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ESG Knowledge and Interest: A study among Householders in 8 countries

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Dave Fernandez

Sim Kee Boon Institute for Financial Economics at the Singapore Management University

Carlo de Bassa Scheresberg

Global Financial Literacy Excellence Center (GFLEC)

Andrea Hasler

Global Financial Literacy Excellence Center (GFLEC)

Annamaria Lusardi

Global Financial Literacy Excellence Center (GFLEC)

Abstract:

In this study, we surveyed over 16,000 respondents in eight countries to collect information on individuals' preferences for sustainable investing, ownership of ESG investment products, as well as their level of financial literacy, investing sophistication and understanding of topics connected to ESG criteria. We find that interest in sustainable investing is popular among adults in the eight countries, especially among younger generations. However, actual ownership of ESG investments is still limited in most countries. Most importantly, many investors lack awareness about the sustainability profile of their investments and believe that lack of knowledge, experience, and transparency are the main barriers to ESG investing. When we assessed respondents' knowledge of topics connected to ESG criteria and financial and investing concepts, we found that most respondents and investors lack the basic knowledge to make savvy investment decisions regarding ESG investing.

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Dave Fernandez
Sim Kee Boon Institute for Financial Economics at the Singapore Management University
dfernandez@smu.edu.sg

Carlo de Bassa Scheresberg
Research Fellow, Global Financial Literacy Excellence Center
carlo.debassa@gmail.com

Andrea Sticha *(corresponding author)*
Assistant Research Professor in Financial Literacy
Deputy Academic Director of the Global Financial Literacy Excellence Center
The George Washington University School of Business,
Duquès Hall, Suite 450D, 2201 G Street, NW Washington, D.C. 20052
ahasler@gwu.edu

Annamaria Lusardi
University Professor of Economics and Accountancy
Founder and Academic Director of the Global Financial Literacy Excellence Center
The George Washington University, Duquès Hall, Suite 450E, 2201 G Street, NW Washington, D.C. 20052
alusardi@gwu.edu

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1. Introduction

Over the past decade, environmental, social, and governance (ESG) investing has grown from a niche investment strategy to a global investment mega-trend that is bringing about a fundamental shift within the global investment industry. Thanks to rising demand for sustainable products and the intervention of new favorable regulations worldwide, ESG products have become increasingly available to investors and now account for over $40 trillion of global assets under management (PriceWaterHouse Coopers, 2022). In 2022, the rapid growth that continued for several years came to a halt: ESG investments saw a net outflow of capital due to deteriorating market conditions and the relative appreciation of assets, such as traditional energy titles, that are usually under-represented in ESG strategies (Bloomberg, 2022). Nonetheless, many financial operators remain bullish about ESG investment approaches, convinced that ESG products are here to stay (Dow Jones, 2022).

Over the long term, the demand for sustainable securities is buoyed by changing attitudes toward sustainable finance and by the intervention of policymakers and regulators worldwide, who are passing new regulatory frameworks to simplify directing capital toward addressing our society's problems. Regulations are enacted locally but create far-reaching effects within the investment industry worldwide, and progressively open the doors of ESG investments to the broader audience of retail investors. Perhaps the most significant recent regulation in this area is the 2021 European Sustainable Finance Disclosure Regulation (SFDR), which is one of the three regulatory pillars in the EU's Action Plan on sustainable finance. Within the framework of the SFDR, in 2022 financial advisors and investment managers in the EU became legally required to ascertain the sustainability preferences of their clients (ESMA, 2022).

Reaching the mass of retail investors, however, poses a series of challenges. So far, ESG investments have been predominantly owned by institutional investors, but as the doors of ESG investments progressively open to the global audience of retail investors, it is yet

to be determined how ready investors are to navigate the complexities of ESG investing and to balance the costs and benefits of these strategies.

Investors who want to do good in addition to earning a return on their investment portfolio have to make investment decisions based not only on risk and return but also on environmental and social impact. However, we know from previous research that financial literacy worldwide is very low, with only one in three adults being financially literate, i.e. they demonstrate a basic understanding of financial concepts, such as risk diversification (Klapper and Lusardi, 2020). Integrating ESG criteria into retail investors' decision strategies adds a layer of complexity, and it raises the question of how well-equipped investors are to make investment decisions that are both financially sound and that align with their values. For an investor concerned about, for example, climate change, this requires not only investment knowledge but also an understanding of relevant environmental issues.

In this paper, we report findings from a new survey launched in September 2022 in eight countries. The study aimed to shed light on three main research questions: (1) What are individuals' attitudes toward ESG investments? (2) How much do individuals know about the topics that are connected to ESG criteria? and (3) How do financial literacy and ESG literacy play a role in ESG investing? To answer these questions, we surveyed over 16,000 individuals in eight countries (the United States, Australia, Singapore, Indonesia, France, Germany, the UK, and Japan). Our findings highlight that interest in sustainable investing has become very popular among adults in the eight countries, especially among younger generations. However, actual ownership of ESG investments is still limited in most countries. Most importantly, many investors seem to lack awareness about the sustainability profile of their investments and believe that lack of knowledge, lack of experience, and lack of transparency are the main barriers to ESG investing. When we assessed respondents' knowledge about topics connected to ESG criteria and financial and investing concepts, we found that most respondents and investors lack the basic knowledge to make savvy investment decisions. Our findings have implications for policymakers and identify several areas that can be targeted by forward-looking industry leaders who want to help their clients become more aware of the costs, risks, and benefits associated with ESG investments.

2. Literature review

ESG investing refers to strategies that seek both positive economic returns and a positive impact on society, the environment, and corporate governance. Investors who follow this approach assess several corporate indicators (such as carbon footprint, gender representation, and company governance policies) and then use this information to inform their investment strategies. This approach is applied in practice in multiple ways. Some investors focus on excluding businesses that engage in conduct at odds with their values, while others integrate sustainability criteria and financial information to decide portfolio allocations (Boffo and Patalano, 2020). Moreover, some investors deliberately seek to make an impact, even at the expense of investment performance, and yet another group of investors invests in ESG products purely for financial reasons.

This approach to investing was developed primarily for large institutional investors, but over the past five years, it started to gain a foothold among retail investors. By 2020, retail investors had reached 25% of the total global ESG market, soaring from 11% in 2012 (Ferraro, 2022). Two main forces drive the shift toward sustainable investing. On the one hand, many investors in the US, Europe, and Asia are developing an increased willingness to connect their investment decisions to their values (Goodsell, 2021). On the other hand, policymakers worldwide are increasingly adopting new regulations to sustain the expansion of sustainable investing. Overall, the emergence of the sustainable investing trend has direct and important implications for the global investing industry. For example, a study leveraged the launch of Morningstar's sustainability rating to show that categorizing a mutual fund as "high sustainability" led to a substantial inflow of investments, while categorizing a mutual fund as "low sustainability" brought an even higher outflow of funds (Hartzmark and Sussman, 2019).

Several studies analyzed the factors that influence sustainable investing. What seems to motivate retail investors the most are the desire to invest according to one's values, the desire to make a positive impact, and the belief that ESG investments may be more profitable than traditional investments in the long term (Morgan Stanley, 2019). Still, the sustainability aspect may be predominant over the financial aspect: many retail investors are interested in ESG not so much because they expect a better financial return but

primarily because of their social preferences (Siemroth and Hornuf, 2021; Bauer et al., 2021).

However, despite the global push toward sustainable investing, the regulatory framework is still very fragmented: emerging guidelines are not binding, there is no clear (shared) definition of a sustainable investment product, and the current sustainability ratings differ widely (Berg et al., 2022). These uncertainties create a complex investing environment that is difficult to navigate for retail investors. In the US, nearly 60% of investors indicated that it is hard to see their investments' social or environmental benefits, and 73% indicated that they would invest more in responsible investing if these benefits were easier to see (Nuveen, 2021). Similarly, according to a recent survey of American financial advisors, only two financial advisor clients in five understand their ESG options, which confirms the existence of a clear information and knowledge gap (Cheung, 2021; HSBC, 2021).

Because of this complex environment and lack of transparency, it is unclear to what extent retail investors are equipped with the knowledge to make savvy investment decisions that align with their values. Previous studies have shown that financial literacy worldwide is very low (Klapper and Lusardi, 2020). In this context of low financial literacy, ESG investing adds a layer of complexity to the investor – who now has to make decisions based not only on risk and return but also on the sustainability of their investment.

Focusing on financial knowledge is especially important when increasingly complex financial products become easily available to a wide audience (for example, with governments in many countries pushing to boost access to financial products). The literature on financial literacy has shown that people's financial knowledge affects the quality of financial decisions that people make. For example, several studies, in the United States (US) and other countries, have found that individuals who are more financially literate are more likely to undertake retirement planning, and those who plan also accumulate more wealth (Lusardi and Mitchell 2007, 2011). Financial literacy is also connected to higher engagement in financial markets (see, for example, Van Rooij, Lusardi, and Alessie 2011), and financially savvy investors are more likely to diversify risk by spreading funds across several ventures (Abreu and Mendes, 2010).

A lack of financial literacy might also explain part of the wide gap between interest in sustainable investments and actual investment in ESG. Although over half of global retail

investors are interested in sustainable investing, only a small part actively currently owns ESG (Goodsell,2021). Anderson and Robinson (2019) studied the connection between preferences for sustainable finance and actual green investments in a sample of Swedish investors. They found little evidence that individuals with strong beliefs about environmental issues express these beliefs through choices in financial markets, even if they state a willingness to do so. They also found a low correlation between financial and environmental literacy and no correlation between environmental literacy and green investments. Interestingly, the authors found that investors with higher financial sophistication were more likely to translate their environmental beliefs into actual investment decisions. Similarly, in a study of Swiss investors, Filippini et al. (2022) found that understanding of ESG criteria is very low overall, but investors who are ESG literate are significantly more likely to own ESG investments.

In sum, understanding the connection between investors' literacy, values, preferences, and actions is an essential prerequisite for policies that can help foster future growth in ESG investments. In this study, we advance the research in this area by looking at the interplay between financial literacy and ESG literacy and their relationship with ESG investments.

The remainder of the report is structured as follows. Section 3 describes the data and the demographics of our study population. Section 4 describes the main highlights of the data with univariate statistics. Section 5 presents the multivariate analysis survey method and discusses regression results. Section 6 concludes.

3. Data

In September 2022, we fielded our SKBI-GFLEC Sustainable Investment Survey through YouGov's Global Omnibus online polling service. YouGov is an audience platform that enables accurate consumer targeting and research and reaches over 9M people in North America, Europe, the Middle East, and the Asia-Pacific.[1] The survey included 36 questions aimed at collecting information about respondents' preferences toward ESG investments, ownership of ESG investments, knowledge of ESG topics, and questions that measure individuals' understanding of basic financial concepts (financial literacy) and

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[1] Further information on YouGov is available at yougov.com.

investment-specific concepts (investor sophistication). We organized the questionnaire into 6 main sections:[2]

- preferences toward sustainable finance and ESG investment products
- ownership of ESG investments and other sustainable securities
- barriers to the adoption of ESG investments
- ESG literacy
- financial literacy
- investor decision-making behavior and sources of ESG investing information
- investing sophistication

We fielded the survey in 8 countries (Australia, Singapore, Indonesia, France, US, Germany, UK, and Japan), with a sample size of approximately 2,000 respondents in each country. The questionnaire is investment-focused, and some questions are not relevant for people of young age (many are still in school and financially supported by their parents). Thus, to make the sample more homogeneous, we included in the survey only individuals aged 23 and older.

The data is nationally representative, and the findings can be generalized to the broader country populations except for Indonesia, where we could not draw a representative sample via online polling because internet penetration is not widespread yet. As we will explain throughout this report, the Indonesian findings are sometimes an outlier compared to other countries. It is important to note that the Indonesian data only represent Indonesia's online population, not the entire Indonesian population. During our data analysis, we run multiple robustness checks to determine how the findings change when we exclude Indonesian respondents from the sample. The sample of Indonesian respondents is not large enough to influence overall results in a significant way. However, because the Indonesian sample is comparatively wealthier and younger, the study's overall results would change by a few percentage points, especially when looking at the segment of investors. For these reasons, we decided to display the Indonesian data in the cross-country comparisons, but all averages for the full sample have been calculated after excluding Indonesian respondents from the sample.

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[2] See Appendix B for the questionnaire.

Our final sample consists of 14,374 respondents in seven countries, plus 2,002 respondents in Indonesia, which we discuss separately. Demographic statistics are reported in Table 1 and include information on age, gender, ethnicity, marital status, income, education, and employment status. All of the statistics have been weighted following YouGov's recommendations.

