



## Investing responsibly: What drives preferences for sustainability and do investors receive appropriate investments?



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### ABSTRACT

Investors increasingly want to hold portfolios reflecting their social and environmental values, and regulators in Europe now require financial advisors to consider their clients' preferences for sustainability. Drawing on construal level theory, this paper examines the factors explaining the extent of retail investor demand for socially responsible investing. Using a psychometric questionnaire captured in a large database of real data arising from the interaction of financial advisors with their clients, we assess the impact of risk tolerance and capacity for loss on sustainability preferences as well as demographic factors. We employ regression analysis and logit models. By comparing clients' strength of sustainability views with the ESG ratings of the funds they buy, for the first time we are able to identify the extent to which fund choices and sustainability preferences match. While investors with stronger desires for sustainability do hold more highly ESG-rated funds on average, the relationship is weaker than might have been expected. Perhaps surprisingly, a majority of clients for whom responsible investing is very important hold some unrated funds, while those for whom it is unimportant nonetheless hold highly ESG-rated funds in their portfolios. We therefore conclude that more focus on sustainability preferences is required when financial advisors make recommendations to their clients to ensure that retail investors get the portfolios they want.

### 1. Introduction

Demand for responsible investments has shown a remarkable upward trajectory over the past decade and investors often have strong preferences for them, withdrawing *en masse* from traditional funds and instead switching to those with sustainability foci. For instance, Hartzmark and Sussman (2019) find that within less than a year following the publication of the Morningstar fund sustainability ratings in 2016, the top-rated funds had grown by \$24–32bn while those that were given the lowest ratings had shrunk by \$12–15bn.

Socially responsible investing (SRI) is an approach to asset selection that involves a consideration of the underlying firm's corporate social performance (CSP), rather than just its financial characteristics. Among other labels, SRI is variously known as ethical investing, sustainable investing, and ESG investing. CSP is a multi-dimensional construct and can involve steps to limit or mitigate environmental damage, ensure fair treatment of the workforce and consumers, and encourage corporate philanthropy – see the inaugural edition of this journal (Liljeblom et al., 2024) for a summary of several recent strands of this literature.

As the figures above demonstrate, SRI is already a vital theme in portfolio choices. But alongside existing responsible investors stands a group of others who are not current socially responsible portfolio holders, although they are drawn to ESG and might invest in the future. According to a survey of mutual fund holders in Germany, among 421 respondents, 72 (17 %) were already responsible investors, but a further 155 (37 %) were potentially interested (Wins & Zwergel, 2016). There is also a third group comprising retail investors who have chosen to retain non-ESG funds, possibly because they believe that the higher fees typically charged by SR funds (Kempf & Osthoff, 2008) are not justified by their performance. Indeed, paradoxically, Wins and Zwergel (op cit.) also find that their survey participants expect ESG funds to generate a lower performance than non-ESG funds, despite also believing that socially responsible firms will produce higher stock returns. A final subset of investors, like the third group, do not hold sustainable funds, but for a different reason. Specifically, this latter class are actively opposed to the philosophy of SRI (Berry & Junkus, 2013, p.719), perhaps believing it to embody values linked with a particular set of political and lifestyle perspectives to which they do not subscribe (see Borgers et al., 2015).

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It is evident that there are distinct groups of responsible investors – both existing and intentional – as well as non-SRI investors, including those who are philosophically opposed to it. Therefore, it is of interest to ascertain the individual characteristics that make particular people more prone to be interested in SRI than others. Why do some investors care about the ESG credentials of the portfolios they hold but others do not? While there is a plurality of motivations at play, at their heart is the notion that those who engage in SRI believe, through their trading and investment activity, they will encourage good corporate behaviour and discourage bad practices (Aslaksen & Synnestvedt, 2003; Palacios-González & Chamorro-Mera, 2018). Although SR investors have differing primary foci regarding the aspects of ESG that most resonate with them (Diouf et al., 2016), often they are particularly concerned about environmental degradation. Consequently, more money flows into ESG funds after corporate environmental disasters than at other times (Bialkowski & Starks, 2016).

Despite Wins and Zwergel's findings cited above, another possible motivation for holding socially responsible portfolios is that those investors believe they will generate superior returns compared with conventional funds. Regarding the evidence on which portfolios perform best in reality, both the theoretical and empirical literatures are mixed.<sup>1</sup> From the theoretical perspective, one line of argument suggests that firms can lock into a virtuous circle by operating responsibly, to the benefit of all stakeholders including shareholders. It is possible that a high level of CSP could lead to cost reductions (for instance, by saving on water or energy usage) or happier, more committed, and productive workers (Edmans, 2011). Firms with specialist ESG committees, linked with good firm governance, tend to have higher CSP (Huang et al., 2024). Additionally, good CSP could enhance the firm's reputation and therefore its brand value, increasing the demand for its products or services (Fombrun & Shanley, 1990) and widening its investor base, therefore reducing its cost of capital (Heinkel et al., 2001). The opposite, 'Friedmanite' perspective argues that resources expended on activities falling under the sustainability umbrella are wasteful and likely to detract from profitability by adding more to costs than they contribute to revenues (McWilliams & Siegel, 2001). A final theoretical angle would argue for the irrelevance of sustainability as an explanatory variable for investment performance since any rational organisation would engage in such initiatives just up to the point where the benefits equal the costs, thus always maximising profits at the firm level – see Brammer et al. (2006) for a detailed discussion of these arguments.

