According to the law and finance literature (La Porta et al., 1998, 2008), Finland is based on the Scandinavian civil law system that provides strong creditor and shareholder protection as well as legal enforcement. There is a high degree of trust in government institutions (Fifka and Drabble, 2012). Finland consistently rates highly in Transparency International surveys as a country with low corruption[3] and bribery, and relative ease to set up a business. With a population of 5.5 million people, there are two official languages in Finland, Finnish and Swedish. Grinblatt and Keloharju (2001) indicate that the influence of Swedish-speaking investors in Finnish markets outweighs what the fraction of the Swedish population suggests (6 percent Swedish versus 93 percent Finnish). They find that Swedish speakers hold 23 percent of household wealth.

In terms of Hofstede's (2001) cultural indicators, Finland scores high on individuality and uncertainty avoidance and low on masculinity relative to other Nordic countries. Using a sample of register based data between 2004–2008, Knüpfer et al. (2017) investigate family social interactions among Finnish investors. They find that investors tend to hold the same securities as their parents, and the correlation is stronger for mothers and family members who are more likely to communicate with each other. This builds upon the social influence hypothesis where investors acquire ideas from neighbors and co-workers (Hong et al. 2005; Grinblatt and Keloharju, 2001). Grinblatt and Keloharju (2001) find distance and culture also influence Finnish investors, as they are reportedly more willing to buy or sell stocks of firms located closer to them. Investors also prefer to communicate in their own language or be helped by individuals who speak the same language.

The concept of sustainability is deeply rooted in Finnish culture. In sustainability rankings of 128 countries, Finland occupies places 2–5 along with Denmark, Norway, and Sweden (Phillis et al. 2011). Socially responsible investing (SRI) in Nordic countries is based on a foundation of institutional components rather than a pursuit of economic gain (Bengtsson, 2008). The first SRI activity in Finland occurred in 1999 (Kreander, 2001). Scholtens and Sievänen (2013) find that Finnish SRI investors want to invest in core, rather than broad, SRI. For many years, sustainability reporting has been on a voluntary basis. Financial institutions in Finland provide many opportunities by providing numerous sustainable or green investment products. Finland's Sustainable Investment Forum (Finsif), established in 2010, has close to 90 institutional members.

Share ownership is a relatively recent phenomenon in Finland. Historically, any additional investments have been allocated to public pension funds, and Finland has a substantial pension fund industry (Scholtens and Sievänen, 2013). At the start of 2020, it became possible to open an equity savings account in Finland[4]. Since then, the number of private investors investing in shares increased from approximately 800,000 to over 980,000 investors by the end of 2021 (Euroclear,

2022). Keloharju and Lehtinen (2021) find that 709,269 private investors directly owned stocks in 2018. This share of investors represents 12.9 percent of the Finnish population[5]. The median stock portfolio was worth €5,200. Women account for 41 percent of shareholders, 29 percent of individuals' combined share of wealth, and 26 percent share of millionaires. Trades made by males and Finnish speakers tend to have shorter holding periods than those of females and Swedish speakers. Finally, Metcalf et al. (2006) find that Finnish investors tend to be balanced between risk-aversion and risk-taking strategies.

3. Methodology

3.1. Questionnaire design

We employ a survey design to gain insights into private investors' characteristics and how they consciously perceive themselves to make investment decisions. Surveys provide advantages over the use of archival data (Dichev et al., 2013). In our case, such archival information is not available, nor is it possible to access bank portfolio information. Survey data also allow us to analyze the attitudes and behaviors of the respondents that are not otherwise observable (Graham & Harvey, 2001; Choi & Robertson, 2020; Bender et al. 2022). Therefore, we employ survey methodology because it allows us to ask direct questions about investor perception and behavior, and to discover institutional and other factors that may impact decision-making. As a starting point, we follow Dillman et al., (2008) who suggest using existing questions from various survey and interview studies to design the survey questionnaire. The use of existing questions that have already been tested helps reduce the likelihood of misunderstandings, increases efficiency, and provides stronger reassurance. However, it should be noted that many prior surveys are conducted among institutional investors, and earlier institutional investor studies lack an appropriate measurement scale. As a result, we draw on the ESG and sustainable investing literature (e.g.

Amel-Zadeh & Serafeim, 2018; Eccles et al., 2017; Paetzold & Busch, 2014; Silvola & Landau, 2021) as a baseline for our survey.

Next, we beta-test the survey with 15 people, an approach used by Dillman et al. (2008) and Amel-Zadeh and Serafeim (2018). Beta-testing aims to test the survey on individuals who are relatively similar to the target group, such as university faculty, students, and private investors, as well as sustainable investing experts. Their feedback helped to reformulate some questions, optimize question-wording, and tone, and reduce potential survey biases.

The final version of the survey consists of an explanatory introduction and 31 questions, allocated across five sections[6]. The first section examines the background characteristics of the respondent, and the second section focuses on the respondent's financial situation. This section includes the amount of invested assets, loans, and the investment horizon. The third section examines the respondents' investment motives and views on sustainable investing[7]. The fourth section focuses on the respondents' investment strategies and the use of ESG information. The final section focuses on the respondents' views on the association between returns and sustainable investing[8]. The variables employed in this paper are defined in Appendix 1[9].

3.2. Data collection

This study is based on online survey data of Finnish private investors. We conduct the data collection in collaboration with Nordnet, one of the largest online investment platforms in the Nordic countries. Founded in Sweden in 1996, Nordnet provides a variety of options for private investors to acquire equities and other asset classes. In Finland, Nordnet has approximately 400,000 customers[10]. In addition to their main business lines, the company provides events, blogs, webinars, podcasts, and Shareville, the biggest social investing platform in the Nordics where private investors can follow other investors and participate in online discussions. Nordnet was selected as the collaborative partner for this survey due to its substantial trading in private

investors' funds and stock management by all major asset management houses (but it has no active in-house asset management).[11]

The survey data was collected between December 14, 2020, and January 31, 2021. The online survey was designed and tested by the research team and conducted on the Webropol platform. The survey was written in both the Finnish and English languages. The received responses are anonymous and the study was conducted in line with the GDPR data protection regulations[12]. Nordnet's role was to deliver the survey link to their customers through their several communication channels, i.e., newsletter, Facebook, Twitter, Instagram, LinkedIn, and Shareville. Nordnet did not participate in designing the survey nor have access to the results. The survey and the responses were securely stored on the research team's university servers.

Nordnet sent the survey link twice to their newsletter respondents. The first newsletter mentioning the survey was sent out to 234,474 respondents in December 2020. 34.4% of the respondents opened the email and 4,648 persons clicked the survey link. The second newsletter mentioning the survey was sent out in January 2021 to 245,437 respondents. 53.7% of them opened the email and 667 clicked the survey link. Nordnet advertised the survey on Facebook where 6,402 persons saw the post and 68 clicked the associated survey link. On Twitter, the survey advertisement was shown to 9,485 users, out of 135 clicked the survey link. On Instagram, 15,645 users saw Nordnet's feed post about the survey, and their Instagram story was shown to 6,800 users. Instagram advertising led to 775 users clicking the survey link. Nordnet's LinkedIn post about the survey was shown to 4,718 users and it led to 145 link clicks. Finally, the survey was also advertised in Shareville but it is not possible to see how many users clicked the survey link from that platform. After opening the survey link, the respondents were explained the purpose of the survey and the use of the data. As the survey progressed, the respondents received definitions for the terms that were expected to be unfamiliar to private investors in the pilot test.

Figure 1 documents the survey timeline and how marketing in different communication channels produced the number of responses. Respondents answered anonymously and the data were processed confidentially. After answering the survey, the respondents were also able to give their contact information in a separate data sheet to participate in a raffle to win a gift card to Nordnet funds (5 gift cards, each at 100€ value).[13] By the deadline, 5,030 responses were received, comprising our final sample size.

[Insert Figure 1 about here]

3.3. Descriptive statistics

Table One displays descriptive statistics for the investors surveyed. The most common investor preference is a traditional investment strategy with a mean of 3.34 (based on a scale from one to five), followed by sustainable investment strategies (3.05) and ethical investing (2.65).

[Insert Table 1 about here]

Individual investor characteristics are also tabulated in Table One. In terms of respondents, 35 percent are women and 58 percent are millennials (that is, 40-year-olds or younger). Seventy percent of respondents are in a relationship. Exploring this variable in more detail, we find that 25 percent of respondents are single, 34 percent are in a partnership, 36 percent are married or in a registered relationship, about 5 percent are divorced, and 1 percent are widowed. Parents account for 46 percent of respondents. As Table 1 indicates, 92 percent of surveyed investors have Finnish as their native tongue, whereas 7 percent of the respondents have Swedish as their first language. In terms of a set of belief values, 70 percent of the respondents do not consider themselves to be religious or spiritual. In terms of location, 38 percent of respondents live in the Helsinki (or capital) area, and 57 percent reside in urban municipalities (more than 100.000 citizens). Furthermore, 65 percent of the respondents live in their own house or flat and 27 percent live in rental accommodation.

In terms of education level, less than 3 percent of the respondents have a primary-school education as the highest level of education achieved, 29 percent have completed secondary education, 33 percent hold a bachelor's degree, 32 percent have a master's, and about 3 percent have a doctoral degree. Regarding the field of educational specialization, 25 percent of the respondents have a business education and 36 percent of the respondents have a degree in engineering. 63 percent of the respondents are working either full or part-time and 20 percent are students.

In terms of financial obligations, 69 percent of respondents have outstanding debt, and 8 percent have loans either for business or investment purposes. Additionally, 16 percent of respondents have a car or consumer loan, 26 percent have a student loan, and 43 percent of the respondents have a mortgage. The most popular investment classes amongst respondents are stocks (81 percent), mutual funds, index funds and ETFs (78 percent), and real estate (14 percent). In separate results, we find the respondents' investment horizon is relatively long, with 63 percent of respondents having over a 10-year investment horizon[14].

From Table One, most respondents (67 percent) have family members who also invest, distributed as follows: 22 percent have children who invest, 27 percent have parents who invest, and 42 percent have a partner/spouse who invests. However, respondents seem to prefer not to discuss their investments with others, with 70 percent of respondents preferring to make their investment decisions independently. This initial evidence does not support the social hypothesis findings of Knüpfer et al. (2017). Approximately 23 percent of respondents consider the opinions of experts on the Internet (e.g., blogs or professional investment websites), 10 percent consult their family members but only 2 percent personally consult with financial experts and 3 percent rely on suggestions made by banks' investment advisors. Interestingly, 60 percent of all respondents consider ESG information when making investment decisions.