[Insert Table 1 here]

The overall sample is well-balanced in terms of gender and age: 27% of respondents are 23 to 34, one-third 35 to 54, and 40% are aged 55 or more. Minority ethnicities represent about a quarter of respondents, and about half of the sample is married or in a civil partnership (47%).[3] Over two respondents in five have a college degree (42%), and about 60% are employed either full-time or part-time. Income information was not directly comparable because it was originally collected as annual household income in local currency. For this reason, we grouped respondents into three income groups according to the (country's) income distribution observed in the sample: "Bottom 50%" (includes respondents with income ≤ 50th percentile), "Middle 40%" (income between the 50th and the 90th percentile) and "Top 10%" (income > 90th percentile).[4] Grouping respondents by income distribution facilitates cross-country comparison, and also helps us capture how the perception of ESG investments varies at the edges of the income distribution—for example, we can generate insights into how the top 10% of income respondents differ from the other groups.[5]

Aside from the demographics of the overall sample, it is important to note that the populations of the countries we surveyed are very different. For example, respondents in Australia, Singapore, and Indonesia are significantly younger, on average, than respondents in other countries. Singapore has a much higher percentage of respondents actively in the workforce (75%) than other countries. The percentage of adults with a

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[3] Due to regulatory reasons, ethnicity data is not available for France and Japan. For Germany, ethnicity information refers to a yes/no question on migration background.

[4] About 14% of respondents either skipped the income question or answered "do not know "/ "prefer not to say", and therefore were excluded from the grouping by income. Further, because our data is categorized in income brackets, we assigned respondents to the three groups based on the closest income threshold.

[5] Since the Indonesian data is not nationally representative, we assigned Indonesian respondents to the three income groups based on information from the World Inequality Database (WID) (accessible at https://wid.world). As we expected, Indonesian respondents in our sample tend to be wealthier: the income distribution that we observe in our sample has a higher representation of high-income respondents compared to data in the WID database.

college degree also varies considerably (between 29% in the US and 51% in France). These differences make it harder to answer questions with descriptive comparisons only. For this reason, we added a dedicated section that discusses results from multivariate regression analyses, where we check how findings change when we control for demographic differences (Section 5).

Finally, in Table 2A, we report percentages of investment ownership by country, distinguishing between retirement and non-retirement investment. We collected information on financial investments with two questions: first, we asked respondents whether they have investments in self-directed retirement accounts, and then we asked them if they have other types of financial investments not related to retirement (such as stocks, bonds, mutual funds, or other securities). Overall, investors make up two-fifths of the sample (40%): 23% of respondents reported having investments in self-directed retirement accounts, and a third reported having non-retirement investments. France, the UK, and Japan stand out as the countries with the lowest investment rates. The difference in retirement systems explains a large part of the differences that we observe, but not all: for example, France has a lower-than-average investor rate even when it comes to non-retirement investments (30% vs 40% average among other countries), consistent with EU data (EFAMA, 2019).

[Insert Table 2A here]

Another consideration is that investors are a selected group, with different demographics compared to the full sample (as described in Fish et al. 2019). Table 2B reports demographic characteristics for all investors (that is, respondents who have retirement or non-retirement investments). While there is no significant difference by age compared to the full sample, investors are more likely to be males (58% vs 42% women), married (53%), and employed (69% vs 31% not employed). In addition, they are more likely to have a college degree (55%), and they live, on average, in higher-income households (56% live in households in the top half of the income distribution, compared to only 30% of non-investors). Because these demographic differences are so striking, we will often discuss how our findings change among the sample of investors only.

[Insert Table 2B here]

4. Descriptive findings

4.1 Attitudes toward ESG investments

Our first objective was to understand to what extent people are interested in ESG topics and how they perceive the cost and benefits of ESG investments. To gain this information, we included in the survey a set of questions that capture preferences for ESG investments and provide insights into individuals' willingness to pay for such products. Specifically, respondents were asked to rate their agreement with the following five statements:[6]

1. "I want to make a positive impact with my investments."
2. "I am willing to pay more for environmentally friendly products or products whose production processes are socially responsible."
3. "If I were to invest in equities, *environmental responsibility / social responsibility / good and responsible corporate governance* would be an important criterion for choosing the company to invest in."[7]
4. "ESG investments generate, on average, higher returns in the long run."
5. "It is worth paying higher fees for a mutual fund that makes only ESG sustainable investments."

Respondents could choose responses on a scale from 1 to 7, where 1 indicated "I strongly disagree", 4 was "I neither agree nor disagree", and 7 indicated "I strongly agree." Respondents who agreed with the statements chose responses from 5 to 7.[8]

The first main finding is that interest in sustainable investing has become mainstream in many countries: many respondents care about investing responsibly and value sustainable and socially-responsible products (Table 3). More than half of respondents (54%) agreed with the statement "I want to make a positive impact with my investments," which speaks to how interest in responsible investing has become mainstream. Forty-

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[6] These questions were asked in previous studies on ESG investments in Sweden (Anderson and Robinson, 2022) and in the US (Goodsell, 2021).

[7] In the survey, we asked three distinct questions for each of the three ESG areas: environmental responsibility, social responsibility and good and responsible corporate governance.

[8] The questionnaire was introduced by a statement that explained what the ESG acronym stands for: "*These days, a lot of people are thinking about new ways to invest their money. There is also an ongoing discussion around ESG investments, that is, investments that respect environmental, social, and governance criteria. We are interested in your opinions on some of these issues.*"

three percent of the sample was willing to pay more for environmentally friendly and socially responsible products. About a quarter (24%) agreed that it would be worth paying higher fees for a mutual fund containing only ESG investments. Finally, nearly one-third of respondents (29%) agreed with the statement "ESG investments generate, on average, higher returns in the long run".

[Insert Table 3 here]

As we highlighted in Section 2, ESG investing appeals to different profiles of investors, from those who seek a positive impact even at the expense of financial performance to those who invest in ESG purely for financial reasons. Thus, it is perhaps not surprising that many respondents consider ESG factors when making investment decisions. Two-thirds of adults agreed that environmental, social, or corporate governance factors are important when choosing equity investments, showing that ESG criteria already play a role in many investors' decisions. The most valued criterion was corporate governance (57%), which surpassed social responsibility (51%) and environmental responsibility (46%) as the main ESG factor that is considered when making equity investments.

Australia, Singapore, and France have the largest share of respondents who want to connect their investments with their values: about two-thirds of Australian and French respondents agreed that they want to make a positive impact with their investments. In Indonesia, the percentage is even higher (80%). The Indonesian result is not generalizable to the full Indonesian population, but it speaks for the strong interest in sustainable investing from the wealthier part of the population with internet access.

In contrast, we find a somewhat higher level of skepticism toward ESG approaches in the UK. For example, only 17% of respondents think ESG investments will have higher returns in the long run (compared to 30% of all respondents). The UK is also the country with the highest percentage of "do not know" responses when it comes to ESG investing preferences.[9]

We also found that interest in sustainable investing is much higher among investors than in the general population (Figure 1). For example, 70% of investors agreed that they want to make a positive impact with their investments, compared to 40% of adults who do not

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[9] "Do not know" answers are not reported in the table but are available upon request.

own investments. This finding shows that, when we discuss ESG investment, we need to distinguish between investors and not investors, because perceptions around ESG products can be very different.

[Insert Figure 1 here]

Australia, Singapore, and Indonesia have a substantially higher share of respondents with favorable ESG preferences than other countries, which may be attributable (at least in part) to their younger populations. We see this in Table 4, where we report ESG preferences by demographics. Younger adults display higher interest in all areas related to ESG investing. For example, over 60% of respondents aged 23-34 agreed that they want to make a positive impact with their investments, compared to 47% among respondents aged 55 or more. Therefore, young respondents are leading the trend toward sustainable investing. This contrasts with their current investment capacity, as younger adults tend to have fewer resources.

[Insert Table 4 here]

Aside from age, we find that interest in sustainable investing is higher among several other demographics. Positive attitudes toward ESG investments are strongest among respondents with a college degree (62% want to make a positive impact with their investments, vs 47% among those who do not have a college degree) and respondents with higher income. We do not find statistically significant differences by gender in the full sample. However, when we look at investors only, women more often agree with all statements about ESG than men, except for the statement on ESG investment return and higher fees (which are not significant).[10] This is consistent with research showing that women are more likely than men to prefer sustainable finance (S&P Global, 2019). For this reason, throughout the report, we pay particular attention to gender differences and how these differences play a role in shaping ESG investment ownership.

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[10] Statistical significance has been determined with t-tests by gender.

4.2 Investments in ESG funds and other sustainable securities

We have seen that many respondents are interested in making a positive impact with their investments and believe ESG investments can be good financial opportunities. Nonetheless, we find that the actual adoption of ESG products is still limited in most countries. Table 5 summarizes self-reported ownership of ESG investments and other sustainable securities by country and investment type. On average, only 29% of investors reported having investments in ESG funds and other sustainable assets, suggesting that ESG products have built a presence in the market but still have a large audience to reach.

[Insert Table 5 here]

The countries with the highest proportion of ESG investors are Australia (41%) and Germany (35%), which, as mentioned earlier, are also countries where interest in sustainable products is above average. In Indonesia, nearly half of investors with internet access have ESG investments (48%). On the other end of the spectrum, we find the UK and Japan (both at 21%), where the adoption of ESG investment products is lowest.

These investors are much more likely than other investors to have positive preferences for sustainable investing. For example, 64% of ESG investors believe that ESG investments will generate, on average, higher returns in the long run, which compares with 39% among other investors (Figure 2). However, the other side of the coin is that even among those who want to make a positive impact with their investments, only about a third reported owning ESG products (35%).

[Insert Figure 2 here]

It is especially troubling that many investors *do not know* if they own sustainable investments. Nearly 30% of investors with self-directed retirement accounts do not know if they have retirement investments in ESGs, as well as 34% of those who have non-retirement investment assets. Overall, almost two in five investors responded "don't know" at least once, and the percentage is even higher in the UK (49%). This result is consistent with evidence that a large share of investors is not well aware of (or is not well-informed about) their investment strategies (FINRA, 2021; Anderson and Robinson, 2019; HSBC, 2021; Foster Denovo, 2022).

The lack of awareness is striking in all demographic groups (Figure 3). While ESG ownership is prevalent among younger investors (38%), male investors (31% vs 26%), investors with a college degree (34% vs 24%), and investors with higher income, "do not know" answers are widespread among all demographics, especially women (45%) and older respondents (46%).

[Insert Figure 3 here]

In sum, there is an evident lack of awareness among many investors, who are interested in sustainable products but do not seem to know whether their investments are sustainable. As ESG products become increasingly available to retail investors, it will be paramount to find solutions that address this lack of awareness. In the next section, we shed light on the barriers to sustainable investing and analyze the factors associated with this widespread lack of awareness.

4.3 Barriers to ESG investing

Given the gap between preferences toward sustainable investing and actual ownership of ESG investments (as well as the general lack of awareness), it is interesting to understand investors' perspectives on the barriers preventing them from investing in ESG products. In the questionnaire, we asked investors:[11]

- *What do you consider as the main barrier when investing in ESG?* (Question only for ESG Investment owners)
- *What is the main reason why you do not have investments in ESG?* (Question only for investors who indicated that they did not own ESG investments)

Respondents could choose among seven possible options, in addition to "Don't know" and "Prefer not to say". They also could select "Other" and write a comment.

Figure 4 reports responses to these two questions. Among ESG investors, lack of knowledge was cited as the primary barrier to sustainable investing (24% of the sample), followed by lack of transparency (17%) and lack of expertise (15%). Lack of knowledge is the primary barrier in all countries except Germany, where most respondents indicated a lack of transparency as the main obstacle to these investment products (24%). Among

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[11] This question was asked in the Nordea ESG Survey report (2021), we slightly modified it to adapt it to our survey. Also, note that we did not ask these questions to respondents who indicated that they "do not know" if they have ESG investments, therefore a lower number of responses to these questions.

those who do not own ESG investments, instead, "lack of interest" was indicated as the number one barrier (24%), followed by "lack of knowledge" (20%) and "ESG products are too expensive" (13%).

[Insert Figure 4 here]

Because "lack of interest" is so prevalent in the second group of investors, it is also interesting to see how responses differ when we distinguish between those who want to have a positive impact and those who do not (Figure 5). We find that the distribution of responses changes dramatically: nearly a third of those who want to make a positive impact indicated that "lack of knowledge" is their biggest barrier to sustainable investing.

[Insert Figure 5 here]

In Table 6, we report responses by demographics and join responses from both groups of investors. We note two main findings. First, lack of knowledge is the predominant barrier among all demographic groups, even among many top-10% income earners (24%) and investors with a college degree (23%). Second, lack of knowledge is especially relevant for female investors: nearly one-third indicated that this is the main barrier for them, compared to 20% of men. Thus, lack of knowledge may discourage predominantly female investors, who have a higher propensity to favor sustainable finance, but lower confidence in their understanding of these products.

[Insert Table 6 here]

In the following sections, we dive deeper into this topic—assessing respondents' familiarity with ESG topics and their understanding of basic financial and investing concepts.

4.4 ESG literacy

The ESG literacy section of the questionnaire included nine multiple-choice questions designed to measure respondents' knowledge of basic environmental and social responsibility topics and corporate governance concepts. Similar to how the "Big 3" financial literacy questions have become a benchmark to compare financial literacy levels worldwide, our ESG literacy indicator aims to provide a summary measure of respondents' ability to evaluate ESG criteria.

We asked three questions for each of the three ESG areas. For environmental topics, we asked questions on the leading causes of greenhouse gas emissions, food waste, and threats to wildlife. For social topics, we asked questions on the prevalence of poverty, the gender pay gap, and the leading causes of childhood malnutrition. Finally, for responsible governance topics, we asked questions on the goal of corporate governance policy, the main corporate governance stakeholders, and how to minimize conflict of interest among companies' boards of directors. The exact wording of the questions is reported in Appendix B.