Turning now to the results of empirical studies on the comparative performance of ethical versus conventional investments, again the findings are somewhat mixed, and the lack of consensus is argued to derive in part from the wide array of markets, data sources, time periods, definitions, and dimensions of CSP that could be employed (e.g., Griffin & Mahon, 1997). Some studies have examined the performance of funds, while others have focused on a firm-level analysis. At the fund level, Bialkowski and Starks (2016) and Hamilton et al. (1993) observe little difference between ethical and conventional funds. Examining the results from firm-level analysis, again, these are mixed, with some authors finding a positive association between CSP and financial performance (e.g., Saba, 2025) and many observing mixed results or no link (e.g., Humphrey & Tan, 2014). Statman (2000) finds that the Domini Social Index constructed by Kinder, Lydenberg and Domini (KLD), slightly outperforms the general US equity market in raw terms but underperforms on a risk-adjusted basis so that overall, there is little difference between ethical and regular investing, a finding echoed by Bauer et al. (2005). On the contrary, Brammer et al. (2006) find that the highest returns are earned by the stocks of firms with the worst social performance on employment and environmental grounds.

Even though there is not overwhelming evidence in the academic

literature that 'good companies' provide superior financial performance, socially responsible investors may consider that they receive a non-financial 'return' from this activity (Beal et al., 2005), and thus they are willing to sacrifice expected monetary returns to hold assets that are consistent with their values. Moreover, there is sometimes a belief – empirically valid or not – that socially responsible investing will generate superior returns by concentrating portfolios on sectors with high growth potential such as clean energy production, and by reducing the risks associated with poor CSP (Hebb et al., 2011). This view is contested, however, and there are also findings appearing to suggest that some investors are not willing to sacrifice returns in order to invest sustainably (Petelczyc, 2022; Rosen et al., 1991, p.230).

Despite considerable advances in our understanding of SRI, the majority of existing studies are focused on examining the link between CSP and financial performance or they analyse mutual fund data and the motivations of professional investment managers, with comparatively little research on retail investors (Petelczyc, 2022), and as we note below, much of the extant evidence base on investor SRI preferences is based on surveys including questions about investor opinions or what financial products they might choose in the future rather than using real investment contexts and outcomes. There are also no existing studies that compare investor preferences for responsible investments with the financial products they actually hold, which could identify whether these clients were getting the degree of social responsibility in their investment portfolios that they wanted.

In order to address these issues, we conduct two related studies of retail investor behaviour that draw data from their interactions with financial advisors. First, we investigate preferences for sustainable investments that investors reveal via an attitude to sustainability questionnaire. In contrast to the bulk of the existing literature, a key feature of our research design is our use of data from real-world client-advisor interactions. This data source ensures that our results will not exhibit the 'hypothetical bias' that besets some other studies where respondents drawn from the general population complete on-line surveys in exchange for a very modest fee. We are able to shed greater light on these choices than previous authors by separating the impact of risk tolerance from that arising due to capacity for loss or investment experience. These are distinct constructs that regulators insist must be treated separately. We find that of the three, risk tolerance has the strongest negative effect on preferences for sustainability. Second, by examining the sustainability ratings of the funds that these investors actually purchase, we are able to determine whether their preferences matched with the outcome. As far as we are aware, we are the first to conduct such analysis using real investment outcomes. We observe that investors who have little interest in sustainable investing frequently end up purchasing funds with high sustainability ratings. Moreover, although it is very rare for those with strong pro-responsible investing views to employ only sustainability-unrated funds, they are nonetheless likely to hold some ESG-unrated investments. This suggests that financial advisors are adopting a conservative stance to investment propositioning, considering sustainability together alongside other facets of client preferences, with holding a mixture of conventional and socially responsible funds becoming a default option.

As well as examining the strength of investor desires for responsible investing, in our second study we also investigate the sustainability ratings of the investment funds they purchase. We employ ESG ratings constructed by MSCI that measure various sustainability characteristics of the assets held within mutual fund portfolios. These ratings allow for all the above potential mechanisms for implementing CSR concerns into funds. We find that, as expected, similar factors explain the cross-sectional variation in the ESG ratings of the funds chosen by investors as explain the variation in sustainability profiles, and that investors with stronger preferences for sustainability purchase higher ESG-rated funds. Our findings have implications for financial services providers and policymakers who might be keen to expand the relative size of the responsible investment market in that we provide further indication of

<sup>1</sup> There are several comprehensive literature review studies available, including those by Brooks and Oikonomou (2018) and Renneboog et al. (2008).

the types of consumers most likely to be interested in sustainable investment. Our results also have relevance for financial market regulators tasked with ensuring that advisors check the suitability of their investment propositions.