Graphical distributions for selected investor characteristics are presented in Figures 2 through 4. Figure 2 shows the age distribution of respondents. Over half of the respondents belong to the Millennial and Generation Z age groups. The sample appears to be quite representative of the overall Finnish population, where the average age is 43.6 years[15].

[Insert Figure 2 about here]

In Figure 3 it is evident that 41 percent of investors have an income between €25,000-€49,999, and only 4 percent of respondents have an income of more than €100,000. Again, this appears representative of the overall Finnish population where the average annual salary is €44,808[16].

[Insert Figure 3 about here]

Figure 4 displays the value of respondents' investment portfolio, with 36 percent of respondents with invested assets worth less than €10,000. At the other extreme, 5 percent of the respondents have an investment portfolio of more than €500,000. Thus, our final sample includes a diverse mix of wealthy private investors as well as investors with relatively small investment portfolios.[9]

[Insert Figure 4 about here]

Table 2 presents the pairwise correlations between the variables used in later analyses. The variables *Ethical* and *Sustainable* have a significant positive correlation (0.65), indicating that ethical and sustainable investment strategies are often employed by the same investors. Interestingly, the correlations between *Traditional* and *Ethical* (-0.35) and *Traditional* and *Sustainable* (-0.35) are both negative, preliminarily suggesting that investors who are interested in traditional investment strategies are not necessarily prone to follow sustainable or ethical investment strategies. Overall, it can be concluded from Table 2 that the pairwise correlations between the variables are low and do not distort our empirical analyses.

[Insert Table 2 about here]

4. Results

4.1. Baseline regressions

We examine private investors' attitudes and behavior towards sustainable investing by estimating alternative versions of the following regression specification:

$$Investor\ strategy_{j,t}$$

$$= \alpha + \beta_1 Female_{j,t} + \beta_2 Millenial_{j,t} + \beta_3 Relationship_{j,t} + \beta_4 Children_{j,t}$$

$$+ \beta_5 Religiousness_{j,t} + \beta_6 Finnish_{j,t} + \beta_7 Municipality_{j,t} + \beta_8 Own\ house_{j,t}$$

$$+ \beta_9 Education_{j,t} + \beta_{10} Business_{j,t} + \beta_{11} Engineering_{j,t} + \beta_{12} Working_{j,t}$$

$$+ \beta_{13} Salary_{j,t} + \beta_{14} Investment\ portfolio_{j,t}$$

$$(1)$$

The dependent variable Investor strategy$_{j,t}$ is defined as *Ethical* (reported in Model 1), *Sustainable* (Model 2), and *Traditional* (Model 3). The employed alternative dependent variables are measures of how well these three investor strategies describe the respondent's investment style on a scale from 1 (not at all) to 5 (to great extent). *Female* is a dummy variable which equals one for female respondents. *Millenial* is a binary variable that is assigned a value of one if the respondent is 40 years old or younger. *Relationship* is a binary variable that is assigned to one if the respondent is in a relationship. *Children* is a dummy variable that equals one if the respondent has a child or children. *Religiousness* is a measure of the religiousness or spirituality of the respondent measured on a scale from 1 (not at all) to 5 (to great extent). *Finnish* is a dummy variable that is assigned a value of one if the respondent has Finnish as their first language. *Municipality* is a measure of the respondent's living location municipality classification on a scale from 1 to 3 where one denotes a rural area, two denotes a densely populated municipality (20,000-100,000 inhabitants), and three is an urban municipality (over 100,000 inhabitants). The measure is based on the Statistics of Finland definition. *Own house* is a binary variable that is allocated a value of one if the respondent owns his/her house or apartment.

Education is a measure of the respondent's highest completed education level. It is based upon the following scale: 1. primary education, 2. secondary education, 3. Bachelor's or equivalent level, 4. Master's or equivalent level, and 5. Doctoral or equivalent level. *Business* is a dummy variable that equals one if the respondent's education is from the business field and *Engineering* is assigned a value of one if the respondent's degree is in engineering. *Working* is a dummy variable that equals one if the respondent is working, either part- or full-time. *Salary* is a measure for the respondent's annual salary level, measured with the following scale: 1. less than €10,000, 2. €10,000-24,999, 3. €25,000-49,999, 4. €50,000-100,000, and 5. more than €100,000. Finally, *Investment portfolio* is a measure for the size of the respondent's investment portfolio, measured with the following scale: 1. less than €10,000, 2. €10,000-24,999, 3. €25,000-49,999, 4. €50,000-99,999, 5. €100,000-500,000, and 6. more than €500,000. All of the variable definitions are listed in Appendix 1.

Table 3 presents the empirical analysis for the three alternative investor strategies. The baseline regressions indicate that the gender and age of the investors are significant variables in explaining the relevant investment strategy. Female investors are more likely to follow ethical (0.384) and sustainable (0.379) investment strategies and less likely to invest according to traditional (-0.377) investment strategies than investors in general. Similarly, younger investors (*Millennials*) are prone to invest in sustainable investment strategies (0.168) and are less likely to invest in traditional (-0.071) investment strategies.

[Insert Table 3 about here]

We further document that investors who are in a relationship are more likely to follow ethical and sustainable investment strategies and are less likely to follow traditional investment strategies. Also, parents are prone to invest more ethically and sustainably than those with no children. *Religiousness* seems to increase the likelihood to invest in an ethical or traditional

manner, but the coefficient for *Religiousness* is not significant in Model 2 which tests the sustainable investment strategy.

Additionally, investors with Finnish as their first language are less likely to invest ethically and sustainably and more likely to invest according to traditional investment strategies than investors in general. Lifestyle is also associated with investment strategy decisions. Namely, respondents living in larger cities invest more ethically and sustainably than investors living in smaller towns and rural areas. Investors who own their house or apartment are less likely to invest according to ethical and sustainable investment strategies and are more prone to invest according to traditional investment strategies.

Educational level and discipline are significant determinants of the chosen investment strategy. In particular, investors with high education levels are more likely to invest in ethical and sustainable strategies than investors with lower education levels. If we consider educational discipline, we observe that investors with a degree in business or engineering are more likely to invest in a traditional manner and less likely to follow ethical and sustainable investment strategies than investors with an education in different fields. Additionally, the work-life status (*Working*) or salary level (*Salary*) does not impact chosen investment strategies.

The variable *Investment portfolio* measures the size of the portfolio and is statistically highly significant in all three model specifications, thereby implying that the amount of assets invested is related to the chosen investment strategy. In particular, the coefficient for *Investment portfolio* is positive and statistically highly significant (0.121) in Model 3, thereby indicating that *Traditional* investors have the largest investment portfolios. In contrast, the coefficient for the investment portfolio is negative for *Ethical* (-0.067) and *Sustainable* (-0.052) investors. That is, the investors following ethical and sustainable investment strategies are associated with smaller investment portfolios.

4.2. Changes in sustainability

In addition to profiling investors' current investment strategies, we are also interested in examining if and how they plan to change their allocation of sustainable investments in their portfolios within the next five years (that is, 2021 onwards). The results of these analyses are tabulated in Table 4. Investors who follow ethical or sustainable investment strategies plan to increase their investments in sustainable investments during the next five years (coefficients are 0.011 and 0.012, respectively). Interestingly, traditional investors report they will decrease their share of sustainable investments in the next five years (coefficient -0.005). These findings are statistically significant at the 1 percent level and suggest that the plans for future investment decisions differ significantly between the three examined investor groups.

[Insert Table 4 about here]

4.3. Risk-taking

We analyze the relationship between risk-taking preferences and chosen investment strategies to see if investors' attitudes toward risk-taking are relevant when selecting an investment strategy. These results are reported in Table 5 and indicate that both sustainable and traditional investors are willing to take risks in their investments in a similar manner. The positive coefficients for *Sustainable* (0.062) and *Traditional* (0.051) are both statistically significant. This suggests that the risk-taking behavior of the investors following sustainable investment strategies is similar to traditional investors in that both groups are willing to take investment risks if they are associated with better return prospects. The results for other investor characteristic variables than the risk-taking preferences are similar to the results reported in the baseline regressions.

[Insert Table 5 about here]

4.4. Investment motives

In addition to asking about the chosen investment strategies we also asked the respondents about their motivation for choosing the specific investment strategies they reported. Specifically, we focus on examining the motives around sustainable investing and the results of these analyses are presented in Table 6.

[Insert Table 6 about here].

The variables of interest in the regressions in Table 6 are binary variables: *Returns sacrificed*, *Returns not maximized*, and *Value increase,* these variables measure the respondents' opinions on sustainability and profit-making. *Returns sacrificed* is a dummy variable that equals one if the respondent considers that financial returns need to be sacrificed in sustainable investing. *Returns not maximized* is a binary variable that is assigned to one if the respondent believes that financial returns cannot be maximized in sustainable investing. Finally, *Value increase* is a dummy variable that is assigned a value of one if the respondent considers that sustainable investing can help to increase portfolio value.

The coefficient for *Returns sacrificed* is negative and statistically highly significant for sustainable investors, whereas the coefficient for the investors following traditional investment strategies is positive. *Returns sacrificed* is not significant in the case of ethical investors, implying that ethical investors believe investment returns are not compromised by investing in a sustainable manner. When examining *Returns not maximized,* we observe statistically significant results for all the investment strategies. Coefficients are negative for *Ethical* (-0.324) and *Sustainable* (-0.473), whereas the coefficient for *Traditional* is positive (0.190), thereby implying that the investment motives differ between the investors based on the investment strategies they follow.

Investor groups also differ in their expectations toward *Value increase*. These results are reported in Panel B of Table 6 and indicate a positive relationship between *Value increase* and ethical (0.281) and sustainable (0.501) investment strategies, whereas traditional investors are

associated with a negative relationship with *Value increase* (-0.201). All results are statistically significant.

4.5. Sources of investment advice

In addition to examining the preferred investment strategies of respondents, we also investigate who investors rely on when making investment decisions. The results of these analyses are presented in Table 7. In line with the descriptive statistics presented in Table 2, our regressions suggest that Finnish investors are not keen on asking for advice when making investment decisions. The coefficient for *Experts* is negative and statistically significant in the case of traditional investors and insignificant in the case of ethical and sustainable investors. None of the investor groups act on the advice of *Internet experts* (Panel A) or *Family and friends* (Panel B). In Panel B, the coefficient for *No advice* is positive and significant for traditional investors, indicating that they are more likely to make their investment decisions independently relative to ethical or sustainable investors.