This set of questions was specifically designed to differentiate levels of knowledge around ESG topics. Thus, as expected, we find a significant variation in correct responses to each question (Table 7). Environmental topics had the highest number of correct responses. Seventy-six percent of respondents could correctly answer at least one question in this area. In contrast, social and corporate governance topics were significantly harder for most respondents, as less than 60% could respond to at least one of these questions correctly. In particular, corporate governance had the highest percentage of respondents who indicated "don't know" (41%), even though this was the most valued ESG factor when choosing companies to invest in (as we showed in Section 4).

[Insert Table 7 here]

We constructed a summary measure of ESG literacy by calculating the number of respondents who correctly answered at least one question in each of the three ESG areas. This measure, which we call "ESG literacy indicator," is a summary of individuals' familiarity with ESG topics and is more robust to the biases that may affect responses to individual questions. According to this measure, one respondent in three can be defined as ESG literate in the eight countries we surveyed, showing that familiarity with ESG factors is lacking—especially, as we mentioned previously, regarding social and corporate governance criteria. There is, however, considerable variation by country: for example, Australia, Germany, and the UK have the highest ESG literacy rates (close to or above 40%) (Figure 6). France, Singapore, and the US are close to the average (29-34%), while Japan and Indonesia have the lowest ESG literacy rates among the eight countries (ESG literacy below 30%). Japan also has the highest percentages of "do not know" answers for each of the three areas of knowledge. This result confirms previous

research that documented widespread ESG information deficits among Japanese retail investors, and it helps explain why retail sustainable investing is still in its infancy in Japan (Gutsche et al., 2021).

[Insert Figure 6 here]

Looking at variation by demographics, we find that ESG literacy is higher, on average, among older respondents, respondents with higher income, and respondents with a college degree (Table 8). Education is a big differentiator: 40% of those with a college degree are classified as ESG literate, which stands in stark contrast to 28% of those without a college degree.

[Insert Table 8 here]

We also notice that women have lower ESG literacy than men, on average: the difference is not large (37% vs 32%) but is statistically significant.[12] Overall, women had more difficulty than men with corporate governance questions (8pp difference), and they were also more likely to answer "do not know" (49% vs 34%), which further highlights how women feel less familiar with these topics.

Lastly, in Figure 7, we plot ESG literacy rates by investment ownership to determine if investors differ from other respondents regarding ESG knowledge. As expected, ESG literacy rates are higher among investors than in the general population, but overall ESG literacy remains quite low—only about two investors in five are ESG literate (44%). In addition, we see no statistically significant difference in ESG literacy between owners of ESG products and other investors, which suggests that ESG investors may not be better than other investors at evaluating ESG criteria.

[Insert Figure 7 here]

4.5 Connecting ESG literacy and financial literacy

To understand how financial literacy and ESG literacy are connected, we included in the questionnaire the "Big 3" financial literacy questions, a set of questions that Annamaria Lusardi and Olivia Mitchell have developed and used in several international surveys as

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[12] The ESG literacy gap is driven mainly by France and Japan (9-10 percentage points difference). In the other countries we observe a smaller difference which is weakly statistically significant.

a benchmark of financial literacy. The "Big 3" financial literacy questions assess basic knowledge of three fundamental concepts in financial decision-making: knowledge of interest rates, inflation, and risk diversification.[13] A person is defined as financially literate when he or she correctly answers all three questions. These concepts are basic and this is what would correspond to a minimum standard, but despite their simplicity, answering correctly to these three questions has been linked to better financial management habits and better financial decisions overall (Lusardi and Mitchell, 2014).

Our results show low levels of financial literacy across the eight countries (Table 9). Overall, less than a third (30%) of respondents were able to answer all three questions correctly, consistent with previous international surveys, which documented how only one in three adults worldwide is financially literate (Klapper and Lusardi, 2020). Singapore (37%) and Germany (38%) have the highest literacy rates. On the other end of the spectrum, the countries with the lowest financial literacy rates are France and Australia, where only a quarter of respondents could be identified as financially literate. Financial literacy is even lower among Indonesian survey participants (14%).

[Insert Table 9 here]

Among the three topics that define financial literacy, inflation and numeracy (in the context of interest rate calculations) were the most understood, with 68% and 69% of correct answers, respectively. In contrast, risk diversification was the most challenging concept to grasp. Only 41% answered correctly, and almost half (47%) answered "Do not know" to this question, despite the fact that risk diversification is a fundamental aspect of investing decision-making. Moreover, we find large variations in financial literacy among demographic groups (Table 10). For example, 39% percent of men are financially literate, compared with 22% percent of women, denoting the presence of a large gender gap in financial knowledge. Women are also more likely to indicate that they "don't know" the answer, a consistent finding in international studies (Lusardi and Mitchell, 2014; Bucher-Koenen et al., 2021, Hasler and Lusardi, 2017).

[Insert Table 10 here]

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[13] The exact wording of these questions is available in the attached questionnaire.

Financial literacy sharply increases with educational attainment, income, and age. Twenty-two percent of respondents aged 23 to 34 are financially literate, compared with 37% of those aged 55 or older. This is especially troubling because, as mentioned in the previous sections, younger adults are the age group leading the sustainability transformation.

We can also see how financial literacy rates vary between investors and non-investors, and between ESG investors and other investors (Table 11). On the one hand, investors are considerably more financially literate than non-investors (47% vs 19%). On the other hand, ESG investors have somewhat lower financial literacy rates than other investors (41% vs 49%), probably because, as we mentioned earlier, young adults are leading the change toward sustainability but also have lower financial knowledge than other age groups.

[Insert Table 11 here]

Thus, low financial literacy appears to be one of the drivers of the lack of knowledge and expertise that many investors indicated as the primary barrier to ESG investing. Just as poor ESG literacy impairs investors' ability to evaluate ESG criteria, poor financial know-how can be costly for investors who want to do good with their investments but lack the basic knowledge for sound financial decision-making. Moreover, financial literacy and ESG literacy are strictly connected: the correlation between the two measures is positive and relevant (correlation coefficient of 0.235). Consequently, respondents with low financial literacy are also more likely to experience difficulties evaluating ESG criteria.

4.6 Investment decision-making and level of sophistication

In the last section of the questionnaire, we focused on investing behaviors and investors' sophistication. In particular, we were interested in understanding how investors make investment decisions, to what extent they are confident in their investment skills, and their literacy in investing concepts. This information can provide valuable insights into individuals' ability to make informed decisions around ESG products and balance the costs and benefits of sustainable investing.

We find that when it comes to receiving information about ESG investing, financial advisors play a central role: nearly a third of respondents (30%) indicated that financial

advisors are their most important source of ESG information, followed by Internet or social media (19%), government regulations and guidelines (16%), and family or close relatives (9%) (Table 12).[14]

[Insert Table 12 here]

However, investors usually make investment decisions without consulting a professional. When asked how they make investment decisions, 42% of investors indicated that they make decisions independently (Table 13). For comparison, less than 20% state that they discuss investment options with a professional before making investment decisions, and 14% fully delegate these decisions to a professional. Making decisions with complete autonomy is customary in all countries but is highest in Japan (64%) and Germany (47%).

[Insert Table 13 here]

The preference for independent decision-making also contrasts with the confidence level of many investors. Indeed, we find that confidence in investing skills is uneven among investors: just as 37% of investors would assess their investment skills as somewhat high to very high, an equal proportion of investors assess their investing knowledge as inadequate (Figure 8).

[Insert Figure 8 here]

To assess the actual level of investor sophistication, we asked investors four questions that have been used in previous research on investors: one question on the connection between investment risk and return, two questions on the difference between stocks and bonds, and one question on the role of the stock market.[15] We define an investor as "sophisticated" if he or she answered all four questions correctly. These four questions are basic: they can be considered as a minimum standard of sophistication needed to operate successfully in the investment markets.

We find that, overall, investors' sophistication is low. Only 22% of investors answered all investor literacy questions correctly, and one investor in three answered "don't know" to at least one question (Table 14).

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[14] Government regulations are especially popular in Singapore, where almost a third of investors reported that this is their primary source of information about ESGs.

[15] These four questions were taken from the 2018 NFCS Investor Survey (FINRA, 2019).

[Insert Table 14 here]

Singapore and the UK have the highest percentage of sophisticated investors (27%), while Japan, in contrast, is last in this area (8%). Looking at demographic characteristics, we find that investor sophistication follows the same patterns of financial literacy: it is higher among male investors, and it increases with age, income, and educational attainment (Table 15). Therefore, even among investors, we find that young adults, women, and investors with lower attainment are more vulnerable when making investing decisions.

[Insert Table 15 here]

5. Multivariate Analysis

In this section, we used multivariate analysis to address more in-depth questions—such as identifying the factors that are correlated with the three areas of knowledge, as well as the factors that influence preference for sustainable investing and ownership of ESG products.

5.1 The demographics of knowledge

We first ran a multivariate analysis to study how demographic characteristics are related to ESG literacy, financial literacy, and investor literacy (Table 16). For ESG literacy, we created a dummy variable equal to one if a respondent answered correctly to at least one ESG literacy question in each of the three areas of interest (environment, social, and corporate governance). For financial literacy, we created a dummy variable equal to one if a respondent answered all "Big 3" financial literacy questions correctly. Finally, for investor literacy, we created a dummy variable equal to one if a respondent correctly answered all four investor literacy questions.

Our estimation model is an Ordinary Least Squared (OLS) regression with binary dependent variables, and the variables' coefficients represent estimated marginal changes in probability. In addition to demographic controls, we included in the model country variables for each of the countries included in the survey and a control for

investment ownership.[16] The US variable was omitted; thus, it serves as the baseline on which the other countries' coefficients are calculated. After excluding Indonesian data and respondents with income missing values, the total sample on which we ran the regressions consists of 12,139 respondents.

[Insert Table 16 here]

The results confirm that demographics are a big differentiator when it comes to knowledge. The probability of being ESG literate, financially literate, or sophisticated in investing concepts increases with age, income, and educational attainment—as we saw in the descriptive results and as we expected. In particular, adults aged 23 to 34 are about 10pp less likely to be ESG literate compared to adults age 55 or older, and nearly 20pp less likely to be financially literate. Next, we find that the gender gap we highlighted in the univariate statistics section remains significant (and relevant) even when we control for other demographic factors. The gender gap in ESG literacy is small in magnitude: women are about 2pp less likely to be ESG literate than men. This is what we expected: women were less likely to provide the correct answer to the questions on corporate governance topics, but there was no (statistically relevant) difference regarding environmental or social topics. However, the gender gap becomes significantly larger when looking at financial literacy and investing sophistication. Women are 12pp less likely than men to answer the "Big 3" financial literacy questions correctly and 8pp less likely to be investing literate, even when we control for ownership of financial investments. This is consistent with previous studies on gender differences in financial knowledge, showing how women can be more disadvantaged when making complex financial and investing decisions.

ESG literacy and financial literacy also appear to be slightly lower among married and divorced adults compared to non-married adults (about -4pp), as is true for the employed vs the unemployed. In turn, investors are much more likely to be knowledgeable in these areas compared to respondents who do not have investment assets, particularly regarding financial literacy (+21pp). Finally, adults in the UK and Germany have the highest probability of being ESG literate, and Germany also leads in financial literacy

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[16] Country variables are used to capture country effects that are not explained by the variables included in the model.

(+10pp compared to American respondents). Adults in the US and Singapore, in turn, have the highest probability of being sophisticated investors.

5.2 The connection between ESG knowledge and financial literacy

One of the aspects that we wanted to explore further is the link between ESG knowledge and financial literacy. To assess the connection between the two, we ran new multivariate analyses similar to the previous ones, with the same demographic and country controls of the previous model, but this time we used "ESG literacy" as a dependent variable, with financial literacy and investing sophistication as explanatory variables. Results show that financial literacy and investing literacy are strongly correlated with ESG knowledge, even when demographics and country effects are included in the model (Table 17). Adults who correctly answered the three financial literacy questions (or the four investor sophistication questions) are about 20pp more likely to be ESG literate. The correlation is statistically significant even when we control for respondents' education, suggesting that the coefficients for financial literacy and investor literacy capture variation that goes above and beyond regular education. Moreover, the gender divide disappears once we include financial literacy in the regression. This suggests that the knowledge difference in financial literacy absorbs the gender gap in ESG literacy (as we discussed previously, women were less likely than men to provide correct answers to questions related to corporate governance).

[Insert Table 17 here]

5.3 Preferences toward sustainable finance and ESG investments

Next, we analyzed how preferences for sustainable investing change by demographics and how financial knowledge and ESG literacy play a role in shaping these preferences. We use answers to the five statements discussed in Section 4.1 as proxies for positive preferences toward sustainable finance. We created binary variables that equal one if the respondent agreed with each statement and zero otherwise.

The multivariate analysis shown in Table 18, again, validates the demographic insights from the univariate analysis. In particular, it confirms that young adults are at the forefront of the sustainable finance trend: respondents aged 23 to 34 are the age group with the

highest likelihood of agreeing with each statement about sustainable finance. For example, they are more likely to agree that they want to make a positive impact with their investments (+9pp), more likely to be bullish on the returns of ESG investments (+13pp), and more likely to agree with paying higher fees for ESG-only mutual funds (+18pp). Thus, this age group has the highest willingness to pay for sustainable products but the lowest financial literacy, the lowest ESG knowledge, and fewer resources to invest. This has implications for industry professionals who are interested in the segment of younger investors who have a preference for sustainable investing.