We make the following contributions to the literature. Our research provides new insights into the factors that affect whether a particular retail investor is likely to be concerned with social or environmental issues when making financial choices, which enables us to identify the sub-groups likely to be at the forefront of responsible investing and those for whom it holds little interest. This is valuable evidence for those who see targeted investment (or, indeed, targeted divestment) as a route to achieving wider societal sustainability goals such as limiting climate change or the removal of child labour from supply chains. In addition, we considerably extend the current literature by examining for the first time the outcomes of adviser recommendations and whether ESG fund metrics are in-line with investors' sustainability preferences.

The remainder of the paper is organised as follows. [Section 2](#) provides a framework grounded in the existing literature for investigating the individual characteristics making particular investors less or more inclined to invest sustainably. [Section 3](#) outlines the sources of data that we employ in the study and describes the quantitative methods we utilise for the analysis. The results are presented in [Section 4](#), while [Section 5](#) develops the discussion of our findings in more depth with [Section 6](#) providing concluding remarks and reflections alongside limitations and suggestions for additional studies in this area.

## 2. Theoretical underpinnings and hypotheses development

[Fig. 1](#) presents the conceptual framework that guides our research design. Motivations for the variable selection and linkages embodied in the diagram arise from findings in the existing literature that are elucidated below. In summary, we propose that sustainability preferences arise from investors' socio-demographic and financial characteristics. These preferences, in turn, influence the ESG ratings of their fund holdings, but these characteristics also affect the fund choices directly (dotted lines) since the financial advisor will take all these aspects into account when presenting their client with an investment proposition.

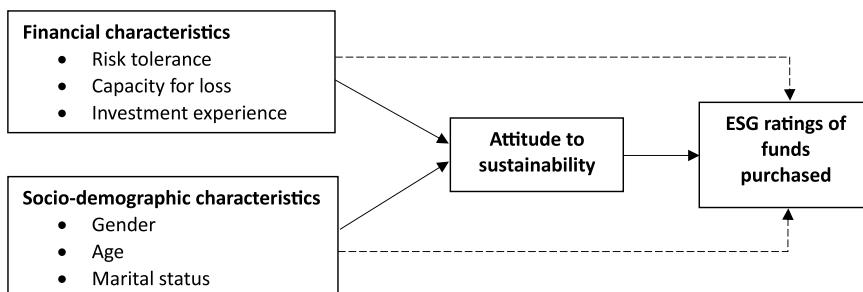
An important factor underlying a client's financial characteristics and behind an adviser's recommendation, whether considering sustainable products or not, is their investment horizon – i.e., the length of time they plan on investing to achieve their financial goals ([Benartzi & Thaler, 1999](#); [Shafi et al., 2011](#), p.347; [Siebenmorgen & Weber, 2004](#)). Given that a long-term time horizon is often more than ten years, the construal level theory is relevant when exploring characteristics that impact both adviser and client investment decisions. This Theory explains how individuals have abstract thoughts about an event that is perceived to be psychologically distant from the present; in contrast, thoughts referring to the here and now are more concrete. This perceived psychological distance can differ dependent on where (geographical) or when (temporal) an event takes place and between the perceiver and others (social) that it may affect ([Liberman & Trope, 2008](#); [Trope & Liberman, 2010](#)).

Future costs and benefits are weighed when considering sustainable investing, similar to intentions to save. Typically, the benefits in the future outweigh the costs, but when evaluated in the present day, then the opposite can often be perceived due to this psychological distance ([Eyal et al., 2004](#)). In terms of climate change, for example, although recent evidence shows the negative effects on today's environment, traditionally it has been considered as a risk that will impact more future generations (temporal) or remote regions (geographical). Therefore, acting now may be viewed as unattractive given that the promise of rewards is distant in time as well as uncertain ([Spence et al., 2012](#)).

The perceived psychological distance, whether geographically, temporally, or socially related, can impact decisions where people are more likely to take greater risks as the distance increases ([Apostolakis et al., 2018](#)). This perception is also affected by sociodemographic characteristics. For example, [Massara and Severino \(2013\)](#) found that older individuals (over 65 years old) were more likely to resort to a high construal level, showing signs of greater psychological distance than younger participants. Financial and sociodemographic characteristics are therefore important to consider when exploring attitudes to sustainability (see [Fig. 1](#)).

Turning now to the empirical literature on the types of investors most interested in sustainability, an early investigation of the motivations and characteristics of investors in socially responsible funds was undertaken by [Rosen et al. \(1991\)](#). They surveyed a large sample of investors with holdings in mutual funds that had used social screens in their stock choices. Rosen et al. found that, compared with those holding traditional funds, socially responsible investors tended to be younger and with higher levels of education (see also [IEscrig-Olmedo et al., 2013](#) and [Nilsson, 2008](#)). This study provides motivation that the obvious place to begin examining the link between investor characteristics and their appetite for sustainable investing is by focusing on basic demographic information such as gender, age, marital status, income, and wealth, since these variables have been found to be influential in affecting other aspects of investor financial preferences such as their attitude to risk ([Brooks & Williams, 2024](#)). A recent pan-European study identified a range of socio-demographic variables that determine interest in sustainable finance, including age, gender, and home location ([Olumekor & Oke, 2024](#)).