[Insert Table 7 about here]

4.6. Family's investment habits

We next examine how the investment habits of family members impact respondents' investment behavior. The results are reported in Table 8. The coefficient for the variable *Family invests* is positive and significant for both sustainable and traditional investors, indicating that if a family member of the respondent invests the respondent him/herself is more likely to choose either a sustainable or traditional investment strategy. The respondents' family members' investment habits are not associated with choosing to follow ethical investment strategies.

We investigate the role of parents' investment habits separately from the impact of family members, in general, to see if parents have a more significant influence on their children's

investment behavior. The results of these analyses (Models 4-6 in Table 8) are not statistically significant, implying that parents do not have a considerable role in determining how their children invest. This evidence is in contrast to Knüpfer et al. (2017), who find that investors are more likely to be influenced by their parents. Separately we find that the role of a spouse or children is not significant in investment decision-making (results not tabulated)[17].

[Insert Table 8 about here]

4.7. The COVID-19 pandemic and investor behavior

The COVID-19 pandemic impacted stock market sentiment. Ortman et al. (2020) find that weekly trading intensity increased as retail investors reduced their use of leverage, opened more accounts, and established new positions. Huber et al. (2021) show that investments by finance professionals were 12 percent lower and driven by a change in risk aversion. Interestingly, sustainable companies recovered rather well from the stock exchange slump. Flows into sustainable funds in the U.S. reached a record-high level during the pandemic. Net flows of $51 billion in 2020 to the sustainable funds were more than double the total for 2019 and nearly 10 times more than in 2018 (Morningstar, 2021).

We asked respondents about the impact of the COVID-19 pandemic on their investment preferences. The results of these analyses are presented in Table 9. In Panel A it is evident that investors who started to invest during the pandemic were less likely to choose traditional investment strategies. However, the investors who reported investing more than before the pandemic were less likely to invest according to ethical (-0.075) and sustainable (-0.101) investment strategies and were more likely to follow traditional investment strategies (0.129).

[Insert Table 9 about here]

Panel B of Table 9 reports the findings on investors who reported no impact on their investment behavior due to the pandemic. The pandemic decreased the investments made by

ethical investors (-0.075) whereas sustainable and traditional investors state that the ensuing economic crisis had no impact on their investment decisions.

4.8. Robustness checks

We conduct additional tests to examine the robustness of the reported results. First, we test the robustness of the investment motives model by including two of the variables (*Returns sacrificed* and *Returns not maximized*) in the regression at the same time. To mitigate any multicollinearity concerns, we exclude *Value increase*. The coefficients for variables *Returns sacrificed* and *Returns not maximized* are reported in Table 10. The coefficients both for *Returns sacrificed* and for *Returns not maximized* are negative and statistically highly significant for ethical and sustainable investors, whereas for the investors following traditional investment strategies these coefficients are positive and statistically significant. The reported robustness results imply that the investment motives differ between the investors based on the investment strategies they follow. In particular, the ethical and sustainable investors believe that sustainable investing does not sacrifice returns or hurt return maximization, whereas the traditional investors tend to hold the opposing view. That is, the traditional investors consider sustainable investing to cause sacrifices in returns and that it is not possible to maximize returns when investing sustainably. Overall, the results reported in Table 10 indicate that the investment motives of ethical and sustainable investors differ from the investment motives of traditional investors.

[Insert Table 10 about here]

Next, we study the interactions between female and age variables (*Female x Millennial*). These analyses (not tabulated[18]) indicate no significant results for the interaction term, regardless of whether the investor follows an ethical, sustainable, or traditional investment strategy. Over 75 percent of Finland's total land area is covered in forest and measured by the proportional share of forest land (Ministry of Agriculture and Forestry in Finland, 2022). Investing in forests is

therefore rather popular in Finland and these investments may be considered as supporting sustainable development. Moreover, forestry is one of the most secure commodities in the markets because it is relatively tangible, safe, and commonly growing even in the worst financial climates. Therefore, we examine if investors following different investment strategies have differing attitudes towards forestry investments. These tests (not tabulated[19]) indicate that ethical and sustainable investors are more likely to invest in forests than traditional investors, thereby suggesting that forest investments can be associated with sustainable investment strategies.

5. Conclusion and Directions for Future Research

We examine private investors' attitudes toward sustainable investment strategies. Our data sample of 5,030 observations is collected from an online survey of Finnish private investors. We find that 60 percent of all respondents consider ESG factors when making investment decisions. Our results indicate that women and millennials (independent of their gender) are more likely to follow sustainable investment strategies than investors on average. We also find that language background, location and education levels influence investment behavior. It seems that Swedish-speaking, highly educated private investors living in cities are most often sustainable investors. Interestingly, our findings suggest that the risk-taking preferences of sustainable and traditional investors are similar, in that both are willing to take risks in their investments when the risk-taking is associated with high expected returns. We further examine the investor behavior for example regarding their future investment plans, as well as preferences on investment advice, and the possible effect of the COVID pandemic on their investment behavior. We document that the investors who follow sustainable or ethical investment strategies plan to increase their investments to sustainable investment objectives during the next five-year period.

The COVID-19 pandemic conditions created turbulence in global markets. We ask respondents if the pandemic has impacted their investor behavior. According to our results,

investors who started to invest during the pandemic were less likely to choose traditional investment strategies. Moreover, the investors who reported investing more during the pandemic than before were less likely to invest according to ethical or sustainable investment strategies and are more likely to follow traditional investment strategies.

The results of our study have implications not just for financial market participants, but also for policy makers. Whilst our results indicate that millennials invest more sustainably than older investors, it remains interesting to see if they will also invest any inheritance money they will eventually receive into sustainable financial products. This is especially relevant considering the funds inherited from the older men who currently have the greatest amount of invested assets in traditional strategies. This type of re-allocation of money on a large scale may well change the market dynamics in the long term, thereby helping achieve sustainable development targets. Our results also show that private investors tend to make most of their investment decisions independently. One direction for future research is to investigate how financial market actors might provide more high-quality information regarding these products. Finally, private investors seem to lack adequate transparent ESG information. Thus, there is a large pressure on industry standards-setters and policy makers to specify and adjust the rules to reduce potential greenwashing and set up global regulation to provide transparent information that would be available as well to private investors. The EU has already taken steps towards the Sustainable Finance Disclosure Regulation (SFDR), which means that financial institutions must disclose information on how ESG is taken into consideration in their investment decisions and integrated into the given investment advice. Accordingly, funds provided by these financial institutions need to be classified as dark green (Article 9), light green (Article 8), and others (Article 6). However, a global standardization would help private investors' investment decision-making processes.

As our paper is one of the first studies in private investing and sustainability, there is much room for future research to apply both quantitative and qualitative approaches. As regulation

currently develops at a fast rate, the effects of the SFRD on private investors' investment decisions are worthy of further investigation. It would provide information on how regulation works in practice. In-depth qualitative studies could apply a behavioral financial framework and examine how individual private investors make their sustainable investment decisions and consider different ESG aspects in practice. Finally, given recent events in Ukraine and the associated Russian sanctions, there is strong support for a shift towards increased green energy sources. This shift towards more green energy sources will impact sustainable investing choices for private investors and is an area for future research.

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FIGURE 1. Data collection process.
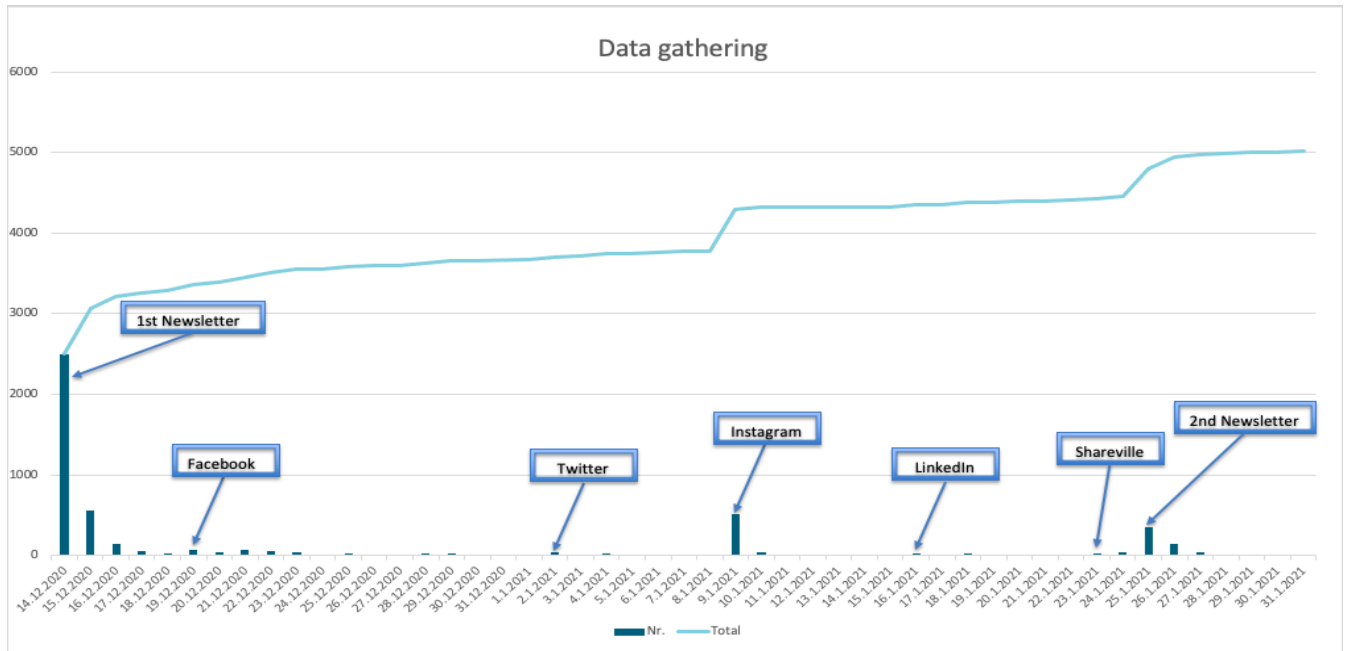
The figure introduces the data collection process and shows how the responses were received.