[Insert Table 18 here]

Next, we find that women are more likely than men to agree to make a positive impact with their investments, and they are more often willing to pay extra for responsible products (+5pp). However, the difference becomes not significant in relation to ESG investment returns, and women are less likely than men to be willing to pay higher fees for sustainable funds (-2pp). In general, we find that this is the case for other demographic groups as well (for example, adults in higher-income households): wanting to make a positive impact is not always associated with a higher probability of being willing to pay higher fees on ESG funds. Investing strategies that integrate ESG criteria while focusing on low fees and competitive investment performance will be more appealing opportunities for these segments of investors.

Further, we find, as we expected, that preferences for sustainable finance are higher among investors (+8-24pp), adults with higher educational attainment (+3-5pp), and employed adults (+3-4pp). We also confirm the country differences highlighted in section 4.1. Australia and Singapore have the strongest preference for ESG investing: Australians are about 10pp more likely to agree with each of the five statements, and Singaporeans are 8pp more likely to be willing to make a positive impact and 11pp more likely to agree that ESG products will bring higher returns. However, Singaporeans are not more likely to be willing to pay higher fees. On the other hand, Japanese respondents seem the least enthusiastic about sustainability, even though they are more likely to believe that ESG investments will bring higher returns.

We conclude the analysis by assessing how ESG literacy, financial literacy and investor sophistication influence preferences for sustainable investing. We run the same

multivariate regressions as in the previous model, and we include the measures for ESG knowledge, financial literacy, and investing sophistication. Even when we control for demographics, investment ownership, and country effects, ESG-literate adults are more likely to agree with wanting to make a positive impact (+2pp) and pay more for sustainable products (+8pp) (Table 19). However, the relationship with paying higher fees is not statistically significant. Similarly, there is a positive association between financial literacy and a preference for responsible investing, but the relationship turns negative when it comes to being willing to pay higher fees for ESG-only funds (-6pp). Also, financially literate respondents are slightly less likely to believe that sustainable investments will provide higher returns (-3pp).[17] Hence, new sustainable investing products will need to demonstrate to these investors not only that they are responsible for the environment and society but also that they are competitive from a financial performance point of view. Indeed, perceptions around financial performance can be a major barrier for investors (Nuveen, 2021).

[Insert Table 19 here]

Because knowledge is significantly related to preferences for responsible investing, we enquire further about how it contributes to shaping ownership of these investments.

5.4 Examining the factors that influence ESG investment ownership

We study the factors that influence ESG ownership by running new regressions where ownership of ESG investments is included as the dependent variable of interest. For this analysis, we restrict the sample to investors only (5,282 observations).

In Column 1 of Table 20, we report the results for a model that includes only the demographic variables, the country variables, and a variable for preference for sustainable investing. We find that this last variable is highly correlated with ownership of ESG products. Investors who want to make a positive impact with their investments are

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[17] We included both controls for financial literacy and ESG literacy in the same regressions because we were interested in describing the interplay between these two variables, but we might have inserted a degree of collinearity. Thus, we also ran the regressions while keeping the two explanatory variables separate. We find that the coefficients for both ESG literacy and financial literacy remain strongly correlated and significant.

20pp more likely to own ESGs, which confirms how investors' motivation plays an important role in shaping ownership of responsible investments (Riedl and Smeets, 2017; Bauer et al., 2021). Further, the results confirm the demographic insights from the univariate analysis. The likelihood of having ESG investments is higher among young investors (+9-16pp), investors with a college degree (+7pp), employed or married investors (+4-5pp), and investors who live in households with higher income (+3-4pp). We also find that men are more likely than women to hold ESG investments (+5pp), despite women's stronger preference for ESG investing. Regarding country effects, we confirm that Australia and Germany are at the forefront of the trend toward sustainable investing. Compared to the US, investors in these countries are 8 to 11pp more likely to own sustainable investments even when we control for demographic differences in the population.

[Insert Table 20 here]

Next, in Column (2), we add the variables for ESG literacy, financial literacy, and investing sophistication. We find that the relationship between ESG literacy and ESG investment ownership is not statistically significant—thus, there is no relevant difference (in this area) among investors. On the other hand, financial literacy has a negative relationship with ESG investment ownership, albeit small in magnitude: financially literate investors are 3pp less likely to own these products. This finding suggests that although financially literate investors have a stronger preference for sustainable investing (as shown in Section 5.3), they might be slower to translate this preference into actual ESG ownership, or they might be more sensitive to changes in financial performance. Indeed, in Table 19, we showed that financially literate respondents were 3pp less likely to think that ESG funds provide higher returns in the long run. These considerations may explain why we find that investors with higher financial literacy have lower ownership of these products at the moment in time when we collected the data.[18] These findings highlight the complex relationship between sustainability and economic performance, especially in the short term. Investors who want to do good with their investments need to make challenging

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[18] Indeed, in September 2022, ESG funds were seeing net outflows of investments due to deteriorating market conditions and the decline in value of tech titles, of which ESG portfolios are traditionally heavy. While we do not have information on whether investors sold these investments prior to the survey, it is possible that financially literate investors were more likely to reduce their investments in ESG portfolios given the uncertainty in financial markets.

financial and ethical decisions, especially at times of high uncertainty in financial markets. These decisions require a good understanding of investing concepts, a broad understanding of ESG criteria, and a willingness to express personal values with investing decisions. However, financial illiteracy and poor sophistication can make it harder for investors to address these complexities and choose investments that have a positive impact and preserve financial performance.

6. Discussion

In this study, we examined several factors that drive individuals' motivation for ESG investments, with particular attention to the interplay between individuals' understanding of the science behind ESG investment and individuals' financial literacy levels. The analysis has uncovered several findings that can assist stakeholders in the investing industry in establishing the conditions necessary for the wider adoption of ESG investments. It can also help policymakers identify policies that foster sustainable investing and improve investors' decision-making in the area of sustainable finance.

In particular, we uncovered nine main findings that have implications for the ESG investment industry:

1. Most respondents care about ESG investing and take ESG factors into account when making investing decisions. More than half of respondents agreed that they want to make a positive impact with their investments, and two-thirds indicated that environmental, social, or corporate governance factors are important when choosing companies to invest in. Over two respondents in five are willing to pay more for environmentally friendly and socially responsible products, and nearly one-third agreed that "ESG investments generate, on average, higher returns in the long run". In particular, Australia, Singapore, and Indonesia are the countries with the highest share of respondents with favorable ESG preferences, which is attributable (at least in part) to their younger populations.

2. Despite the popular interest in sustainable investing, actual adoption of ESG products is still limited in most countries, except Australia (41%) and Germany (35%), the countries with the highest proportion of ESG investors. On average, less than 30% of investors reported having investments in ESG funds and other

sustainable assets, suggesting that in most countries, ESG products have built a presence in the market, but there is still a large audience to reach.

3. Notably, almost two in five half investors do not know whether they have retirement or non-retirement investments in ESG funds. This finding is troubling, as it shows an evident lack of awareness among many respondents, who, in many ways, are interested in sustainable investments but ultimately do not seem to know the types of financial investments they are making. The lack of awareness is widespread among all demographic groups.

4. When we asked ESG investors what they feel is the primary barrier when investing in ESGs, lack of knowledge was the most frequent answer, followed by lack of transparency and expertise. Moreover, lack of knowledge was cited as the main obstacle by nearly a third of investors who indicated a preference for sustainable investing but did not own ESGs. This provides further evidence that poor knowledge plays a role in the widespread lack of awareness about respondents' investment sustainability profile. We asked respondents nine multiple-choice questions designed to measure respondents' knowledge of basic environmental and social responsibility topics and corporate governance concepts. Overall, only one respondent in three correctly answered at least one question in each of the three ESG areas (what we defined as "ESG literacy"). This shows that familiarity with ESG factors is lacking—especially regarding corporate governance criteria. In particular, Australia, Germany, and the UK have the highest ESG literacy rates (close to or above 40%) among the eight countries we surveyed.

5. Consistent with other international surveys, we also found low financial literacy levels across the eight countries. Less than a third of respondents were able to answer the "Big 3" financial literacy questions, which have become the standard for evaluating financial literacy levels worldwide. Singapore (37%) and Germany (38%) have the highest literacy rates, while France ranked last, with less than a quarter of financially literate respondents.

6. We found that when it comes to receiving information about ESG investing, financial advisors are the primary source of information (selected by 30% of investors), followed by the Internet or social media (19%) and government regulations and guidelines (16%). However, over 40% of investors reported preferring to make investment decisions without consulting a professional. This

preference for autonomous decision-making contrasts with investors' actual level of sophistication: only 22% of respondents were found to be investment literate, i.e. they were able to answer all four investor literacy questions correctly.

7. We looked at the connection between ESG and financial literacy. We found that both variables play a role in shaping preferences for ESG investment. For example, ESG literacy is associated with a 15pp higher likelihood of being willing to pay more for ESG products and a 9pp higher probability of agreeing with the statement "ESG investments provide, on average, higher returns in the long run". Financial literacy also contributes to these preferences, albeit to a minor degree (about +5pp). However, the relationship becomes not statistically significant when it comes to paying higher fees for ESG-only mutual funds.

8. We also found that investors who want to have a positive impact with their investments are about 8pp more likely to own ESG ownership than other investors. In addition, respondents who indicated that they were willing to pay higher fees for ESG-only mutual funds or agreed with the statement that ESG returns are much more likely to own these assets (+16pp and 20pp, respectively). This suggests that these statements capture a stronger and more defined preference for ESG investing.

9. Finally, we found a striking gender gap in financial literacy, consistent with previous research. Women are 12pp less likely than men to answer the "Big 3" financial literacy questions correctly, and they are also much more likely to answer "don't know" to these questions, even when we control for ownership of financial investments. We also find evidence of a gender gap in ESG literacy. However, it is much smaller in size compared to the financial literacy gap and becomes not statistically significant once we account for the difference in financial literacy.

These findings have implications for policymakers and industry professionals. The knowledge gap among many investors (and potential future investors) is alarming. In this context, most retail investors are ill-prepared to navigate the increased complexities of ESG investing. To fill in this gap, the investment industry should focus on simplifying information, removing jargon as much as possible, and providing clear and simple explanations of the benefits and drawbacks of ESG investing. Investors need clear, consistent information to help them develop a firm foundation on which to develop their

knowledge: retail investors are often unaware of the investments they are making, and forward-looking companies could win customers by finding better and more effective ways to communicate the winning aspects of ESG investing. This could drive more participation in ESG investing: a recent survey in the US found that over 70% of investors not currently participating in responsible investing would make more sustainable choices if the benefits of ESG were easier to see (Nuveen, 2021).

Moreover, we found that certain demographic groups, such as women and the young, are more at risk of making unsound investing decisions, given their lower financial literacy level. These groups are also most interested in sustainable investing, even when we control for other differences. Policymakers and industry professionals should set up solutions that help these more vulnerable segments of investors. Forward-looking industry leaders could find new ways to facilitate sound decision-making, including setting up financial education programs specifically designed for women and younger investors. Mixed courses on ESG investing and financial education could help attract clients not generally interested in investing. They could also help clients become more aware of their investment practices.

Finally, most people still state that they prefer to make investment decisions independently even though they have low investment sophistication. This indicates that financial advice might still be perceived as costly and untrustworthy, creating unequal opportunities among investors. Industry leaders could address this gap by providing more transparency, lowering costs, and finding more effective ways to strengthen client trust. This could pay off in the long term: surveys suggest that investors feel more loyal to an advisor who actively helps them invest in a way that has a more positive impact on the world (Nuveen, 2021).

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List of figures

Table 1. Demographics by country

	All	Australia	Singapore	Indonesia*	France	United States	Germany	UK	Japan
Age 23 - 34	26.7%	31.4%	29.0%	70.8%	25.6%	30.4%	24.3%	25.6%	20.5%
Age 35 - 54	32.8%	31.8%	38.0%	26.6%	33.5%	27.9%	32.5%	34.2%	32.4%
Age 55+	40.4%	36.8%	33.0%	2.6%	40.9%	41.7%	43.2%	40.2%	47.1%
Male	48.6%	49.1%	49.0%	55.0%	47.7%	48.7%	48.9%	48.5%	48.3%
Female	51.4%	50.9%	51.0%	45.0%	52.3%	51.3%	51.1%	51.5%	51.7%
Main ethnicity	77.1%	78.8%	75.0%	46.0%	-	63.1%	86.8%	83.3%	-
Minority	22.9%	21.2%	25.0%	54.0%	-	36.9%	13.2%	16.7%	-
Married or civil partnership	47.1%	45.0%	52.8%	46.5%	46.2%	45.3%	40.9%	42.5%	57.4%
Not married	40.3%	43.1%	39.8%	50.9%	39.7%	39.5%	41.2%	44.7%	34.2%
Divorced, separated, widowed	12.6%	11.9%	7.3%	2.6%	14.2%	15.2%	17.9%	12.7%	8.4%
Income: Bottom 50%	43.9%	46.8%	48.9%	28.5%	43.7%	43.2%	40.6%	39.9%	44.6%
Income: Middle 40%	33.2%	33.5%	32.4%	55.3%	33.3%	35.6%	33.2%	30.9%	33.2%
Income: Top 10%	7.5%	10.1%	5.6%	10.8%	7.9%	7.9%	9.3%	4.6%	7.0%
Don't know / Not say	15.4%	9.7%	13.1%	5.4%	15.0%	13.3%	16.8%	24.6%	15.2%
Has college degree	42.0%	45.7%	43.9%	52.9%	51.2%	28.8%	30.6%	44.9%	50.3%
No college degree	58.0%	54.3%	56.1%	47.1%	48.8%	71.2%	69.4%	55.1%	49.7%
Employed (full-time or part-time)	59.3%	64.6%	75.2%	74.7%	50.3%	47.0%	62.1%	59.5%	57.3%
Not employed	40.7%	35.4%	24.8%	25.3%	49.7%	53.0%	37.9%	40.5%	42.7%
N	14,374	2,013	2,008	2,002	2,060	2,215	2,019	2,056	2,003

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. Note: The Indonesian data is excluded from the calculation of full sample statistics (Column "All"). * Indonesian data is not representative of the full Indonesian population, but is representative of the population with internet access.