Demand for sustainable investments has increased over recent years. One theory for such an increase in interest is due to younger investors supposedly being more values-driven, and therefore having a greater desire to seek portfolios that align with their views (see the Japanese survey results of [Yamane & Kaneko, 2021](#)); younger investors are more motivated to positively impact the environment and society ([Pokorna, 2017](#)). [Rosen et al. \(1991\)](#) conduct an extensive early survey of US socially responsible fund investors, revealing that their median age was 39 compared with 52 for conventional funds. Similarly, using a large survey of US individual investors, [Junkus and Berry \(2010\)](#) found that younger people invested more in SRI, although [Hafenstein and Bassen \(2016\)](#) found the opposite, with older investors making greater use of sustainability information and holding more sustainable investments. Although findings are somewhat mixed regarding age and sustainability



**Fig. 1.** Conceptual model for the determinants of sustainability preferences and sustainable investments.

preferences, we expect younger clients to view sustainability as of higher importance.

#### H1. Age is negatively linked with views on the importance of sustainability.

The gender of the investor is also a relevant factor, with women having been found more likely to be interested in ethical investing than men (see [Cheah et al., 2011](#)). A wealth of international evidence supports this position. In their survey-based investigation of the demographic characteristics of ethical investors in Australia, [Tippet and Leung \(2001\)](#) find that approximately two-thirds are women. Likewise, [Wins and Zwergerl \(2016\)](#) conduct an on-line retail investor questionnaire in Germany, and find that women comprise only 12 % of investors in conventional funds but 23 % of those investing in socially responsible funds. Socially responsible investors comprise 6.8 % of all women in Spain but only 4.9 % of men ([LEscrig-Olmedo et al., 2013](#)). According to [Petelczyc \(2022\)](#), female retail investors in Poland are around 1.5 times more likely to be willing to forgo profits to invest responsibly than their male counterparts. In a pan-European study, [Bassen et al. \(2019\)](#) find that women are more likely than men (although not significantly so) to believe that climate performance is more important the financial attributes when selecting a fund. Women also have a higher likelihood of choosing an ethical fund, and they are generally more concerned about sustainability ([Brunen & Laubach, 2022](#); [McCright & Xiao, 2014](#); [Rossi et al., 2019](#)).

#### H2. Women view sustainability as more important than men.

Very few studies in the extant literature have investigated the effect of marital status on preferences for ESG investing, although married people are seen as being more socially and environmentally conscious consumers than singletons generally (see, for example, [Diamantopoulos et al., 2003](#)), and it is expectable that this pattern would be repeated in the investment context. Conforming with this intuition is the research by [Wins and Zwergerl \(2016\)](#), who find that married people (and those with children) are more likely to be socially responsible investors than singletons. Indeed, their survey indicates that roughly half of investors in conventional funds are married, but this proportion rises to 73 % of socially responsible investors. Despite that, [Gutsche et al. \(2021\)](#) found married people to be less aware of sustainable investments, and arguably it is challenging to disentangle the impact of marital status from that arising due to age and life stage on the demand for sustainability. On balance, the existing evidence leads us to propose the following hypothesis.

#### H3. Married clients view sustainability as of greater importance than all others.

Even if good CSP does not lead to greater returns than poor social performance, it might have ‘wealth-protective’ effects if it is an effective tool for firms to reduce or eliminate some of the risks that firms may face. Firms that improve their environmental performance experience reduced market risk and higher returns ([Derwall et al., 2005](#); see also [Luo & Bhattacharya, 2009](#), and [Salama et al., 2009](#)). Similarly, other findings suggest that socially irresponsible firms have higher systematic risk and idiosyncratic risk than firms having a higher social performance ([Lee & Faff, 2009](#); [Oikonomou et al., 2012](#), respectively). More recently, [Albuquerque et al. \(2019\)](#) also obtained results showing that firms with good social performance have lower systematic risk, and the reputational benefit of good social performance can protect firms during financial market downturns as investors consider such companies to be more reliable ([Lins et al., 2017](#)). [Oikonomou et al. \(2014\)](#) use a comprehensive US panel dataset and find that corporate social performance is negatively related to corporate bond yield spreads (see also [Bauer & Hann, 2010](#) for other US evidence), while similar results emerge from [Menz \(2010\)](#) European bond study.

The literature reviewed above indicates a potential causal pathway from investor risk tolerance to choices about whether to invest

sustainably or not. Specifically, if strong CSP has wealth-protective effects and leads firms to have lower risk, it seems likely that more risk averse investors would be more inclined towards SRI than those who are relatively risk tolerant. To this end, [D'hondt et al. \(2022\)](#) show that on average, investors who are more risk averse hold stocks with high ratings along environmental and social ('E' and 'S') dimensions, although the reverse is true regarding the governance ('G') measure. Corroborating this finding, [Faradynawati and Söderberg \(2022\)](#) examine the factors that affect the sustainable investment preferences of a large sample of ‘robo-advised’ retail clients in Nordic countries, finding those with a high-risk aversion and with shorter investment horizons are more willing to invest sustainably. [Hafenstein and Bassen \(2016\)](#) found that investors’ risk aversion had no influence on investments into sustainable products, although a later study by [Bassen et al. \(2019\)](#) argued that more risk-tolerant participants placed less weight on the climate performance of funds compared with their financial performance. Given that more risk-averse investors have been found to be inclined towards sustainable investments, we hypothesise that those with a higher risk tolerance will view sustainability to be of lower importance.