FIGURE 2. Age distribution of the survey respondents
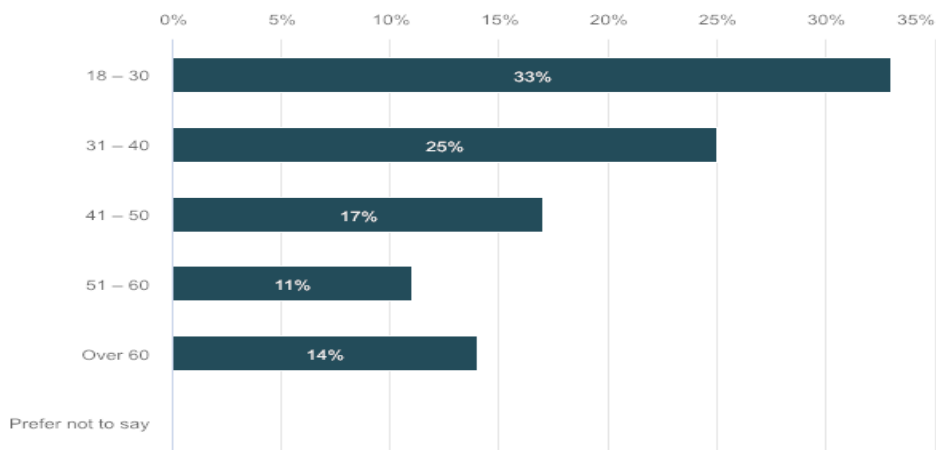
FIGURE 3. Income distribution among the survey respondents.
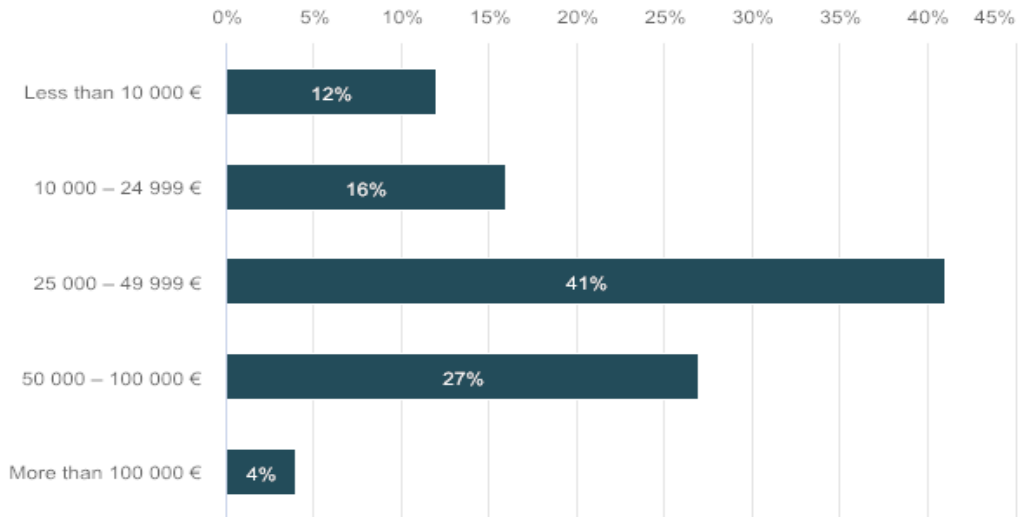
FIGURE 4. Value of the respondents' investment portfolio.
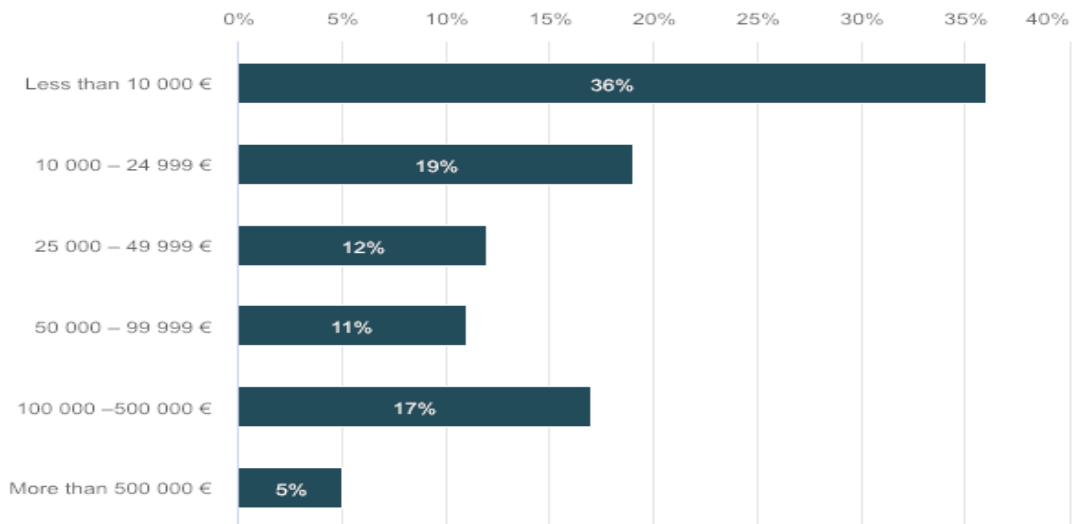
Appendix 1. Variable definitions

Variable	Definition
Dependent variables	
Traditional	A measure of how well traditional investing describes the respondent's investment style, scale from 1 (not at all) to 5 (to great extent)
Ethical	A measure of how well ethical investing describes the respondent's investment style, scale from 1 (not at all) to 5 (to great extent)
Sustainable	A measure of how well sustainable investing describes the respondent's investment style, scale from 1 (not at all) to 5 (to great extent)
Investor characteristics:	
Female	A dummy variable which equals one for female respondents
Millenial	A dummy variable which equals one for respondents 40-year-old and younger respondents
Relationship	A dummy variable which equals one for respondents who are in a relationship
Single	A dummy variable which equals one for respondents who are single
Partnership	A dummy variable which equals one for respondents who are in partnership
Married	A dummy variable which equals one for respondents who are married
Divorced	A dummy variable which equals one for respondents who are divorced
Widowed	A dummy variable which equals one for respondents who are widowed
Children	A dummy variable which equals one if the respondent has child(ren)
Religiousness	A measure of the religiousness or spirituality of the respondent, scaled from 1 (not at all) to 5 (to a great extent)
Finnish	A dummy variable which equals one for respondents who have Finnish as their mother tongue
Swedish	A dummy variable which equals one for respondents who have Swedish as their mother tongue
Municipality	Measure of municipality classification. Scale: 1. rural area, 2. densely populated municipality (20.000-100.000 inhabitants), 3. urban municipality (over 100.000 inhabitants)
Capital area	A dummy variable which equals one if the respondent lives in the capital area
Urban municipality	A dummy variable which equals one if the respondent lives in an urban municipality (over 100.000 inhabitants)
Own house	A dummy variable which equals one if the respondent owns his/her house or apartment
Rental accommodation	A dummy variable which equals one if the respondent lives in a rental accommodation
Education	Measure of the respondent's education level. Scale: 1. primary education, 2. secondary education, 3. Bachelor's or equivalent level, 4. Master's or equivalent level, 5. Doctoral or equivalent level
Primary school	A dummy variable which equals one if the respondent's highest completed education is primary school
Secondary education	A dummy variable which equals one if the respondent's highest completed education is secondary education
Bachelor's degree	A dummy variable which equals one if the respondent's highest completed education is Bachelor's degree
Master's degree	A dummy variable which equals one if the respondent's highest completed education is Master's degree
Doctoral degree	A dummy variable which equals one if the respondent's highest completed education is Doctoral degree
Business	A dummy variable which equals one if the respondent's education is from the business field
Engineering	A dummy variable which equals one if the respondent's education is from engineering
Working	A dummy variable which equals one if the respondent is working, either part- or full-time

Student	A dummy variable which equals one if the respondent is a student
Salary	Measure for the respondent's annual salary level. Scale: 1. less than 10 000 €, 2. 10.000-24.999 €, 3. 25.000-49.999 €, 4. 50.000-100.000 €, 5. more than 100.000 €
Investment portfolio	Measure for the size of the respondent's investment portfolio. Scale: Scale: 1. less than 10 000 €, 2. 10.000-24.999 €, 3. 25.000-49.999 €, 4. 50.000-99.999 €, 5. 100.000-500.00 €, 6. more than 500.000 €
Debt	A dummy variable which equals one if the respondent has debt
Mortgage	A dummy variable which equals one if the respondent has a mortgage
Student loan	A dummy variable which equals one if the respondent has a student loan
Car or consumer loan	A dummy variable which equals one if the respondent has a car or consumer loan
Business or investment loan	A dummy variable which equals one if the respondent has a business or investment loan

Investment objects:

Stocks	A dummy variable which equals one if the respondent owns stocks
Funds	A dummy variable which equals one if the respondent owns mutual funds, index funds, or ETFs
Real estate	A dummy variable which equals one if the respondent has a business or investment loan

Other variables:

Sustainability change	The difference between the share of invesments currently in sustainable investment objects and the planned share of sustainable investment objects in five years
Experts' advice	A dummy variable which equals one if the respondent reports relying on financial experts' or bank's advice in investment decision-making
Financial experts' advice	A dummy variable which equals one if the respondent reports relying on financial experts' advice in investment decision-making
Bank's advice	A dummy variable which equals one if the respondent reports relying on bank's advice in investment decision-making
Internet experts' advice	A dummy variable which equals one if the respondent considers the opinions of experts (.e.g blogs, professional websites) in investment decision-making
Family's advice	A dummy variable which equals one if the respondent consults his/her family members in investment decision-making
No advice	A dummy variable which equals one if the respondent makes the investment decisions mainly independently
Family invests	A dummy variable which equals one if the respondent's family member(s) invest
Parents invest	A dummy variable which equals one if the respondent's parents invest
Children invest	A dummy variable which equals one if the respondent's children invest
Spouse invests	A dummy variable which equals one if the respondent's spouse invest
Risk taking	Measure of risk-taking willingness in investment decisions. Scale from 1 (not at all) to 5 (to a great extent)
ESG information considered	A dummy variable which equals one if the respondent's considers ESG information when making investment decisions
Returns sacrifized	Measure of respondent's opinion on sustainability and profit-making. A dummy variable which equals one if the respondent considers that financial returns need to be sacrificed in sust. Investing
Returns not maximized	Measure of respondent's opinion on sustainability and profit-making. A dummy variable which equals one if the respondent considers that financial returns cannot be maximized in sust. Investing
Value increase	Measure of respondent's opinion on sustainability and profit-making. A dummy variable which equals one if the respondent considers that sustainable

	investing can help to increase portfolio value
Started	Measure for the impact of the COVID-19 on the respondent's investment strategy. A dummy variable which equals one if the respondent started investing during the pandemic
More	Measure for the impact of the COVID-19 on the respondent's investment strategy. A dummy variable which equals one if the respondent has invested more during the pandemic than before
No impact	Measure for the impact of the COVID-19 on the respondent's investment strategy. A dummy variable which equals one if the pandemic had no impact on the respondent's investment habits

TABLE 1 Background descriptive statistics.