Table 2A. Ownership of financial investments

	All	Australia	Singapore	Indonesia*	France	United States	Germany	UK	Japan
% of investors:									
Has self-directed retirement investments	22.7%	34.8%	26.1%	42.1%	16.3%	28.8%	30.2%	14.6%	7.9%
Has non-retirement investments	33.1%	35.5%	49.2%	46.9%	22.6%	33.8%	32.1%	26.6%	32.1%
Has investments (any type)	40.3%	47.3%	55.4%	53.9%	29.6%	42.1%	41.9%	32.5%	33.6%
N	14,374	2,013	2,008	2,002	2,060	2,215	2,019	2,056	2,003

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. Note: The Indonesian data is excluded from the calculation of full sample statistics (Column "All"). *Indonesian data is not representative of the full Indonesian population, but is representative of the population with internet access.

Table 2B. Investors' demographics by country

	All	Australia	Singapore	Indonesia*	France	United States	Germany	UK	Japan
Age 23 - 34	27.2%	30.3%	30.3%	71.5%	26.4%	30.9%	27.6%	20.9%	19.2%
Age 35 - 54	33.3%	35.9%	38.8%	26.7%	32.4%	25.8%	34.2%	32.8%	31.1%
Age 55+	39.5%	33.8%	30.9%	1.8%	41.1%	43.3%	38.3%	46.3%	49.8%
Male	58.0%	60.4%	54.2%	55.3%	58.0%	54.3%	60.0%	60.6%	61.2%
Female	42.0%	39.6%	45.8%	44.7%	42.0%	45.7%	40.0%	39.4%	38.8%
Main ethnicity	79.4%	78.4%	81.3%	49.9%	-	68.2%	86.9%	84.0%	-
Minority	20.6%	21.6%	18.7%	50.1%	-	31.8%	13.1%	16.0%	-
Married or civil partnership	52.9%	53.4%	53.5%	49.8%	52.3%	54.8%	46.5%	47.8%	62.6%
Not married	37.5%	36.6%	40.6%	48.2%	36.1%	35.0%	40.7%	39.8%	31.7%
Divorced / sep. / widowed	9.6%	10.0%	5.9%	2.0%	11.6%	10.2%	12.8%	12.4%	5.7%
Income: Bottom 50%	34.2%	35.1%	41.8%	17.4%	32.2%	28.4%	26.7%	33.9%	39.5%
Income: Middle 40%	44.0%	44.7%	41.3%	63.3%	42.0%	49.4%	44.5%	42.9%	42.3%
Income: Top 10%	12.4%	14.3%	8.7%	16.5%	15.6%	13.6%	15.8%	7.2%	11.7%
Don't know / Not say	9.5%	5.9%	8.2%	2.9%	10.3%	8.6%	12.9%	16.0%	6.5%
Has college degree	54.7%	59.2%	56.0%	62.1%	62.8%	44.1%	43.3%	58.3%	64.4%
No college degree	45.3%	40.8%	44.0%	37.9%	37.2%	55.9%	56.7%	41.7%	35.6%
Employed (full-time or part-time)	68.8%	75.5%	80.7%	85.4%	55.5%	60.3%	74.2%	61.5%	63.1%
Not employed	31.2%	24.5%	19.3%	14.6%	44.5%	39.7%	25.8%	38.5%	36.9%
N	5,863	971	1,153	1,047	591	950	839	685	674

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted.
Note: The reference sample for this table is investors only. Moreover, the Indonesian data is excluded from the calculation of full sample statistics (Column "All").

Table 3. Attitudes toward sustainable investing – country data

	All	Australia	Singapore	Indonesia*	France	United States	Germany	UK	Japan
Want to make a positive impact with own investments	53.7%	66.2%	65.5%	80.4%	65.5%	52.8%	45.2%	46.3%	34.0%
Willing to pay more for environmentally or socially responsible products	43.2%	56.3%	42.6%	60.9%	39.7%	41.2%	42.6%	47.5%	32.5%
Paying higher fees for an ESG-only mutual fund is worth it	24.4%	36.7%	27.4%	49.2%	23.6%	25.1%	20.3%	21.2%	16.7%
ESG investments generate higher returns in the long run	29.6%	39.5%	39.2%	61.3%	27.7%	25.1%	23.7%	16.5%	36.0%
<ESG factor> is an important criterion for choosing equity investments:									
Environmental responsibility	45.9%	56.6%	46.0%	67.6%	49.8%	43.4%	42.3%	45.1%	38.2%
Social responsibility	51.2%	59.5%	51.2%	73.6%	56.2%	45.4%	47.5%	47.7%	51.7%
Good and responsible corporate governance	57.5%	66.1%	65.3%	78.7%	54.5%	52.6%	56.7%	55.9%	51.7%
% of respondents who agreed with at least one factor	66.0%	73.8%	70.3%	84.5%	67.4%	61.7%	64.9%	62.9%	61.2%
N	14,374	2,013	2,008	2,002	2,060	2,215	2,019	2,056	2,003

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted.
*The Indonesian data is excluded from the calculation of full sample statistics.

Figure 1. Difference in attitudes - investors vs non-investors
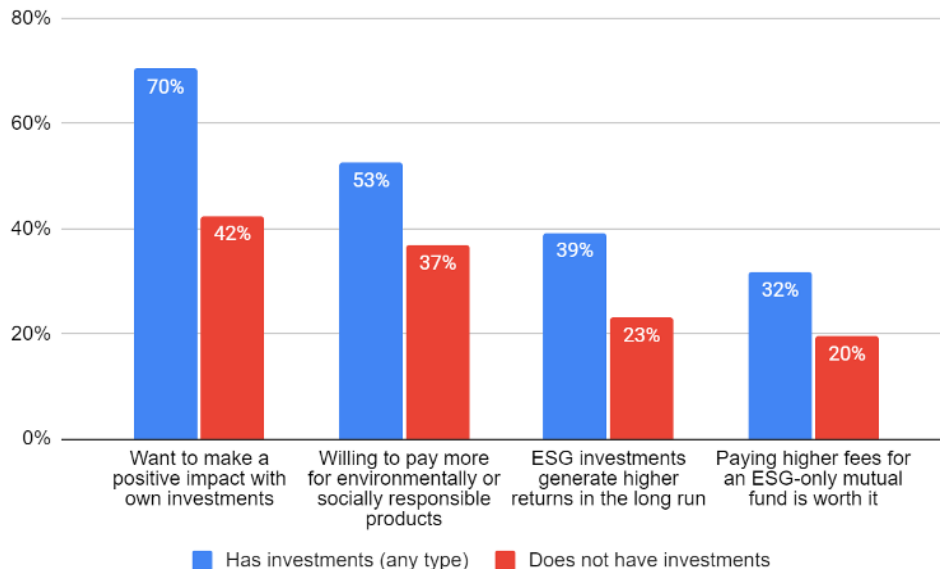
Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted.

Table 4. Attitudes toward sustainable investing – demographics

	All	Male	Female	23 - 34	35 - 54	55+	Bottom 50%	Middle 40%	Top 10%	No college degree	Has college degree
I want to make a positive impact with my investments	53.7%	55.1%	52.3%	61.4%	54.9%	47.5%	49.5%	61.4%	64.3%	47.5%	62.1%
I am willing to pay more for environmentally friendly or socially responsible products	43.2%	42.0%	44.4%	50.0%	41.5%	40.1%	38.9%	49.5%	56.7%	37.8%	50.7%
<ESG factor> is an important criterion for choosing equity investments:											
Environmental responsibility	45.9%	45.5%	46.3%	51.0%	44.5%	43.7%	44.7%	50.3%	52.8%	41.2%	52.4%
Social responsibility	51.2%	49.9%	52.5%	53.9%	50.2%	50.3%	50.2%	55.6%	58.5%	46.5%	57.8%
Good and responsible corporate governance	57.5%	58.7%	56.3%	56.7%	55.9%	59.2%	55.5%	63.4%	65.7%	52.3%	64.8%
ESG investments generate, on average, higher returns in the long run	29.6%	31.2%	28.0%	36.2%	31.1%	23.9%	29.1%	33.8%	36.0%	26.1%	34.4%
Paying higher fees for a mutual fund that contains only ESG investments is worth it	24.4%	26.3%	22.7%	34.5%	26.1%	16.4%	23.3%	29.0%	31.1%	20.5%	29.7%
N	14,374	6,782	7,592	3,250	4,917	6,207	6,254	4,862	1,089	8,192	6,135

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. *The Indonesian data is excluded from the calculation of full sample statistics.

Table 5. Ownership of ESG investments - country data

	All	Australia	Singapore	Indonesia*	France	United States	Germany	UK	Japan
Has retirement ESG investments	35.9%	46.9%	34.2%	47.6%	33.2%	29.5%	34.5%	27.4%	46.0%
don't know	28.8%	28.0%	28.4%	26.6%	32.5%	32.9%	20.9%	44.6%	10.2%
N	3,291	715	529	812	327	655	608	303	154
Has non-retirement ESG investments	27.7%	42.3%	23.2%	44.6%	29.8%	23.1%	35.9%	19.5%	21.0%
don't know	33.9%	30.5%	40.3%	29.4%	34.4%	38.0%	28.7%	42.7%	27.4%
N	5,725	725	1,033	899	446	764	647	565	646
Has ESG investments (any type)	29.1%	41.2%	25.8%	47.7%	29.4%	26.5%	35.0%	20.7%	21.5%
At least one don't know	38%	36.5%	41.9%	33.8%	38.0%	41.6%	30.0%	49.0%	27.8%
N	5,863	971	1,153	1,047	591	950	839	685	674

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. *The Indonesian data is excluded from the calculation of full sample statistics.

Figure 2. ESG attitudes and investment ownership
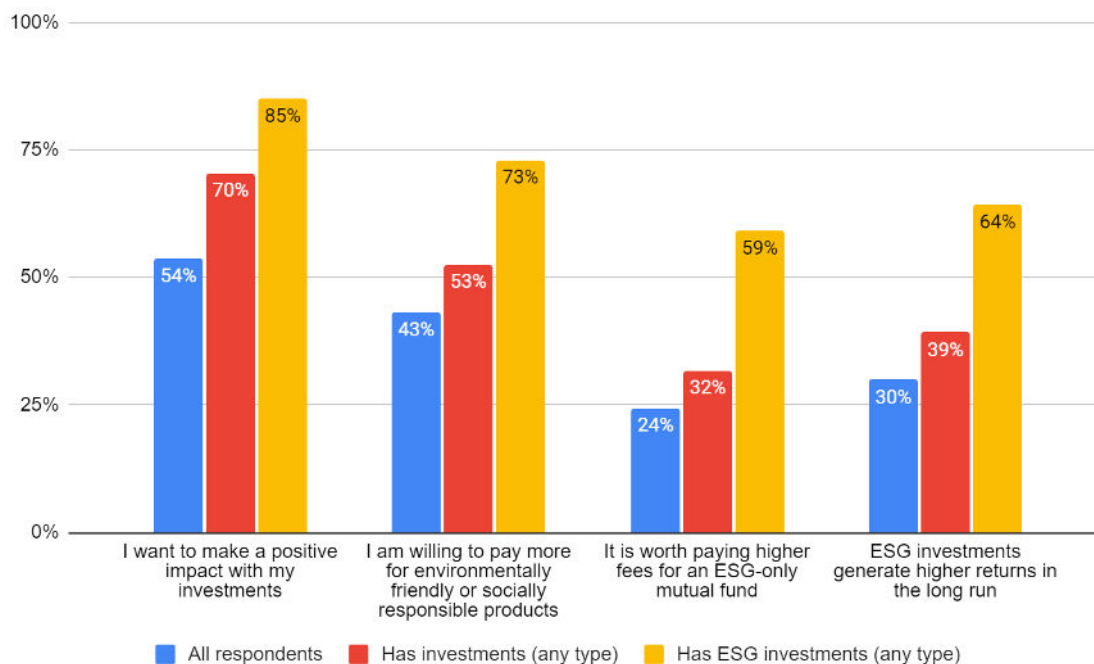
Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted.