#### H4. Risk tolerance is negatively related to the importance of sustainability.

Institutional investors consider negative environmental shocks such as climate change as an important source of risk ([Krueger et al., 2020](#)). Similarly, governance failures or the negative publicity that can occur due to poor corporate social performance could be a further source of potentially catastrophic risk at the firm level (e.g., [Hong & Kacperczyk, 2009](#)). People might consider that investing in companies demonstrating high levels of CSP mitigates against these risks – see, for example, the hedging portfolios comprising such stocks formed by [Engle et al. \(2020\)](#). The evidence on whether high CSP does provide protection against such risks is mixed, however, with [Ashraf et al. \(2024\)](#) finding no evidence that, at the country level, progress towards achieving United Nations Sustainable Development Goals provided protection against the economic impacts of COVID-19. We would expect that investors with a greater capacity for loss will view sustainability within their investments as less important than those who can only afford a small loss since poor CSP could be a significant source of such losses.

#### H5. Capacity for loss is negatively related to the importance of sustainability.

Although [Lagerkvist et al. \(2020\)](#) found that experience of saving had no effect on choices of conventional or impact specific funds, [Bassen et al. \(2019\)](#) found that those with greater financial literacy and longer investment horizons placed greater importance on the financial performance of their investments over climate performance. We therefore hypothesise that clients with greater experience will view sustainability within their investments as of lesser importance than inexperienced investors.

#### H6. Investment experience is negatively related to the importance of sustainability.

There are several methods through which fund managers can incorporate ESG considerations into their asset allocation and portfolio construction decisions ([Sandberg & Nilsson, 2015](#)) and which would increase their sustainability rating. The early socially responsible investment movement primarily implemented their preferences through ‘screening out’ (negative screening), which involves beginning with a broad investment universe and systematically removing particular assets or sectors whose activities do not align with the investor’s values. Such sectors might include, for example, those involved with the production of weapons, alcohol, fossil fuels, or those closely associated with countries where human rights violations frequently occur. A slight variant on this is ‘screening in’ (positive screening), where companies or sectors meeting specific ESG criteria are deliberately overweighted. This is related to ‘impact investing’, where money is placed in assets

specifically designed to develop positive social or environmental outcomes (see Kaya & Orpiszewski, 2025, for a recent study). A final possibility is the adoption of a best-in-class approach, where all sectors remain in the portfolio mix and positive screening takes place at the sector level. In this way, the 'least bad' companies having, for instance, the strongest environmental mitigations in place, are selected from poorly performing industries such as oil and gas extraction rather than excluding all such companies entirely (see van Duuren et al., 2016).

Over the past two decades, there has been significant development of the regulatory framework governing the services that financial advisors provide for their clients in both the EU and the UK – see Siri and Zhu (2019) for a discussion of the situation in the EU, Ring (2016) for the UK, and Burke and Hung (2015) for a cross-country comparison. At the heart of the guidelines lies a requirement that advisors do all they can to ensure the suitability of their investment propositions – that is, advisors align the products they recommend with each investor's needs and preferences. For instance, the financial market regulator in the EU, the European Securities and Markets Authority (ESMA), now requires financial advisors to consult their clients about their sustainability preferences as part of its updated MiFID II directive. Currently, the UK's regulatory definition of 'suitability' does not include a statutory requirement to consider sustainability, although the direction of travel makes this likely in the future.<sup>2</sup> This leads us to expect that investors who express stronger preferences for sustainability will have those desires met by the funds they purchase, which will therefore be more highly ESG-rated.

**H7a.** Investors with stronger preferences for sustainable investing will hold a higher proportion of ESG-rated, and in particular highly rated, funds.

**H7b.** Investors for whom sustainable investing is of low importance will hold predominantly ESG-unrated funds.

We test the hypotheses developed above through two separate but linked studies. The first study uses a large database to explore the factors that impact clients' sustainability preferences, considering demographic and commonly measured risk-taking variables that may explain their views and the importance to them of incorporating sustainability within investment portfolios. The second study uses the subset of clients from study one for whom the ultimate choice of funds is reported within the database to examine whether the same factors that influence sustainability preferences can also explain the funds selected. Relatedly, we investigate the extent to which investors' sustainability preferences are taken into account in the final fund choices, by examining the funds' ESG metrics reports.

### 3. Data and methods

#### 3.1. Data sources

As Wins and Zvergel (2016, p.52) note, while data on the supply of SR funds and their features is readily available through standard financial information providers such as Bloomberg or Morningstar, it is much harder to obtain any knowledge about who is buying SR products and who is not. Consequently, many existing studies resort to surveys of the general population to address this issue, often resulting in a sample whose profile is very different to that typifying an actual retail investor. For instance, retail investors using the services of financial advisors in the UK have a median age of 57 (Brooks et al., 2018), whereas those

completing on-line surveys are typically much younger (see, for example, Revilla & Ochoa, 2017, whose participants had a mean age of 37).