Variable	Mean	Median	Max	Min	Std. dev.	No. of obs.
Investment preferences:						
Traditional	3.34	3.00	5.00	1.00	1.09	4990
Ethical	2.65	3.00	5.00	1.00	1.14	4978
Sustainable	3.05	3.00	5.00	1.00	1.17	4962
Investor characteristics:						
Female	0.35	0.00	1.00	0.00	0.48	5007
Millenial	0.58	1.00	1.00	0.00	0.49	5008
Relationship	0.70	1.00	1.00	0.00	0.46	4999
Single	0.25	0.00	1.00	0.00	0.43	4999
Partnership	0.34	0.00	1.00	0.00	0.47	4999
Married	0.36	0.00	1.00	0.00	0.48	4999
Divorced	0.05	0.00	1.00	0.00	0.21	4999
Widowed	0.01	0.00	1.00	0.00	0.10	4999
Children	0.46	0.00	1.00	0.00	0.50	4996
Religiousness	2.01	2.00	5.00	1.00	1.10	5006
Finnish	0.92	1.00	1.00	0.00	0.27	5011
Swedish	0.07	0.00	1.00	0.00	0.25	5011
Municipality	1.56	1.00	3.00	1.00	0.72	5003
Capital area	0.38	0.00	1.00	0.00	0.49	5003
Urban municipality	0.57	1.00	1.00	0.00	0.49	5003
Own house	0.65	1.00	1.00	0.00	0.48	4989
Rental accommodation	0.27	0.00	1.00	0.00	0.44	4989
Education	3.04	3.00	5.00	1.00	0.92	5001
Primary school	0.03	0.00	1.00	0.00	0.16	5001
Secondary education	0.29	0.00	1.00	0.00	0.45	5001
Bachelor's degree	0.33	0.00	1.00	0.00	0.47	5001
Master's degree	0.32	0.00	1.00	0.00	0.47	5001
Doctoral degree	0.03	0.00	1.00	0.00	0.18	5001
Business	0.25	0.00	1.00	0.00	0.44	4921
Engineering	0.36	0.00	1.00	0.00	0.48	4921
Working	0.63	1.00	1.00	0.00	0.48	4990
Student	0.20	0.00	1.00	0.00	0.40	4990
Salary	2.93	3.00	5.00	1.00	1.03	4950
Investment portfolio	2.69	2.00	6.00	1.00	1.67	4993
Debt	0.69	1.00	1.00	0.00	0.46	5006
Mortgage	0.43	0.00	1.00	0.00	0.50	5006
Student loan	0.26	0.00	1.00	0.00	0.44	5006
Car or consumer loan	0.16	0.00	1.00	0.00	0.37	5006
Business or investment loan	0.08	0.00	1.00	0.00	0.28	5006

TABLE 1 (cont.) Background descriptive statistics

Variable	Mean	Median	Max	Min	Std. dev.	No. of obs.
Investment objects:						
Stocks	0.81	1.00	1.00	0.00	0.39	5011
Funds	0.78	1.00	1.00	0.00	0.42	5011
Real estate	0.14	0.00	1.00	0.00	0.35	5011
Other variables:						
Sustainability change	13.49	10.00	85.00	-90.00	14.93	4421
Experts' advice	0.05	0.00	1.00	0.00	0.21	5008
Financial experts' advice	0.02	0.00	1.00	0.00	0.14	5008
Bank's advice	0.03	0.00	1.00	0.00	0.18	5008
Internet experts' advice	0.23	0.00	1.00	0.00	0.42	5008
Family's advice	0.16	0.00	1.00	0.00	0.37	5008
No advice	0.70	1.00	1.00	0.00	0.46	5008
Family invests	0.67	1.00	1.00	0.00	0.47	4987
Parents invest	0.27	0.00	1.00	0.00	0.44	4987
Children invest	0.22	0.00	1.00	0.00	0.41	4987
Spouse invests	0.42	0.00	1.00	0.00	0.49	4987
Risk taking	3.52	4.00	5.00	1.00	0.82	5010
ESG information considered	0.60	1.00	1.00	0.00	0.49	5005
Returns sacrifized	0.18	0.00	1.00	0.00	0.38	4968
Returns not maximized	0.30	0.00	1.00	0.00	0.46	4968
Value increase	0.52	1.00	1.00	0.00	0.50	4968

The table reports the descriptive statistics for the variables. The variables are defined in Appendix One.

TABLE 2. Correlation matrix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Traditional														
(2) Ethical	-0.35													
(3) Sustainable	-0.35	0.65												
(4) Female	-0.21	0.22	0.22											
(5) Millenial	-0.16	0.09	0.12	0.10										
(6) Relationship	0.01	0.00	0.02	-0.05	-0.12									
(7) Children	0.08	-0.05	-0.06	-0.09	-0.54	0.31								
(8) Religiousness	0.05	0.04	0.01	0.09	-0.19	0.00	0.15							
(9) Finnish	0.03	-0.04	-0.04	0.01	-0.05	-0.02	0.03	0.01						
(10) Municipality	0.04	-0.11	-0.09	-0.08	-0.16	0.05	0.18	0.10	0.01					
(11) Own house	0.11	-0.08	-0.09	-0.06	-0.40	0.31	0.47	0.07	0.04	0.15				
(12) Education	0.02	0.13	0.15	0.14	-0.04	0.12	0.05	0.01	-0.07	-0.21	0.15			
(13) Business	0.05	0.00	0.05	0.11	0.06	-0.03	-0.09	0.00	-0.12	-0.11	-0.06	0.11		
(14) Engineering	0.09	-0.11	-0.12	-0.30	-0.07	0.07	0.11	-0.09	0.07	0.06	0.14	0.02	-0.43	
(15) Working	0.00	0.01	-0.02	0.00	0.01	0.15	0.12	-0.07	0.00	0.02	0.26	0.13	-0.05	0.09
(16) Salary	0.11	-0.04	-0.05	-0.14	-0.28	0.25	0.34	-0.01	-0.02	-0.01	0.45	0.30	-0.03	0.19
(17) Investment portfolio	0.25	-0.13	-0.12	-0.22	-0.47	0.10	0.27	0.04	-0.03	0.00	0.37	0.23	0.01	0.13
(18) Sustainability change	-0.12	0.19	0.21	0.14	0.11	-0.01	-0.08	-0.01	0.01	-0.10	-0.08	0.07	0.04	-0.07
(19) Experts' advice	-0.04	0.01	0.01	0.04	-0.03	0.02	0.00	0.05	-0.02	-0.04	0.02	0.01	-0.01	-0.02
(20) Internet experts' advice	-0.05	0.05	0.04	0.06	0.08	0.00	-0.07	0.02	0.02	-0.08	-0.03	0.05	-0.02	0.00
(21) Family's advice	-0.05	0.04	0.02	0.13	0.11	0.00	-0.07	0.03	-0.02	-0.07	-0.06	0.03	0.01	-0.07
(22) No advice	0.07	-0.04	-0.03	-0.10	-0.06	0.01	0.06	-0.05	-0.01	0.06	0.03	-0.01	0.03	0.03
(23) Family invests	0.04	0.01	0.06	0.07	-0.03	0.25	0.14	0.01	-0.04	-0.06	0.14	0.15	0.05	-0.04
(24) Parents invest	-0.01	0.02	0.05	0.06	0.29	-0.14	-0.27	-0.08	-0.05	-0.12	-0.18	0.04	0.11	-0.07
(25) Risk taking	0.09	-0.05	0.02	-0.21	0.09	0.00	-0.08	-0.07	-0.02	-0.01	-0.01	0.01	0.06	0.04
(26) Returns sacrifized	0.01	0.00	-0.06	0.01	-0.02	-0.05	0.02	0.03	-0.01	0.02	0.00	-0.06	-0.06	-0.01
(27) Returns not maximized	0.11	-0.15	-0.21	-0.11	-0.10	0.01	0.07	0.03	0.04	0.06	0.08	-0.07	-0.06	0.06
(28) Value increase	-0.10	0.13	0.24	0.10	0.11	0.03	-0.08	-0.05	-0.03	-0.07	-0.07	0.10	0.10	-0.05

TABLE 2 (cont.) Correlation matrix.

	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
(16) Salary	0.56												
(17) Investment portfolio	0.02	0.34											
(18) Sustainability change	-0.02	-0.04	-0.11										
(19) Experts' advice	-0.04	0.01	0.01	-0.01									
(20) Internet experts' advice	0.00	-0.03	-0.06	0.06	0.22								
(21) Family's advice	-0.01	-0.06	-0.11	0.06	0.23	0.46							
(22) No advice	0.02	0.05	0.10	-0.04	-0.35	-0.86	-0.68						
(23) Family invests	-0.02	0.07	0.15	0.03	0.04	0.02	0.09	-0.04					
(24) Parents invest	-0.03	-0.14	-0.05	0.05	0.02	0.04	0.08	-0.03	0.43				
(25) Risk taking	0.05	0.08	0.14	0.02	-0.04	-0.03	-0.11	0.10	0.04	0.08			
(26) Returns sacrifized	-0.01	-0.03	-0.05	-0.02	-0.01	-0.01	0.02	-0.01	-0.03	-0.02	-0.08		
(27) Returns not maximized	-0.01	0.04	0.08	-0.13	0.01	-0.03	-0.01	0.01	-0.03	-0.05	-0.04	-0.29	
(28) Value increase	0.02	-0.01	-0.03	0.14	0.00	0.03	-0.01	0.00	0.05	0.06	0.10	-0.51	-0.68

This table presents the pairwise correlations between the variables used in the analyses. The variables are defined in Appendix 1.

TABLE 3. Investor profiles.