Figure 3. ESG ownership and lack of awareness, by demographics
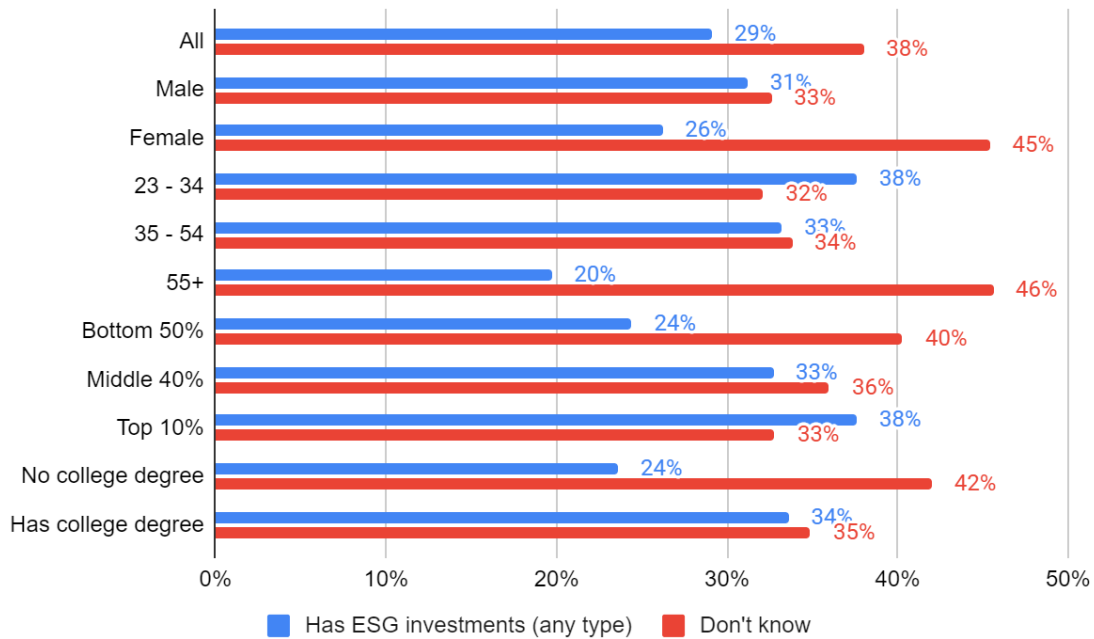
Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted.

Figure 4. Barriers to sustainable investing - by ownership of ESG products
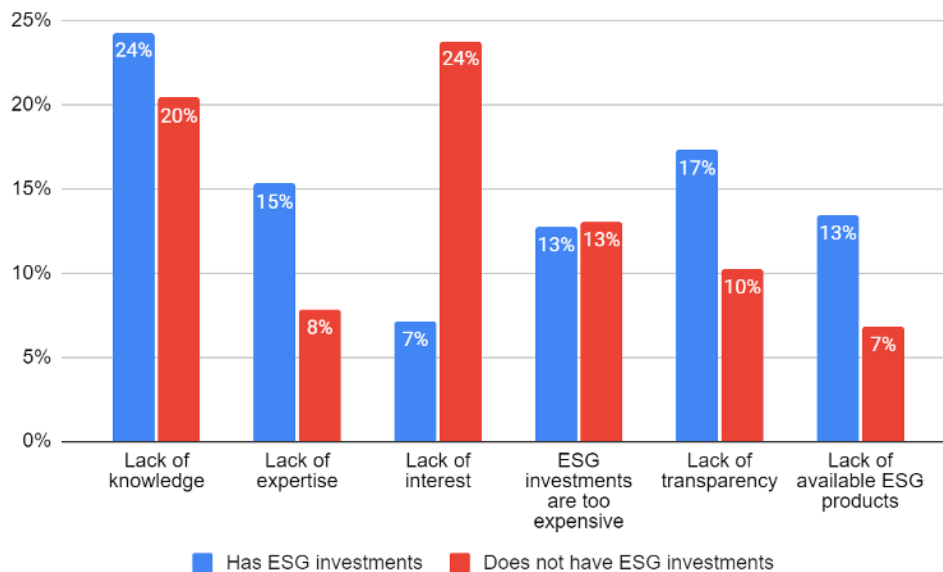
Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. Note: ESG owners were asked to indicate the main barrier to ESG investing. Instead, those who do not own ESGs were asked about the main reason why they do not have investments in ESG.

Figure 5. Reasons for not having ESGs by attitude toward sustainable investing

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. Note: In this figure, we only look at investors who indicated that they do not own ESG products. The question asked: "What is the main reason why you do not own ESG investments?"

Table 6. Barriers to ESGs by demographics

|	All	Male	Female	23 - 34	35 - 54	55+	Bottom 50%	Middle 40%	Top 10%	No college degree	Has college degree
Lack of knowledge	23.4%	19.6%	30.2%	24.4%	22.2%	23.8%	25.0%	22.7%	23.9%	24.4%	23.0%
Lack of expertise	13.5%	13.8%	13.0%	16.0%	15.2%	9.0%	16.8%	13.9%	7.9%	13.5%	13.6%
Lack of interest	11.0%	12.5%	8.2%	11.2%	10.8%	11.0%	9.2%	11.3%	9.8%	11.8%	10.5%
ESG investments are too expensive	12.8%	13.5%	11.6%	13.2%	13.9%	11.1%	12.0%	14.2%	12.1%	11.9%	13.2%
Lack of transparency	15.6%	16.6%	13.9%	16.8%	15.2%	14.9%	13.9%	15.9%	19.0%	13.6%	16.7%
Lack of available ESG products	11.9%	12.0%	11.7%	11.0%	11.7%	12.9%	11.2%	12.4%	12.7%	12.3%	11.7%
Other	4.8%	5.4%	3.6%	2.4%	3.8%	8.4%	5.1%	3.1%	8.3%	4.3%	5.0%
Don't know or Not say	7.0%	6.6%	7.9%	5.0%	7.2%	8.9%	6.9%	6.5%	6.3%	8.3%	6.4%
N	2,194	1,379	815	627	853	714	607	1,095	359	786	1,400

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. The Indonesian data is excluded from the calculation of full sample statistics. Note: Barriers have been combined by joining responses from both groups of investors (those who have ESG investments and those who do not).

Table 7. ESG literacy - country data

	All	Australia	Singapore	Indonesia*	France	US	Germany	UK	Japan
Questions on environment topics:									
Greenhouse gases	36.5%	45.7%	37.0%	35.6%	36.1%	28.8%	39.9%	38.4%	30.4%
Food waste	16.1%	21.7%	15.1%	5.4%	15.0%	16.5%	15.0%	16.9%	12.5%
Threat to wildlife	64.4%	70.3%	62.4%	51.8%	45.4%	61.9%	77.9%	81.6%	51.4%
At least one correct answer	75.7%	82.6%	74.7%	68.5%	65.0%	72.0%	84.8%	86.4%	65.0%
At least one don't know	31.4%	26.8%	25.9%	15.0%	27.4%	39.5%	30.8%	30.3%	38.1%
All correct	5.7%	9.5%	5.4%	1.3%	4.0%	4.8%	6.6%	7.1%	2.7%
Questions on social justice topics:									
Extreme poverty	16.3%	14.6%	19.4%	18.3%	19.2%	13.8%	18.3%	15.6%	13.3%
Gender pay gap	46.9%	51.0%	46.7%	39.0%	51.5%	41.9%	44.8%	50.6%	42.4%
Malnutrition	12.2%	16.0%	5.3%	2.6%	6.8%	9.7%	13.0%	23.1%	11.9%
At least one correct answer	58.9%	64.1%	57.2%	49.2%	61.6%	52.9%	58.4%	65.6%	53.1%
At least one don't know	31.7%	27.1%	29.6%	25.9%	26.0%	33.7%	31.3%	29.9%	44.4%
All correct	1.4%	1.0%	0.8%	0.1%	0.9%	1.3%	1.6%	2.8%	1.1%
Questions on responsible corporate governance topics:									
Goal of CPG policy	16.8%	16.9%	25.6%	17.1%	12.5%	12.4%	14.1%	14.0%	23.0%
CPG players	37.7%	38.0%	42.3%	53.0%	38.8%	36.1%	53.1%	40.6%	14.9%
Conflict of interest	29.2%	31.3%	28.6%	15.9%	26.5%	27.6%	27.1%	37.5%	25.5%
At least one correct answer	58.3%	60.3%	63.9%	64.4%	57.8%	54.1%	66.4%	62.6%	43.2%
At least one don't know	41.5%	35.6%	32.1%	22.5%	39.7%	43.4%	38.2%	43.6%	58.1%
All correct	3.2%	3.4%	5.4%	2.3%	1.6%	2.4%	3.1%	3.5%	3.4%
ESG literacy indicator	34.2%	38.6%	34.7%	25.5%	30.2%	29.3%	40.8%	43.3%	22.9%
N	14,374	2,013	2,008	2,002	2,060	2,215	2,019	2,056	2,003

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. *The Indonesian data is excluded from the calculation of full sample statistics.
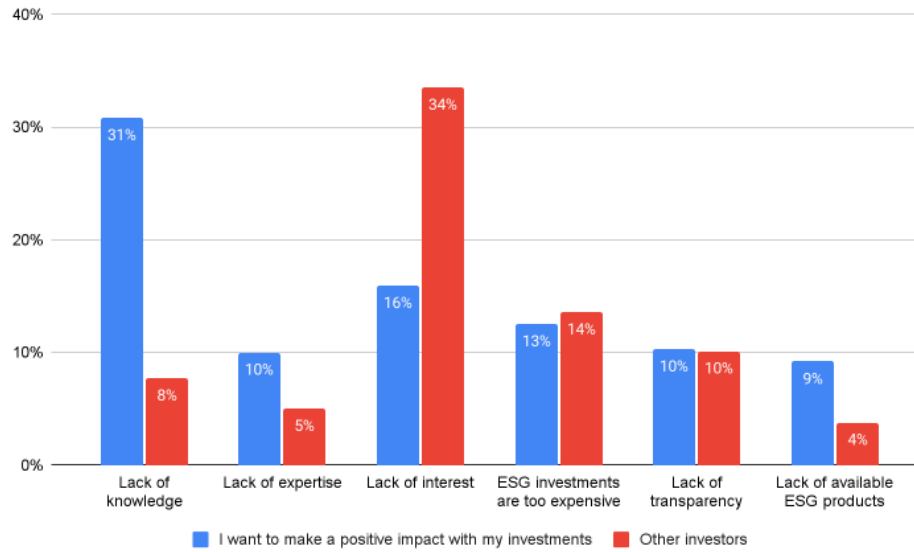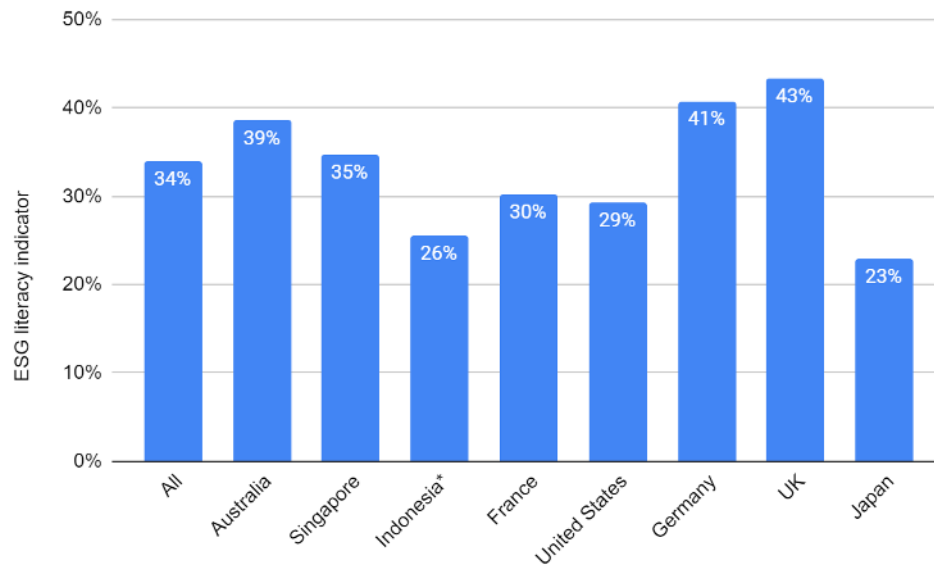
Figure 6. ESG literacy by country

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted.