A separate issue is whether investors may have incentives to hide their true preferences. It is, of course, possible that they would be uncomfortable about expressing a view that sustainability is not important to them and that they would prefer to focus purely on the financial characteristics of their investments. However, since the financial products offered to these advised clients will depend on their responses to the questionnaires, clients will have 'skin in the game'. They will consequently be negatively impacted by opening themselves to the risk that they end up with portfolios having different features than their preferred ones if they wilfully misrepresent their choices. We therefore believe that the use of sustainability data derived from client-advisor interactions is an effective method to elicit accurate real-world preferences.

By contrast to many existing studies, we employ a large dataset that represents a key part of the input to real financial decisions made by UK retail investors. Our entire database is obtained from Dynamic Planner, which is the UK's leading provider of financial planning solutions to independent financial advisors (IFAs). The data arise from the 'fact find' that IFAs undertake with their clients before presenting the latter with an investment proposition. This process usually begins with the client providing a range of demographic information and completing client profiling questionnaires (an attitude to risk questionnaire, ATRQ), and multi-item surveys for capacity for loss and investor experience. Since May 2021, Dynamic Planner has also incorporated an attitude to sustainability questionnaire, which aims to capture the extent to which clients have preferences for investments that embody high performance on ESG grounds. This enables advisors to better ensure the suitability of their propositions by matching the client's preferences along sustainability lines as well as more conventional financial risk-based dimensions.

Dynamic Planner's sustainability questionnaire was the first of its kind to be employed in the financial services sector in Europe.<sup>3</sup> It uses a 15-item questionnaire based on psychometric principles and was implemented following extensive question design and large-scale testing phases. Each of the 15 questions focuses on a specific aspect of the client's preferences for sustainability, with responses measured on a five-point Likert scale in each case from 'strongly disagree' to 'strongly agree' and combined into an aggregate score. This overall score is then placed into one of five buckets that measures the client's strength of conviction about the importance to them of incorporating sustainability issues into their investment options, ranging from 'low importance' through 'some importance', 'medium importance', and 'high importance' to 'very high importance'.

The use of a multi-item sustainability questionnaire rather than a single question such as, 'how important to you are ESG considerations when deciding how to invest your money?' has several advantages, including a more accurate measurement of the true but latent preferences and the inclusion of a wider range of measures and terminology relating to sustainability across the questions that can capture diverse aspects of motivations and preferences. The 15 questions are focused on five aspects of an investor's sustainability preferences:

1. The 'psychological distance' – the extent to which the investor feels that the issues are close to them, both in time and in terms of the effects (e.g., whether the impacts of their decision will occur soon, and influence people close to them) – see Singh et al. (2017), Wang et al. (2019).

<sup>2</sup> The Financial Conduct Authority in the UK has chosen for the time being to focus on ensuring that ESG labelling on financial products is 'fit for purpose' and does not give a misleading impression that funds adhere to particular ESG standards that in fact they do not. See: <https://www.fca.org.uk/news/press-releases/sustainability-disclosure-and-labelling-regime-confirmed-fca>.

<sup>3</sup> See, for example, an article in FT Adviser: <https://www.ftadviser.com/investments/2021/05/04/dynamic-planner-launches-tool-to-assess-clients-esg-appetite/>.

2. The investor's personal values – the extent to which they want to influence environmental and social change and seek assets that are consistent with these values even if they have lower expected returns – see [Beal et al. \(2005\)](#), [Berry and Yeung \(2013\)](#), [Pasewark and Riley \(2010\)](#).
3. The emotional benefit they expect to receive from investing sustainably – those who expect to obtain a greater positive emotional impact from sustainable investing will have a stronger preference for it – see [Glac \(2009\)](#).
4. Their desire to have a positive impact – captures the extent to which investors have the objective to proactively facilitate measurable environmental or social improvements – see [Bugg-Levine and Emerson \(2011\)](#).
5. Financial considerations – even if investing sustainably does not require a sacrifice of expected returns, it will still nonetheless reduce the number and range of investment products available and also possibly diminish the ability to fully diversify risks and therefore there might be trade-offs involved – see [Cappucci \(2018\)](#).

Currently, not every client using Dynamic Planner also completes the sustainability questionnaire, and therefore our sample comprises all clients who completed the ATRQ, capacity for loss, investor experience and sustainability questionnaires between 1 January and 28 September 2023 and have demographic information in the system. Beginning with 25,983 responses, we removed any clients with missing responses within questionnaires (leaving 25,444) and any with unspecified gender or marital status, leaving a total of 17,490 observations. The use of this concentrated timeframe should ensure that the questionnaires were all completed during relatively homogeneous economic and other circumstances, which would not necessarily be the case were the data collected over a longer period.

The ATRQ data recorded in Dynamic Planner are obtained from a questionnaire designed using similar psychometric principles to those employed when constructing the sustainability questionnaire. The ATRQ also comprises 15 items designed to cover cognitive, behavioural, and emotional aspects of investors' risk preferences. The scores on the individual questions are aggregated and split into ten categories from very risk averse (category 1) to very risk tolerant (category 10) based on the total score.