	Model 1		Model 2		Model 3	
	Ethical		Sustainable		Traditional	
Constant	2.092	***	2.470	***	2.867	***
	(18.40)		(21.15)		(26.70)	
Investor characteristics:						
Female	0.384	***	0.379	***	-0.377	***
	(10.45)		(10.06)		-(10.85)	
Millenial	0.054		0.168	***	-0.071	*
	(1.26)		(3.85)		-(1.77)	
Relationship	0.091	**	0.133	***	-0.071	**
	(2.42)		(3.46)		-(1.99)	
Children	0.079	*	0.085	**	-0.042	
	(1.92)		(2.03)		-(1.07)	
Religiousness	0.053	***	0.017		0.029	**
	(3.55)		(1.11)		(2.06)	
Finnish	-0.155	***	-0.140	**	0.215	***
	-(2.62)		-(2.34)		(3.82)	
Municipality	0.111	***	0.066	***	-0.034	
	(4.71)		(2.73)		-(1.51)	
Own house	-0.144	***	-0.151	***	0.033	
	-(3.41)		-(3.51)		(0.82)	
Education	0.151	***	0.175	***	0.012	
	(7.66)		(8.67)		(0.66)	
Business	-0.212	***	-0.120	***	0.240	***
	-(5.12)		-(2.84)		(6.12)	
Engineering	-0.170	***	-0.190	***	0.118	***
	-(4.35)		-(4.75)		(3.18)	
Working	0.019		-0.068		-0.012	
	(0.47)		-(1.61)		-(0.31)	
Salary	-0.009		0.000		0.022	
	-(0.39)		(0.03)		(1.08)	
Investment portfolio	-0.067	***	-0.052	***	0.121	***
	-(5.59)		-(4.29)		(10.74)	
No. of observations	4740		4728		4750	
Adjusted R^2	0.089		0.089		0.101	

This table shows the basic analyses for different investor types. The variables are defined in Appendix 1.
***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 4. Change in sustainability

	Model 1		Model 2		Model 3	
	Ethical		Sustainable		Traditional	
Constant	2.155	***	2.524	***	2.942	***
	(18.13)		(21.19)		(26.18)	
Investor characteristics:						
Female	0.333	***	0.314	***	-0.341	***
	(8.78)		(8.29)		-(9.52)	
Millenial	0.028		0.140	***	-0.098	**
	(0.63)		(3.13)		-(2.33)	
Relationship	0.049		0.108	***	-0.063	*
	(1.24)		(2.78)		-(1.71)	
Children	0.059		0.075	*	-0.061	
	(1.37)		(1.75)		-(1.50)	
Religiousness	0.035	**	0.003		0.048	***
	(2.21)		(0.20)		(3.22)	
Finnish	-0.158	***	-0.141	**	0.189	***
	-(2.59)		-(2.29)		(3.25)	
Municipality	0.094	***	0.046	*	-0.036	
	(3.83)		(1.87)		-(1.55)	
Own house	-0.100	**	-0.117	***	0.036	
	-(2.29)		-(2.69)		(0.88)	
Education	0.140	***	0.169	***	-0.003	
	(6.81)		(8.22)		-(0.14)	
Business	-0.183	***	-0.077	*	0.233	***
	-(4.29)		-(1.80)		(5.76)	
Engineering	-0.145	***	-0.150	***	0.120	***
	-(3.58)		-(3.70)		(3.12)	
Working	0.028		-0.044		-0.026	
	(0.65)		-(1.03)		-(0.64)	
Salary	-0.007		-0.010		0.028	
	-(0.31)		-(0.45)		(1.26)	
Investment portfolio	-0.060	***	-0.041	***	0.112	***
	-(4.84)		-(3.33)		(9.50)	
Sustainability change	0.011	***	0.012	***	-0.005	***
	(9.76)		(10.87)		-(4.78)	
No. of observations	4193		4184		4204	
Adjusted R^2	0.102		0.110		0.106	

This table shows the planned changes in the share of sustainable investments by investor category. The variables are defined in Appendix 1. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 5. Risk-taking

	Model 1		Model 2		Model 3	
	Ethical		Sustainable		Traditional	
Constant	2.123	***	2.260	***	2.707	***
	(16.16)		(16.74)		(21.83)	
Investor characteristics:						
Female	0.380	***	0.399	***	-0.361	***
	(10.18)		(10.44)		-(10.25)	
Millenial	0.057		0.153	***	-0.082	**
	(1.33)		(3.50)		-(2.03)	
Relationship	0.091	**	0.135	***	-0.072	**
	(2.43)		(3.50)		-(2.04)	
Children	0.077	*	0.093	**	-0.036	
	(1.87)		(2.22)		-(0.93)	
Religiousness	0.053	***	0.018		0.030	**
	(3.54)		(1.14)		(2.09)	
Finnish	-0.151	**	-0.138	***	0.207	***
	-(2.55)		-(2.27)		(3.69)	
Municipality	0.110	***	0.066	***	-0.033	
	(4.66)		(2.75)		-(1.47)	
Own house	-0.142	***	-0.149	***	0.036	
	-(3.39)		-(3.47)		(0.90)	
Education	0.152	***	0.176	***	0.012	
	(7.69)		(8.72)		(0.67)	
Business	-0.210	***	-0.127		0.234	***
	-(5.07)		-(3.00)		(5.99)	
Engineering	-0.171	***	-0.191	***	0.120	***
	-(4.37)		-(4.76)		(3.26)	
Working	0.021		-0.069		-0.014	
	(0.51)		-(1.64)		-(0.37)	
Salary	-0.008		-0.002		0.021	
	-(0.38)		-(0.09)		(0.99)	
Investment portfolio	-0.065	***	-0.058	***	0.116	***
	-(5.42)		-(4.67)		(10.23)	
Risk-taking	-0.011		0.062	***	0.051	***
	-(0.56)		(2.97)		(2.66)	
No. of observations	4738		4726		4748	
Adjusted R^2	0.089		0.090		0.102	

The investors' risk-taking attitudes are examined in this table. The variables are defined in Appendix 1. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 6, Panel A. Investment motives

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Ethical		Sustainable		Traditional		Ethical		Sustainable		Traditional	
Constant	2.081	***	2.529	***	2.853	***	2.209	***	2.661	***	2.798	***
	(18.11)		(21.43)		(26.25)		(19.37)		(22.94)		(25.80)	
Investor characteristics:												
Female	0.389	***	0.377	***	-0.377	***	0.363	***	0.338	***	-0.361	***
	(10.56)		(9.98)		-(10.79)		(9.89)		(9.08)		-(10.36)	
Millenial	0.064		0.166	***	-0.076	*	0.050		0.150	***	-0.069	*
	(1.50)		(3.81)		-(1.89)		(1.17)		(3.49)		-(1.71)	
Relationship	0.092	**	0.127	***	-0.067	*	0.089	**	0.130	***	-0.069	*
	(2.44)		(3.29)		-(1.88)		(2.40)		(3.44)		-(1.93)	
Children	0.085	**	0.095	**	-0.049		0.082	**	0.088	**	-0.046	
	(2.07)		(2.25)		-(1.25)		(2.00)		(2.12)		-(1.17)	
Religiousness	0.054	***	0.017		0.031	**	0.055	***	0.018		0.031	**
	(3.55)		(1.11)		(2.17)		(3.66)		(1.20)		(2.15)	
Finnish	-0.148	**	-0.145	**	0.218	***	-0.133	**	-0.117	*	0.208	***
	-(2.48)		-(2.36)		(3.86)		-(2.26)		-(1.95)		(3.69)	
Municipality	0.107	***	0.063	***	-0.033		0.101	***	0.053	**	-0.029	
	(4.53)		(2.58)		-(1.48)		(4.30)		(2.21)		-(1.31)	
Own house	-0.151	***	-0.154	***	0.034		-0.136	***	-0.134	***	0.026	
	-(3.58)		-(3.55)		(0.85)		-(3.24)		-(3.14)		(0.66)	
Education	0.150	***	0.175	***	0.011		0.141	***	0.163	***	0.015	
	(7.54)		(8.59)		(0.56)		(7.14)		(8.17)		(0.80)	
Business	-0.210	***	-0.124	***	0.244	***	-0.218	***	-0.129	***	0.245	***
	-(5.04)		-(2.91)		(6.19)		-(5.28)		-(3.09)		(6.26)	
Engineering	-0.172	***	-0.196	***	0.123	***	-0.166	***	-0.187	***	0.119	***
	-(4.37)		-(4.89)		(3.31)		-(4.27)		-(4.73)		(3.20)	
Working	0.016		-0.068		-0.016		0.010		-0.076	*	-0.012	
	(0.38)		-(1.61)		-(0.41)		(0.24)		-(1.83)		-(0.32)	
Salary	-0.005		-0.001		0.024		-0.004		0.002		0.023	
	-(0.22)		-(0.04)		(1.14)		-(0.16)		(0.08)		(1.09)	
Investment portfolio	-0.066	***	-0.054	***	0.120	***	-0.063	***	-0.048	***	0.118	***
	-(5.47)		-(4.37)		(10.65)		-(5.31)		-(3.97)		(10.50)	
Returns sacrificed	-0.010		-0.164	***	0.066	*						
	-(0.25)		-(3.88)		(1.68)							
Returns not maximized							-0.324	***	-0.473	***	0.190	***
							-(9.30)		-(13.35)		(5.73)	
No. of observations	4701		4689		4711		4701		4689		4711	
Adjusted R^2	0.089		0.091		0.101		0.106		0.122		0.107	

TABLE 6, Panel B. Investment motives

	Model 7		Model 8		Model 9	
	Ethical		Sustainable		Traditional	
Constant	2.001	***	2.336	***	2.929	***
	(17.62)		(20.35)		(27.17)	
Investor characteristics:						
Female	0.365	***	0.334	***	-0.360	***
	(9.96)		(9.04)		-(10.32)	
Millenial	0.044		0.134	***	-0.063	
	(1.03)		(3.15)		-(1.56)	
Relationship	0.075	**	0.104	***	-0.057	
	(2.01)		(2.75)		-(1.63)	
Children	0.088	**	0.097	**	-0.049	
	(2.14)		(2.37)		-(1.26)	
Religiousness	0.056	***	0.021		0.030	**
	(3.73)		(1.38)		(2.09)	
Finnish	-0.141	**	-0.128	**	0.212	***
	-(2.39)		-(2.13)		(3.77)	
Municipality	0.103	***	0.054	**	-0.030	
	(4.38)		(2.28)		-(1.35)	
Own house	-0.133	***	-0.123	***	0.022	
	-(3.18)		-(2.92)		(0.55)	
Education	0.138	***	0.155	***	0.018	
	(6.99)		(7.81)		(0.97)	
Business	-0.230	***	-0.153	***	0.255	***
	-(5.56)		-(3.67)		(6.51)	
Engineering	-0.172	***	-0.195	***	0.122	***
	-(4.41)		-(4.96)		(3.30)	
Working	0.011		-0.076	*	-0.012	
	(0.27)		-(1.84)		-(0.32)	
Salary	-0.005		0.000		0.023	
	-(0.21)		(0.00)		(1.12)	
Investment portfolio	-0.067	***	-0.054	***	0.121	***
	-(5.66)		-(4.55)		(10.75)	
Value increase	0.281	***	0.501	***	-0.201	***
	(8.74)		(15.46)		-(6.59)	
No. of observations	4701		4689		4711	
Adjusted R^2	0.104		0.133		0.109	