Table 8. ESG literacy by demographics

	All	Male	Female	23 - 34	35 - 54	55+	Bottom 50%	Middle 40%	Top 10%	No college degree	Has college degree
Environmental topics:											
Greenhouse gases	36.5%	43.9%	29.5%	30.6%	32.5%	43.7%	33.8%	41.8%	46.2%	31.9%	43.1%
Food waste	16.1%	16.4%	15.9%	18.9%	16.6%	13.8%	15.1%	18.1%	21.4%	13.8%	19.2%
Threat to wildlife	64.4%	64.4%	64.3%	55.6%	60.8%	73.0%	61.9%	68.2%	69.1%	62.2%	67.7%
At least one correct answer	75.7%	78.4%	73.2%	69.0%	72.2%	83.1%	73.7%	80.5%	80.8%	72.5%	80.5%
At least one don't know	31.4%	26.2%	36.3%	28.1%	32.3%	32.7%	33.2%	24.5%	23.3%	36.5%	24.4%
All correct	5.7%	6.7%	4.8%	5.8%	5.4%	5.9%	4.7%	7.0%	9.6%	4.4%	7.6%
Social justice topics:											
Extreme poverty	16.3%	17.9%	14.8%	19.4%	16.3%	14.2%	15.2%	18.9%	19.9%	14.9%	18.3%
Gender pay gap	46.9%	45.9%	47.9%	46.1%	45.1%	49.1%	45.6%	52.0%	53.3%	43.4%	51.9%
Malnutrition	12.2%	13.0%	11.5%	12.7%	11.3%	12.7%	10.7%	14.3%	17.4%	9.8%	15.5%
At least one correct answer	58.9%	58.8%	59.0%	59.5%	56.9%	60.2%	57.4%	65.1%	67.2%	54.5%	64.9%
At least one don't know	31.7%	30.6%	32.7%	28.6%	31.5%	33.9%	31.5%	26.1%	23.1%	35.8%	26.1%
All correct	1.4%	1.8%	1.0%	2.0%	1.3%	1.0%	1.0%	1.8%	2.3%	0.9%	2.0%
Corporate gov. topics:											
Goal of CPG policy	16.8%	18.5%	15.3%	18.6%	17.5%	15.1%	16.4%	19.2%	23.1%	13.9%	20.9%
CPG players	37.7%	41.0%	34.5%	35.7%	37.5%	39.1%	34.8%	42.1%	49.4%	34.1%	42.8%
Conflict of interest	29.2%	30.3%	28.0%	23.5%	27.4%	34.3%	27.7%	32.3%	37.7%	25.1%	34.8%
At least one correct answer	58.3%	62.2%	54.7%	54.6%	57.6%	61.3%	55.8%	64.4%	70.6%	53.1%	65.7%
At least one don't know	41.5%	33.8%	48.9%	41.8%	42.9%	40.2%	42.7%	34.7%	29.8%	47.1%	33.9%
All correct	3.2%	3.7%	2.8%	3.3%	3.0%	3.4%	2.7%	3.7%	6.8%	2.2%	4.8%
ESG literacy indicator	34.2%	36.6%	31.9%	31.6%	31.8%	37.8%	31.5%	39.4%	45.2%	29.1%	41.4%
N	14,374	6,782	7,592	3,250	4,917	6,207	6,254	4,862	1,089	8,192	6,135

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. The Indonesian data is excluded from the calculation of full sample statistics.
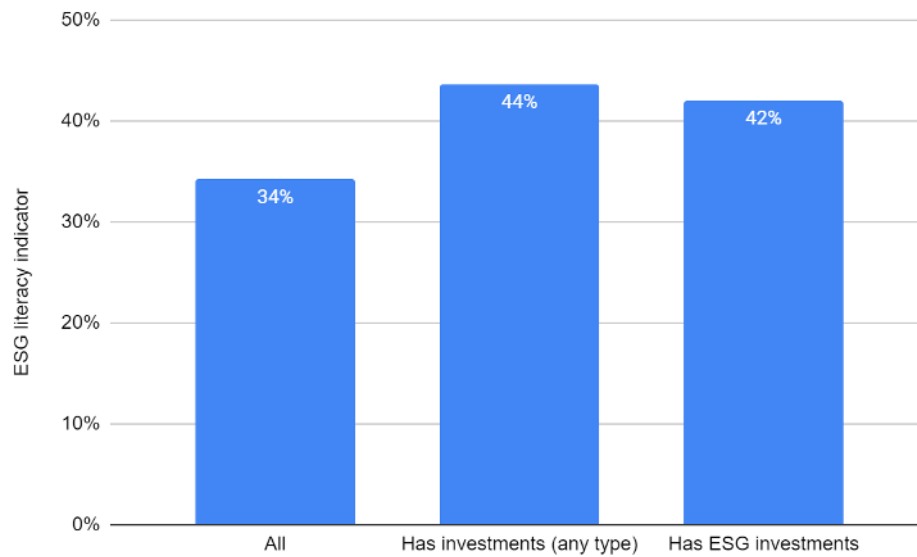
Figure 7. ESG literacy among all investors vs ESG investors

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted.

Table 9. Financial literacy - country data

	All	Australia	Singapore	Indonesia*	France	United States	Germany	UK	Japan
Numeracy (Interest rate calculation)	69.1%	70.7%	76.5%	65.6%	67.9%	62.9%	67.4%	77.7%	61.0%
don't know	13.4%	9.5%	6.4%	10.4%	13.3%	15.9%	13.3%	11.5%	23.6%
Inflation	67.6%	64.7%	73.8%	48.2%	68.2%	60.2%	73.5%	75.1%	58.1%
don't know	15.9%	13.1%	9.9%	13.9%	13.3%	19.5%	12.1%	14.7%	28.5%
Risk diversification	41.3%	34.2%	47.6%	25.8%	34.5%	41.7%	52.8%	31.1%	47.4%
don't know	47.5%	49.5%	40.5%	39.1%	53.4%	45.2%	36.4%	63.4%	44.1%
All big 3 correct	30.2%	25.2%	37.5%	14.3%	23.5%	27.9%	38.5%	26.3%	32.8%
At least one don't know	52.4%	52.4%	43.2%	44.5%	58.8%	51.4%	41.9%	65.8%	52.7%
N	14,374	2,013	2,008	2,002	2,060	2,215	2,019	2,056	2,003

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. *The Indonesian data is excluded from the calculation of full sample statistics.

Table. 10. Financial literacy by demographics

	All	Male	Female	18 - 34	35 - 54	55+	Bottom 50%	Middle 40%	Top 10%	No college degree	Has college degree
Numeracy (Interest rate calculation)	69.1%	73.7%	64.7%	61.0%	67.1%	76.1%	65.7%	75.1%	80.6%	64.4%	75.8%
don't know	13.4%	9.7%	16.8%	16.8%	14.0%	10.7%	14.7%	8.5%	6.1%	16.5%	9.0%
Inflation	67.6%	73.0%	62.5%	54.8%	62.5%	80.2%	65.0%	72.7%	78.2%	62.9%	74.4%
don't know	15.9%	10.0%	21.5%	19.0%	18.8%	11.5%	17.0%	11.2%	7.6%	20.0%	10.3%
Risk diversification	41.3%	49.4%	33.6%	36.9%	39.8%	45.3%	36.8%	49.0%	57.2%	34.7%	50.2%
don't know	47.5%	37.5%	57.0%	47.3%	47.7%	47.5%	52.4%	39.2%	30.7%	54.5%	38.2%
All big 3 correct	30.2%	38.6%	22.2%	22.4%	28.4%	36.7%	24.6%	37.6%	48.2%	23.1%	40.0%
At least one don't know	52.4%	41.4%	62.7%	54.5%	52.6%	50.8%	57.7%	43.5%	34.0%	59.9%	42.3%
N	14,374	6,782	7,592	3,250	4,917	6,207	6,254	4,862	1,089	8,192	6,135

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. The Indonesian data is excluded from the calculation of full sample statistics.

Table 11. Financial literacy by type of investment

	Has investments any type		Has ESG investments any type	
	Yes	No	Yes	No
% of financially literate respondents	46.7%	19.0%	40.8%	49.2%
N	5,863	8,511	1,669	4,194

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted.
Note: differences between are statistically significant at p<.001

Table 12. Most important sources of information regarding ESG investment

	All	Australia	Singapore	Indonesia*	France	United States	Germany	UK	Japan
My financial advisor	30.2%	31.7%	21.1%	14.3%	42.0%	40.3%	28.3%	36.1%	14.0%
Internet or social media	18.6%	15.2%	17.4%	32.0%	11.8%	11.5%	25.3%	15.6%	37.9%
Government regulations and guidelines	16.1%	18.1%	32.4%	14.5%	9.5%	10.8%	7.6%	14.8%	9.4%
Family/ close relatives	9.2%	9.3%	8.6%	16.1%	11.7%	12.1%	7.8%	7.2%	6.8%
Newspapers and magazines	8.8%	6.9%	6.7%	3.6%	7.4%	5.7%	11.2%	8.2%	19.3%
Other financial providers	6.7%	7.2%	5.7%	5.8%	5.1%	7.9%	7.4%	10.3%	3.2%
Friends	4.6%	4.6%	4.4%	6.4%	5.7%	5.4%	5.9%	3.0%	2.1%
TV or radio	3.5%	3.6%	2.1%	2.3%	3.2%	4.1%	4.0%	1.8%	6.3%
Colleagues	2.4%	3.4%	1.6%	5.1%	3.6%	2.3%	2.4%	2.9%	1.0%
N	5,256	911	1,088	1,009	558	833	705	589	572

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. Note: The question asked investors to rank the 5 most important sources. In the table, we report how many times each source was ranked first. Reference sample: Investors only. *The Indonesian data is excluded from the calculation of full sample statistics.

Table 13. Statement that best describes investment decision making

	All	Australia	Singapore	Indonesia*	France	US	Germany	UK	Japan
I make the decisions myself	42.4%	39.4%	41.4%	35.3%	31.8%	32.8%	46.6%	39.7%	64.0%
I discuss investment options with a professional, then make the decisions myself	17.8%	17.9%	18.6%	20.3%	26.7%	19.5%	21.2%	13.2%	8.6%
I let a professional choose investments for me	13.9%	11.0%	11.0%	5.3%	20.8%	21.1%	9.7%	20.9%	6.2%
I use a mobile app	9.9%	13.4%	12.7%	20.8%	5.5%	9.6%	7.7%	9.1%	7.9%
I use a web-based, online tool	7.5%	8.4%	7.1%	13.9%	8.3%	8.0%	5.3%	7.4%	8.3%
I make the decision in other ways	5.5%	8.3%	6.5%	3.3%	3.6%	6.2%	5.4%	4.6%	2.3%
Don't know	1.9%	1.3%	1.5%	0.4%	2.6%	1.3%	1.9%	3.9%	1.5%
N	4,826	725	1,033	899	446	764	647	565	646

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. Note: Reference sample is investors only. *The Indonesian data is excluded from the calculation of full sample statistics.

Figure 8. Self-assessed investing knowledge

"On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall knowledge about investing?"
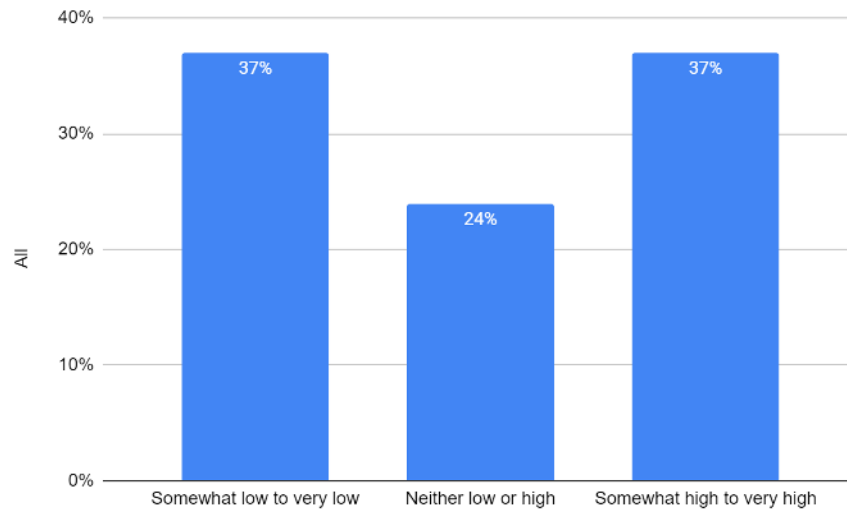
Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. Reference sample: Investors only.

Table 14. Investor sophistication - country data

	All	Australia	Singapore	Indonesia	France	United States	Germany	UK	Japan
Risk-return	62.3%	71.0%	71.8%	83.6%	67.9%	63.8%	56.5%	67.9%	28.7%
don't know	15.4%	9.1%	10.0%	6.2%	13.4%	15.9%	18.1%	14.3%	31.6%
Company's stock	55.8%	58.1%	56.5%	47.3%	52.2%	58.2%	60.1%	55.1%	46.7%
don't know	8.4%	5.6%	6.4%	3.9%	8.8%	7.9%	9.2%	11.7%	12.2%
Company's bond	50.5%	39.9%	61.1%	43.3%	39.2%	49.8%	51.8%	51.1%	57.2%
don't know	19.7%	23.0%	14.5%	12.1%	23.0%	19.0%	17.2%	29.8%	14.7%
Role of the stock market	65.9%	66.1%	63.9%	65.3%	62.7%	62.2%	63.3%	75.6%	70.4%
don't know	9.5%	5.9%	9.5%	4.2%	10.2%	10.0%	11.6%	11.0%	9.1%
All correct (Investor sophistication)	21.6%	18.5%	27.1%	19.8%	19.2%	23.6%	24.4%	26.0%	8.0%
At least one don't know	32.3%	29.2%	24.9%	18.5%	35.3%	30.7%	32.5%	40.9%	39.8%
N	5,863	971	1,153	1,047	591	950	839	685	674

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. *The Indonesian data is excluded from the calculation of full sample statistics. Note: The reference sample is investors only.