The capacity for loss questionnaire we employ is not psychometric, but for the purpose of this study, answers to the five questions within Dynamic Planner are each scored on a 1–4 scale, resulting in an overall total ranging from (5), a client who cannot afford any losses, to (20), a client who would be able to cope with a significant loss during their investment journey. The investor experience questionnaire within Dynamic Planner is also not psychometric, but for the purpose of this study and to create a score that appropriately reflects a client's level of experience, the responses to five questions from the system were scored, the first four referring to products that the client currently holds (e.g., bonds or stocks and shares) and the remaining question around their investment confidence. This composite score could range from (1), a client with little or no investment experience, to (7), a client who is highly experienced.

In addition to the sustainability questionnaire discussed in section above, Morgan Stanley Capital International (MSCI) provides Dynamic Planner with an ESG fund metrics report based on their measurement of companies' ESG risk exposures. They consider both ESG risks and opportunities using a rules-based approach, and their reports include data on overall ESG ratings representing a company that is a leader through to a laggard, and also other information including ESG coverage, ESG policy, fund exposure, sustainable impact exposure, values alignment exposure and environmental, governance and reputational risk.

Through Dynamic Planner, advisers have access to clients' sustainability views and the MSCI ESG fund metrics allowing them to align their recommendations with clients' preferences. The fund data we employ in this study are the fund ESG ratings and available ESG policies. In terms

of the ESG ratings, these are designated letter gradings from AAA to CCC where AAA and AA ratings are awarded to firms considered leaders; A, BBB and BB are average; B and CCC are laggards. No funds recommended to a client were rated as laggards. Funds can simply contain or not contain an ESG policy which is noted on the ESG fund metrics report, and thus at the fund level it is a binary variable. MSCI define an ESG policy as when funds 'have adopted investment policies that consider some ESG criteria, including environmental, social or governance concerns, religious beliefs, inclusive employee policies, or environmentally friendly investments.'

The fund holding information was combined with clients who completed all questionnaires from 1 January to 28 September 2023. We focus on newly recommended funds and not any that the client already held prior to completing their sustainability questionnaire, since these historical holdings may or may not have reflected their views on responsible investing. Using only clients for which the sustainability preferences and selected funds were available with no missing demographic data resulted in 1601 client observations. Most clients hold more than one fund simultaneously, and hence the database includes clients purchasing both rated and unrated funds, but in some models documented below, it was necessary to further narrow the sample to only clients with at least one rated fund (i.e., removing clients holding solely unrated funds), for which there were 928 observations.

### 3.2. Methods

#### 3.2.1. Study 1

Here, our primary variable of interest is a composite measure of the importance of sustainability to an investor, which is measured on a 1–5 integer scale as explained in greater detail in the previous sub-section. As such, its values are limited but ordinal and we therefore use ordered logit specifications of the form:

$$\text{Prob}(\text{Sustainability}_i) = \alpha' + \beta_1 \text{male}_i + \beta_2 \text{age}_i + \beta_3 \text{age}_i^2 + \beta_4 \text{ATR}_i + \gamma'_i X_i + u_i \quad (1)$$

where  $\alpha'$  is a vector of four cut-off points between the categories,<sup>4</sup>  $\text{male}_i$  is a dummy variable taking the value 1 if investor  $i$  is a man and 0 otherwise;  $\text{age}_i$  is the investor's age in years;  $\text{ATR}_i$  is the investor's risk tolerance score on a 1–10 scale where 1 is the lowest category (most risk averse) and 10 is the highest (most risk tolerant);  $X_i$  is a vector of other variables, including marital status, which is a set of five 0–1 dummy variables for whether the investor is single, married, in a civil partnership, divorced, or widowed; capacity for loss, which is a composite score of five questions (1–20); and investor experience a score of five questions, four of which are equally weighted and an additional question exploring confidence, overall ranging from (1–7);  $u_i$  is a zero mean disturbance term.

#### 3.2.2. Study 2

For exploring recommended fund ESG metrics we have two variables of interest: the percentage of funds with an ESG leader (AA-AAA) rating and the percentage of funds with an ESG policy, both range from 0 to 100. As values are on a continuous scale, we perform OLS regressions and the specifications of the form:

$$\text{ESG}_i = \alpha' + \beta_1 \text{male}_i + \beta_2 \text{age}_i + \beta_3 \text{age}_i^2 + \beta_4 \text{Sustainability}_i + \gamma'_i X_i + u_i \quad (2)$$

where  $\text{ESG}_i$  is either the percentage of a client's funds with an ESG policy, or the percentage of funds with an ESG leader rating;  $\alpha'$  is intercept,  $\text{Sustainability}_i$  is the client's sustainability profile on a scale from 1 (low importance) to 5 (very high importance), and all other variables are defined as for Eq. (1).

<sup>4</sup> These cut-offs are not presented due to space constraints.