This table documents the association between different investment strategies and investment motives. The variables are defined in Appendix 1. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 7, Panel A. Sources of investment advice

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Ethical		Sustainable		Traditional		Ethical		Sustainable		Traditional	
Constant	2.087	***	2.462	***	2.875	***	2.087	***	2.462	***	2.872	***
	(18.35)		(21.07)		(26.78)		(18.35)		(21.08)		(26.76)	
Investor characteristics:												
Female	0.384	***	0.377	***	-0.376	***	0.382	***	0.377	***	-0.377	***
	(10.44)		(10.02)		-(10.82)		(10.39)		(10.01)		-(10.85)	
Millenial	0.055		0.169	***	-0.071	*	0.052		0.167	***	-0.067	*
	(1.29)		(3.89)		-(1.77)		(1.23)		(3.82)		-(1.67)	
Relationship	0.091	**	0.133	***	-0.072	**	0.089	**	0.132	***	-0.072	**
	(2.41)		(3.44)		-(2.01)		(2.38)		(3.42)		-(2.01)	
Children	0.078	*	0.085	**	-0.044		0.080	*	0.086	**	-0.044	
	(1.90)		(2.02)		-(1.14)		(1.94)		(2.05)		-(1.14)	
Religiousness	0.053	***	0.016		0.031	**	0.052	***	0.016		0.030	**
	(3.53)		(1.04)		(2.15)		(3.46)		(1.01)		(2.13)	
Finnish	-0.152	**	-0.135	**	0.205	***	-0.153	***	-0.139	**	0.211	***
	-(2.56)		-(2.21)		(3.65)		-(2.58)		-(2.27)		(3.75)	
Municipality	0.110	***	0.064	***	-0.032		0.108	***	0.062	***	-0.032	
	(4.66)		(2.64)		-(1.43)		(4.56)		(2.58)		-(1.41)	
Own house	-0.142	***	-0.150	***	0.036		-0.142	***	-0.150	***	0.035	
	-(3.37)		-(3.49)		(0.91)		-(3.38)		-(3.48)		(0.87)	
Education	0.152	***	0.176	***	0.012		0.150	***	0.175	***	0.014	
	(7.67)		(8.69)		(0.65)		(7.60)		(8.62)		(0.74)	
Business	-0.212	***	-0.120	***	0.239	***	-0.210	***	-0.119	***	0.238	***
	-(5.12)		-(2.84)		(6.10)		-(5.07)		-(2.80)		(6.09)	
Engineering	-0.171	***	-0.192	***	0.118	***	-0.172	***	-0.193	***	0.121	***
	-(4.37)		-(4.78)		(3.20)		-(4.39)		-(4.80)		(3.26)	
Working	0.020		-0.066		-0.016		0.020		-0.068		-0.011	
	(0.48)		-(1.57)		-(0.41)		(0.48)		-(1.61)		-(0.29)	
Salary	-0.008		0.001		0.024		-0.008		0.001		0.022	
	-(0.36)		(0.04)		(1.14)		-(0.36)		(0.07)		(1.06)	
Investment portfolio	-0.066	***	-0.052	***	0.120	***	-0.066	***	-0.051	***	0.120	***
	-(5.55)		-(4.23)		(10.72)		-(5.50)		-(4.19)		(10.68)	
Experts	-0.014		0.049		-0.147	**						
	-(0.19)		(0.64)		-(2.09)							
Internet experts							0.059		0.055		-0.057	
							(1.56)		(1.43)		-(1.60)	
No. of observations	4736		4724		4746		4736		4724		4746	
Adjusted R²	0.088		0.088		0.101		0.089		0.089		0.101	

TABLE 7, Panel B. Sources of investment advice

	Model 7		Model 8		Model 9		Model 10		Model 11		Model 12	
	Ethical		Sustainable		Traditional		Ethical		Sustainable		Traditional	
Constant	2.088	***	2.467	***	2.874	***	2.094	***	2.451	***	2.813	***
	(18.35)		(21.11)		(26.76)		(17.84)		(20.34)		(25.40)	
Investor characteristics:												
Female	0.385	***	0.383	***	-0.376	***	0.383	***	0.379	***	-0.373	***
	(10.42)		(10.12)		-(10.78)		(10.40)		(10.06)		-(10.72)	
Millenial	0.055		0.171	***	-0.068	*	0.055		0.169	***	-0.069	*
	(1.30)		(3.93)		-(1.69)		(1.29)		(3.88)		-(1.71)	
Relationship	0.091	**	0.134	***	-0.072	**	0.090	**	0.133	***	-0.071	**
	(2.42)		(3.48)		-(2.03)		(2.40)		(3.46)		-(2.00)	
Children	0.078	*	0.085	**	-0.042		0.078	*	0.084	**	-0.044	
	(1.90)		(2.01)		-(1.11)		(1.90)		(2.01)		-(1.14)	
Religiousness	0.053	***	0.017		0.030	**	0.053	***	0.017		0.031	**
	(3.53)		(1.11)		(2.09)		(3.51)		(1.09)		(2.17)	
Finnish	-0.152	**	-0.138	**	0.207	***	-0.151	**	-0.136	**	0.209	***
	-(2.56)		-(2.27)		(3.69)		-(2.55)		-(2.23)		(3.73)	
Municipality	0.110	***	0.065	***	-0.032		0.110	***	0.065	***	-0.031	
	(4.67)		(2.72)		-(1.48)		(4.64)		(2.69)		-(1.40)	
Own house	-0.142	***	-0.150	***	0.034		-0.142	***	-0.150	***	0.035	
	-(3.37)		-(3.48)		(0.86)		-(3.37)		-(3.47)		(0.88)	
Education	0.152	***	0.176	***	0.013		0.152	***	0.176	***	0.013	
	(7.68)		(8.71)		(0.69)		(7.67)		(8.69)		(0.70)	
Business	-0.212	***	-0.122	***	0.240	***	-0.211	***	-0.122	***	0.237	***
	-(5.12)		-(2.88)		(6.13)		-(5.10)		-(2.86)		(6.04)	
Engineering	-0.171	***	-0.193	***	0.119	***	-0.171	***	-0.192	***	0.119	***
	-(4.37)		-(4.82)		(3.22)		-(4.36)		-(4.79)		(3.13)	
Working	0.020		-0.067		-0.011		0.020		-0.068		-0.012	
	(0.49)		-(1.60)		-(0.29)		(0.49)		-(1.61)		-(0.30)	
Salary	-0.008		0.001		0.022		-0.008		0.001		0.022	
	-(0.37)		(0.05)		(1.06)		-(0.37)		(0.06)		(1.07)	
Investment portfolio	-0.066	***	-0.052	***	0.120	***	-0.066	***	-0.052	***	0.119	***
	-(5.56)		-(4.30)		(10.68)		-(5.52)		-(4.26)		(10.57)	
Family and friends	-0.012		-0.051		-0.031							
	-(0.27)		-(1.15)		-(0.76)							
No advice							-0.009		0.014		0.072	**
							-(0.25)		(0.39)		(2.17)	
-												
No. of observations	4736		4724		4746		4736		4724		4746	
Adjusted R^2	0.088		0.088		0.101		0.088		0.088		0.105	

This table documents the Finnish investors' common sources of investment advice. The variables are defined in Appendix 1. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 8. The family's investment habits

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Ethical		Sustainable		Traditional		Ethical		Sustainable		Traditional	
Constant	2.079	***	2.449	***	2.851	***	2.079	***	2.454	***	2.858	***
	(18.26)		(20.92)		(26.50)		(18.26)		(20.95)		(26.53)	
Investor characteristics:												
Female	0.390	***	0.377	***	-0.389	***	0.388	***	0.383	***	-0.380	***
	(10.57)		(9.98)		-(11.13)		(10.56)		(10.16)		-(10.92)	
Millenial	0.060		0.161	***	-0.079	*	0.062		0.162	***	-0.078	*
	(1.40)		(3.67)		-(1.95)		(1.44)		(3.64)		-(1.91)	
Relationship	0.098	**	0.120	***	-0.098	***	0.090	**	0.138	***	-0.071	**
	(2.55)		(3.05)		-(2.71)		(2.40)		(3.58)		-(1.98)	
Children	0.083	**	0.082	*	-0.052		0.078	*	0.092	**	-0.037	
	(2.01)		(1.94)		-(1.34)		(1.89)		(2.17)		-(0.95)	
Religiousness	0.056	***	0.019		0.028	**	0.056	***	0.019		0.028	**
	(3.75)		(1.26)		(1.97)		(3.74)		(1.26)		(1.98)	
Finnish	-0.153	***	-0.135	**	0.214	***	-0.153	***	-0.137	**	0.211	***
	-(2.59)		-(2.20)		(3.81)		-(2.59)		-(2.24)		(3.76)	
Municipality	0.112	***	0.062	**	-0.038	*	0.112	***	0.063	***	-0.035	
	(4.74)		(2.55)		-(1.69)		(4.73)		(2.61)		-(1.58)	
Own house	-0.150	***	-0.161	***	0.029		-0.152	***	-0.156	***	0.036	
	-(3.55)		-(3.72)		(0.72)		-(3.60)		-(3.61)		(0.90)	
Education	0.152	***	0.172	***	0.009		0.152	***	0.175	***	0.012	
	(7.68)		(8.48)		(0.47)		(7.67)		(8.61)		(0.67)	
Business	-0.214	***	-0.122	***	0.237	***	-0.212	***	-0.123	***	0.235	***
	-(5.16)		-(2.88)		(6.05)		-(5.12)		-(2.90)		(5.98)	
Engineering	-0.174	***	-0.190	***	0.122	***	-0.173	***	-0.192	***	0.119	***
	-(4.44)		-(4.74)		(3.30)		-(4.43)		-(4.78)		(3.22)	
Working	0.021		-0.062		-0.006		0.023		-0.067		-0.014	
	(0.50)		-(1.48)		-(0.16)		(0.56)		-(1.60)		-(0.35)	
Salary	-0.009		0.001		0.026		-0.009		0.001		0.025	
	-(0.40)		(0.06)		(1.23)		-(0.42)		(0.05)		(1.22)	
Investment portfolio	-0.063	***	-0.054	***	0.117	***	-0.063	***	-0.052	***	0.120	***
	-(5.24)		-(4.36)		(10.32)		-(5.27)		-(4.22)		(10.58)	
Family invests	-0.027		0.069	*	0.106	***						
	-(0.75)		(1.88)		(3.13)							
Parents invest							-0.028		0.033		0.055	
							-(0.73)		(0.85)		(1.54)	
No. of observations	4721		4709		4731		4721		4709		4731	
Adjusted R²	0.090		0.090		0.103		0.090		0.089		0.102	

This table shows the relationship between chosen investment strategies and the family members' investment history. The variables are defined in Appendix 1. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 9. Panel A. Investor behavior during COVID-19 pandemic.