Table 15. Investor sophistication by demographics

	All	Male	Female	18 - 34	35 - 54	55+	Bottom 50%	Middle 40%	Top 10%	No college degree	Has college degree
Risk-return	62.3%	68.2%	62.2%	67.7%	66.4%	62.9%	58.6%	69.7%	72.3%	62.7%	68.0%
don't know	15.4%	11.6%	17.1%	11.8%	14.1%	15.9%	16.6%	12.1%	9.7%	15.9%	12.4%
Company's stock	55.8%	59.0%	48.3%	51.9%	53.2%	58.3%	49.4%	54.5%	66.9%	49.7%	58.1%
don't know	8.4%	5.5%	10.7%	6.9%	8.2%	8.1%	9.1%	6.3%	4.2%	10.1%	6.0%
Company's bond	50.5%	53.8%	43.4%	42.9%	47.1%	58.2%	45.3%	49.5%	59.9%	42.3%	55.0%
don't know	19.7%	13.3%	25.5%	17.0%	19.0%	19.6%	19.4%	17.0%	13.4%	22.3%	15.7%
Role of the stock market	65.9%	68.9%	61.5%	58.2%	63.5%	75.7%	61.4%	67.0%	73.2%	60.2%	70.2%
don't know	9.5%	5.8%	12.6%	8.4%	9.6%	8.0%	10.0%	7.5%	4.5%	12.2%	6.0%
All correct (Investor sophistication)	21.6%	25.5%	15.5%	19.1%	19.9%	24.8%	17.0%	21.8%	30.7%	16.6%	24.9%
At least one don't know	32.3%	23.6%	39.1%	27.0%	31.2%	32.3%	33.3%	27.5%	21.7%	35.9%	25.8%
N	5,863	3,860	3,050	2,134	2,304	2,472	2,142	3,281	906	2,952	3,938

Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey. All statistics are weighted. The Indonesian data is excluded from the calculation of full sample statistics.

Table 16. Demographics of ESG literacy, financial literacy, and investor literacy

VARIABLES	(1) ESG literacy indicator	(2) Big 3 finlit questions correct	(3) All investor literacy questions correct
Female	-0.010	-0.117***	-0.077***
	(0.009)	(0.008)	(0.006)
Age 23-34	-0.096***	-0.172***	-0.074***
	(0.013)	(0.012)	(0.009)
Age 35-54	-0.083***	-0.110***	-0.056***
	(0.011)	(0.010)	(0.008)
Middle 40% income	0.056***	0.070***	0.029***
	(0.010)	(0.009)	(0.007)
Top 10% income	0.083***	0.137***	0.087***
	(0.017)	(0.015)	(0.012)
College degree	0.096***	0.119***	0.065***
	(0.009)	(0.009)	(0.007)
Married	-0.042***	-0.056***	-0.034***
	(0.010)	(0.009)	(0.007)
Divorced, sep. or widowed	-0.042***	-0.032**	-0.034***
	(0.015)	(0.013)	(0.010)
Employed	-0.032***	-0.027***	-0.010
	(0.010)	(0.009)	(0.007)
Has investments	0.107***	0.207***	0.104***
	(0.009)	(0.009)	(0.007)
UK	0.163***	-0.010	0.001
	(0.016)	(0.015)	(0.011)
Australia	0.083***	-0.066***	-0.031***
	(0.016)	(0.014)	(0.011)
France	0.005	-0.047***	-0.041***
	(0.016)	(0.014)	(0.011)
Germany	0.130***	0.105***	-0.003
	(0.016)	(0.015)	(0.011)
Japan	-0.067***	0.049***	-0.112***
	(0.016)	(0.015)	(0.011)
Singapore	0.061***	0.084***	0.042***
	(0.016)	(0.015)	(0.011)
Constant	0.297***	0.314***	0.167***
	(0.016)	(0.014)	(0.011)
Observations	12,139	12,139	12,139
R-squared	0.063	0.154	0.092

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Baseline: male, age 55 or older, income group is "bottom 50%", no college degree, not married, not employed, country: US. Indonesian respondents were excluded from the multivariate analysis. We also dropped observations where income information was missing or equal to don't know/prefer not to say. Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey.

Table 17. Connection between ESG literacy and fin literacy

VARIABLES	(1) ESG literacy indicator	(2) ESG literacy indicator
Big 3 finlit questions correct	0.204*** (0.010)	
All investor literacy questions correct		0.186*** (0.013)
Female	0.014 (0.009)	0.004 (0.009)
Age 23-34	-0.061*** (0.013)	-0.082*** (0.013)
Age 35-54	-0.061*** (0.011)	-0.073*** (0.011)
Middle 40% income	0.041*** (0.010)	0.050*** (0.010)
Top 10% income	0.055*** (0.016)	0.067*** (0.017)
College degree	0.072*** (0.009)	0.084*** (0.009)
Married	-0.031*** (0.010)	-0.036*** (0.010)
Divorced, sep. or widowed	-0.036** (0.014)	-0.036** (0.014)
Employed	-0.027*** (0.010)	-0.030*** (0.010)
UK	0.165*** (0.016)	0.162*** (0.016)
Australia	0.097*** (0.015)	0.089*** (0.015)
France	0.014 (0.015)	0.012 (0.015)
Germany	0.109*** (0.015)	0.131*** (0.016)
Japan	-0.077*** (0.016)	-0.047*** (0.016)
Singapore	0.044*** (0.016)	0.054*** (0.016)
Has investments	0.064*** (0.009)	0.087*** (0.009)
Constant	0.233*** (0.016)	0.266*** (0.016)
Observations	12,139	12,139
R-squared	0.097	0.079

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Baseline: male, age 55 or older, income group is "bottom 50%", no college degree, not married, not employed, country: US. Indonesian respondents were excluded from the multivariate analysis. We also dropped observations where income information was missing or equal to don't know/prefer not to say. Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey.

Table 18. Demographics of preferences for ESG

VARIABLES	(1) Want to make a positive impact with investments	(2) Willing to pay more for sustainable products	(3) ESG investments provide higher returns	(4) Willing to pay higher fees for ESG-friendly funds
Female	0.017**	0.054***	-0.006	-0.021***
	(0.009)	(0.009)	(0.008)	(0.008)
Age 23-34	0.086***	0.062***	0.131***	0.181***
	(0.013)	(0.013)	(0.012)	(0.012)
Age 35-54	0.032***	-0.014	0.060***	0.087***
	(0.011)	(0.011)	(0.010)	(0.010)
Middle 40% income	0.041***	0.064***	-0.004	0.010
	(0.010)	(0.010)	(0.009)	(0.009)
Top 10% income	0.022	0.101***	-0.017	0.001
	(0.016)	(0.017)	(0.016)	(0.015)
College degree	0.054***	0.069***	0.021**	0.047***
	(0.009)	(0.010)	(0.009)	(0.008)
Married	0.012	0.012	0.047***	0.032***
	(0.010)	(0.011)	(0.010)	(0.009)
Divorced, sep. or widowed	0.006	-0.009	0.018	0.017
	(0.014)	(0.015)	(0.014)	(0.013)
Employed	0.045***	0.025**	0.036***	0.027***
	(0.010)	(0.010)	(0.010)	(0.009)
Has investments	0.236***	0.115***	0.133***	0.083***
	(0.009)	(0.010)	(0.009)	(0.008)
UK	-0.035**	0.072***	-0.082***	-0.023
	(0.016)	(0.017)	(0.015)	(0.015)
Australia	0.104***	0.134***	0.136***	0.108***
	(0.015)	(0.016)	(0.015)	(0.014)
France	0.147***	-0.022	0.036**	-0.010
	(0.015)	(0.016)	(0.015)	(0.014)
Germany	-0.074***	0.027	-0.011	-0.039***
	(0.016)	(0.016)	(0.015)	(0.014)
Japan	-0.174***	-0.078***	0.126***	-0.077***
	(0.016)	(0.016)	(0.015)	(0.014)
Singapore	0.083***	-0.022	0.106***	-0.012
	(0.016)	(0.016)	(0.015)	(0.014)
Constant	0.326***	0.255***	0.106***	0.105***
	(0.015)	(0.016)	(0.015)	(0.014)
Observations	12,139	12,139	12,139	12,139
R-squared	0.136	0.062	0.075	0.069

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Baseline: male, age 55 or older, income group is "bottom 50%", no college degree, not married, not employed, country: US. Indonesian respondents were excluded from the multivariate analysis. We also dropped observations where income information was missing or equal to don't know/prefer not to say. Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey.

VARIABLES	(1) Want to make a positive impact with investments	(2) Willing to pay more for sustainable products	(3) ESG investments provide higher returns	(4) Willing to pay higher fees for ESG-friendly funds
ESG literacy indicator	0.022**	0.077***	-0.016*	0.003
	(0.009)	(0.010)	(0.009)	(0.008)
Big 3 finlit questions correct	0.054***	0.017*	-0.026***	-0.057***
	(0.010)	(0.010)	(0.010)	(0.009)
Female	0.024***	0.057***	-0.009	-0.027***
	(0.009)	(0.009)	(0.008)	(0.008)
Age 23-34	0.098***	0.072***	0.125***	0.172***
	(0.013)	(0.013)	(0.012)	(0.012)
Age 35-54	0.039***	-0.005	0.056***	0.081***
	(0.011)	(0.011)	(0.010)	(0.010)
Middle 40% income	0.036***	0.059***	-0.001	0.014
	(0.010)	(0.010)	(0.010)	(0.009)
Top 10% income	0.013	0.092***	-0.013	0.008
	(0.017)	(0.017)	(0.016)	(0.015)
College degree	0.046***	0.059***	0.025***	0.053***
	(0.009)	(0.010)	(0.009)	(0.008)
Married	0.016	0.016	0.045***	0.029***
	(0.010)	(0.011)	(0.010)	(0.009)
Divorced, sep. or widowed	0.008	-0.005	0.016	0.016
	(0.014)	(0.015)	(0.014)	(0.013)
Employed	0.047***	0.028***	0.035***	0.026***
	(0.010)	(0.010)	(0.010)	(0.009)
Has investments	0.222***	0.104***	0.140***	0.095***
	(0.009)	(0.010)	(0.009)	(0.009)
UK	-0.038**	0.060***	-0.080***	-0.024
	(0.016)	(0.017)	(0.015)	(0.015)
Australia	0.106***	0.128***	0.136***	0.104***
	(0.015)	(0.016)	(0.015)	(0.014)
France	0.149***	-0.022	0.035**	-0.013
	(0.015)	(0.016)	(0.015)	(0.014)
Germany	-0.083***	0.015	-0.006	-0.033**
	(0.016)	(0.016)	(0.015)	(0.014)
Japan	-0.175***	-0.074***	0.126***	-0.074***
	(0.016)	(0.016)	(0.015)	(0.014)
Singapore	0.078***	-0.028*	0.110***	-0.008
	(0.016)	(0.016)	(0.015)	(0.014)
Constant	0.302***	0.226***	0.119***	0.122***
	(0.016)	(0.017)	(0.015)	(0.014)
Observations	12,139	12,139	12,139	12,139
R-squared	0.139	0.068	0.076	0.072

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Baseline: male, age 55 or older, income group is "bottom 50%", no college degree, not married, not employed, country: US. Indonesian respondents were excluded from the multivariate analysis. We also dropped observations where income information was missing or equal to don't know/prefer not to say. Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey.

Table 20. Factors associated with ESG investment ownership

VARIABLES	(1) Has ESG investments any type	(2) Has ESG investments any type
ESG literacy indicator		-0.015
		(0.012)
Big 3 finlit questions correct		-0.063***
		(0.013)
All investor literacy questions correct		-0.005
		(0.015)
Want to make a positive impact with investments	0.200***	0.200***
	(0.013)	(0.013)
Female	-0.053***	-0.061***
	(0.012)	(0.012)
Age 23-34	0.161***	0.146***
	(0.018)	(0.018)
Age 35-54	0.088***	0.077***
	(0.015)	(0.016)
Middle 40% income	0.027*	0.034**
	(0.014)	(0.014)
Top 10% income	0.043**	0.057***
	(0.020)	(0.020)
College degree	0.065***	0.076***
	(0.013)	(0.013)
Married	0.047***	0.040***
	(0.014)	(0.014)
Divorced, sep. or widowed	-0.023	-0.027
	(0.023)	(0.023)
Employed	0.043***	0.040***
	(0.015)	(0.015)
UK	-0.047**	-0.043*
	(0.023)	(0.023)
Australia	0.108***	0.102***
	(0.021)	(0.021)
France	0.012	0.007
	(0.024)	(0.024)
Germany	0.081***	0.091***
	(0.022)	(0.022)
Japan	-0.032	-0.030
	(0.023)	(0.023)
Singapore	-0.060***	-0.051**
	(0.020)	(0.020)
Constant	-0.013	0.030
	(0.024)	(0.025)
Observations	5,282	5,282
R-squared	0.112	0.117

Sample: investors only. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Baseline: male, age 55 or older, income group is "bottom 50%", no college degree, not married, not employed, country: US. Indonesian respondents were excluded from the multivariate analysis. We also dropped observations where income information was missing or equal to don't know/prefer not to say. Source: Authors' calculations using the 2022 SKBI-GFLEC Sustainable Investment Survey.