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Ethical		Sustainable		Traditional		Ethical		Sustainable		Traditional	
Constant	2.091	***	2.496	***	2.896	***	2.110	***	2.513	***	2.822	***
	(18.00)		(20.89)		(26.41)		(18.43)		(21.36)		(26.13)	
Investor characteristics:												
Female	0.385	***	0.375	***	-0.377	***	0.381	***	0.370	***	-0.370	***
	(10.44)		(9.94)		-(10.83)		(10.33)		(9.80)		-(10.63)	
Millenial	0.057		0.168	***	-0.063		0.063		0.175	***	-0.075	*
	(1.34)		(3.84)		-(1.56)		(1.47)		(4.00)		-(1.86)	
Relationship	0.088	**	0.129	***	-0.073	**	0.088	**	0.129	***	-0.073	**
	(2.33)		(3.34)		-(2.04)		(2.34)		(3.35)		-(2.06)	
Children	0.084	**	0.087	**	0.040		0.081	*	0.083	*	-0.033	
	(2.04)		(2.07)		-(1.02)		(1.96)		(1.96)		-(0.84)	
Religiousness	0.052	***	0.016		0.033	**	0.052	***	0.016		0.032	**
	(3.45)		(1.02)		(2.31)		(3.45)		(1.02)		(2.27)	
Finnish	-0.155	***	-0.153	**	0.213	***	-0.159	***	-0.157	**	0.224	***
	-(2.61)		-(2.49)		(3.79)		-(2.68)		-(2.56)		(3.99)	
Municipality	0.110	***	0.064	***	-0.034		0.110	***	0.064	***	-0.033	
	(4.66)		(2.65)		-(1.54)		(4.66)		(2.65)		-(1.50)	
Own house	-0.145	***	-0.149	***	0.028		-0.146	***	-0.150	***	0.031	
	-(3.43)		-(3.45)		(0.70)		-(3.44)		-(3.46)		(0.79)	
Education	0.152	***	0.177	***	0.010		0.151	***	0.176	***	0.013	
	(7.66)		(8.69)		(0.53)		(7.62)		(8.67)		(0.72)	
Business	-0.211	***	-0.123	***	0.235	***	-0.209	***	-0.120	***	0.236	***
	-(5.07)		-(2.88)		(5.99)		-(5.04)		-(2.83)		(6.03)	
Engineering	-0.171	***	-0.189	***	0.117	***	-0.171	***	-0.188	***	0.118	***
	-(4.36)		-(4.68)		(3.15)		-(4.35)		-(4.67)		(3.19)	
Working	0.020		-0.064		-0.018		0.022		-0.061		-0.021	
	(0.50)		-(1.52)		-(0.46)		(0.55)		-(1.46)		-(0.54)	
Salary	-0.008		-0.001		0.025		-0.007		0.000		0.022	
	-(0.37)		-(0.05)		(1.20)		-(0.32)		(0.00)		(1.07)	
Investment portfolio	-0.067	***	-0.054	***	0.117	***	-0.065	***	-0.051	***	0.119	***
	-(5.45)		-(4.29)		(10.09)		-(5.45)		-(4.13)		(10.56)	
Started	-0.002		-0.020		-0.072	*						
	-(0.06)		-(0.49)		-(1.92)							
More							-0.075	**	-0.101	***	0.129	***
							-(2.15)		-(2.83)		(3.91)	
No. of observations	4709		4697		4719		4709		4697		4719	
Adjusted R^2	0.089		0.088		0.101		0.090		0.089		0.104	

TABLE 9. Panel B. Investor behavior during COVID-19 pandemic.

	Model 7		Model 8		Model 9	
	Ethical		Sustainable		Traditional	
Constant	2.108	***	2.489	***	2.849	***
	(18.43)		(21.17)		(26.37)	
Investor characteristics:						
Female	0.389	***	0.376	***	-0.379	***
	(10.54)		(9.95)		-(10.86)	
Millenial	0.052		0.166	***	-0.063	
	(1.22)		(3.79)		-(1.56)	
Relationship	0.089	**	0.129	***	-0.073	**
	(2.37)		(3.34)		-(2.06)	
Children	0.085	**	0.088	*	-0.039	
	(2.06)		(2.07)		-(1.00)	
Religiousness	0.052	***	0.016		0.033	**
	(3.44)		(1.01)		(2.29)	
Finnish	-0.153	**	-0.151	**	0.216	***
	-(2.57)		-(2.46)		(3.84)	
Municipality	0.110	***	0.064	***	-0.034	
	(4.67)		(2.66)		-(1.51)	
Own house	-0.144	***	-0.149	***	0.030	
	-(3.41)		-(3.43)		(0.76)	
Education	0.153	***	0.177	***	0.011	
	(7.72)		(8.73)		(0.61)	
Business	-0.210	***	-0.122	***	0.238	***
	-(5.07)		-(2.86)		(6.07)	
Engineering	-0.169	***	-0.188	***	0.118	***
	-(4.32)		-(4.66)		(3.17)	
Working	0.019		-0.065		-0.017	
	(0.46)		-(1.53)		-(0.44)	
Salary	-0.008		-0.001		0.024	
	-(0.37)		-(0.06)		(1.15)	
Investment portfolio	-0.065	***	-0.052	***	0.121	***
	-(5.39)		-(4.24)		(10.67)	
No impact	-0.075	**	-0.018		0.033	
	-(2.27)		-(0.52)		(1.04)	
No. of observations	4709		4697		4719	
Adjusted R^2	0.090		0.088		0.101	

This table documents the changes in the investor behavior during the COVID-19 pandemic. The variables are defined in Appendix 1. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

TABLE 10. Robustness Test - Investment motives

	Model 1		Model 2		Model 3	
	Ethical		Sustainable		Traditional	
Constant	2.272	***	2.827	***	2.732	***
	(19.69)		(24.23)		(24.90)	
Investor characteristics:						
Female	0.359	***	0.328	***	-0.357	***
	(9.80)		(8.89)		-(10.25)	
Millenial	0.044		0.134	***	-0.063	
	(1.03)		(3.15)		-(1.56)	
Relationship	0.081	**	0.109	***	-0.060	*
	(2.18)		(2.90)		-(1.69)	
Children	0.084	**	0.094	**	-0.048	
	(2.06)		(2.30)		-(1.23)	
Religiousness	0.056	***	0.021		0.030	**
	(3.72)		(1.36)		(2.10)	
Finnish	-0.135	**	-0.121	**	0.210	***
	-(2.28)		-(2.03)		(3.72)	
Municipality	0.101	***	0.052	**	-0.029	
	(4.30)		(2.21)		-(1.31)	
Own house	-0.132	***	-0.122	***	0.022	
	-(3.14)		-(2.89)		(0.54)	
Education	0.138	***	0.155	***	0.018	
	(6.98)		(7.80)		(0.98)	
Business	-0.230	***	-0.149	***	0.254	***
	-(5.47)		-(3.59)		(6.47)	
Engineering	-0.168	***	-0.192	***	0.121	***
	-(4.33)		-(4.89)		(3.26)	
Working	0.009		-0.077	*	-0.012	
	(0.22)		-(1.87)		-(0.30)	
Salary	-0.004		0.001		0.023	
	-(0.18)		(0.03)		(1.11)	
Investment portfolio	-0.065	***	-0.052	***	0.120	***
	-(5.46)		-(4.37)		(10.66)	
Returns sacrificed	-0.147	***	-0.380	***	0.152	***
	-(3.40)		-(8.73)		(3.71)	
Returns not maximized	-0.364	***	-0.577	***	0.232	***
	-(9.91)		-(15.54)		(6.62)	
No. of observations	4701		4689		4711	
Adjusted R^2	0.108		0.136		0.109	

This table documents the association between different investment strategies and investment motives. The variables are defined in Appendix 1. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

[1] The millennial generation (also known as generation Y) was born between 1981–1996.

[2] Millennials are reportedly twice as likely than other investors to invest in companies with significant positive social or environmental impacts (Morgan Stanley, 2017b).

[3] In the 2022 Transparency International Survey, Finland ranked as the second least corrupt country.

[4] Within the equity savings account, investors will be able to trade in shares of both Finnish and foreign companies listed on a stock exchange up to €50,000 without incurring any direct taxes (Finnish Tax Administration, 2022).

[5] Their database does not cover indirect shareholdings such as the holdings of investment companies owned by single individuals or individuals' indirect ownership through mutual funds.

[6] The survey questions are available upon request from the authors.

[7] In this section, we do define tradional, ethical and sustainable investing.

[8] The survey questions are available upon request from the authors.

[9] A copy of the survey questionnaire is available upon request from the authors.

[10] Nordnet (2021) reports that 62 % of their customers are men, 36% women and 2% companies. The largest customer segment is 26–35-year-old private investors (28%). In total, 70% of the customers own stocks and 55% own shares of at least one fund.

[11] In addition, a collaboration with a market research agency was also considered. The agency would, however, contact random individuals and many of them might not be investors nor interested in investing. This option was abandoned due to a low efficiency and a high cost. A collaboration with a traditional bank was also abandoned due to the tight GDPR and bank privacy regulations.

[12] This forbids storing respondents' contact details.

[13] The contact details of the people participating to the raffle cannot be linked to the survey responses.

[14] Results are available upon request.

[15] Source: https://www.statista.com/statistics/1155008/average-age-of-population-by-gender-finland/

[16] Source: https://stat.fi/en/statistics/pra

[17] Results are available upon request from the authors.

[18] Results are available upon request from the authors

[19] Results are available upon request from the authors.

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