### 3.3. Data summary

#### 3.3.1. Study 1

**Table 1** presents detailed summary statistics for the sample used in this study. The headline figure in Panel A is that approximately 70 % of clients view sustainability as important to some degree, although for a third of investors it is of low importance. The sample of 17,490 people is approximately evenly split by gender (57 % male – see Panel B), with the majority of clients meeting their advisors being middle aged (over a third are aged 55–64 – see Panel C), and an equal proportion who are single (47.3 %) or married (46 %), with just 3.5 % divorced, 2.8 % widowed and less than 1 % in a civil partnership, as shown in Panel D. On a 1–10 scale, around 60 % of the sample have a risk tolerance score of 5 or 6, with 98 % of the sample being between 3 and 8 inclusive, as Panel E demonstrates.

Some patterns regarding the link between an investor's personal characteristics and their demand for sustainability in investment products are already apparent from an examination of the information in **Table 1** on a univariate basis. Sustainability is clearly considerably more of a concern for women than men, with it being of low importance for 38.9 % of men but just 26.1 % of women; on the other hand, it is of medium to very high importance for 32 % of women but only 20.5 % of men (see Panel B and **Fig. 2**). A Kruskal-Wallis rank sum test for a difference in the medians between the sustainability scores of the two gender groups is very highly significant ( $\chi^2(1)$  test statistic of 445.55, p-value < 0.001).

Examining sustainability by age grouping (Panel C), it is harder to identify any pattern except that interest in it is lower for those in middle age (45–54) than any other age group, perhaps because in many instances this cohort is likely to be focused on the dual demands of childcare as well as work, and therefore considerations of responsible investing are assigned a low priority. However, given the large sample size, a Kruskal-Wallis rank sum test for a difference in the medians again shows a significant difference across age groups ( $\chi^2(7)$  statistic of 33.05, p-value < 0.001).

By marital status, it is evident that sustainability is more important to those in a civil partnership (16 % rating it of high or very high importance) than other statuses, albeit the number of respondents in this category is small. Sustainability is also more important for investors who are widowed than those who are single, married or divorced, perhaps reflecting the higher proportion of widows than widowers whereas the other marital status categories are more gender balanced. A Kruskal-Wallis rank sum test for a difference in the medians shows a significant difference across statuses ( $\chi^2(4)$  statistic of 15.57, p-value = 0.003).

Interest in sustainability and attitude to risk score are negatively related: as risk tolerance rises, interest in sustainability falls although the relationship is not quite monotonic (Panel E). This is fairly evident from **Fig. 3**, which shows that the percentage of investors for whom sustainability has low importance rises from 26 % at risk tolerance level 2–60 % at level 10.<sup>5</sup> Again, a Kruskal-Wallis rank sum test for a difference in the medians shows a significant difference across risk profiles ( $\chi^2(9)$  statistic of 203.52, p-value < 0.001). No clear picture is apparent for the relationship between sustainability preferences and capacity for loss, but the importance of investing sustainably tends to decline as investor experience increases.

The correlation matrix in **Table 2** shows, as expected, that there are significant positive relationships between risk tolerance, capacity for loss and investor experience of 0.13–0.37. However, as suggested from previous research, there is also a significant negative correlation, albeit

of small magnitude, between these variables and whether it is important that sustainability is considered when providing investment solutions.

#### 3.3.2. Study 2

We now turn to examine summary measures of the funds that investors have selected with their advisors. Since the sample here is now a much smaller sub-set of investors completing the ESG questionnaire, for completeness we also report various statistics for investor characteristics similar to those in **Table 1**. In order to examine funds recommended to clients and whether their ESG criteria are in-line with client's sustainability preferences, data for clients where at least one recommended fund received an ESG rating were extracted. **Table 3** presents summary statistics for these 928 people. Similar distributions in terms of gender, age, marital status, and risk profiles can be found here compared with the larger sample in **Table 1**. As we already commented on these variables in comparison with client's sustainability profiles, we will not further explore them. Nevertheless, we continue to find that approximately 70 % of clients view sustainability to be of at least some importance. The addition of fund ESG data allows us to explore the relationship between recommended funds with the demographic and client profiling variables previously mentioned. **Table 3** shows an increase in the percentage of funds with an ESG policy and percentage of funds with ESG leader ratings along the sustainability spectrum from low to very high importance, although for the latter, there is not quite a monotonic increase across each of the five levels of importance.

The correlation matrix in **Table 4** reflects some of the relationships already explored in **Table 2** between attitudes to risk, capacity for loss, investor experience, and the importance of sustainability, although with this reduced sample size, only the relationship between attitude to risk and sustainability is significant. The positive correlations between all risk related measures (attitude to risk, capacity for loss and investor experience) remain. In addition, the ESG policy percentage and ESG leader percentage are positively and significantly correlated with clients' scores from the sustainability preference questionnaire, albeit the numerical values (0.26 and 0.18) are surprisingly low. Advisers appear to recommend suitable funds when considering sustainability. Interestingly, a significant negative correlation also exists between the ESG leader percentage and investor experience, which supports that those with greater investing experience tend to have less interest in sustainability and are recommended fewer funds with high ESG ratings.

**Table 5** presents the summary statistics of the MSCI ESG ratings (AAA-BB) and the proportion of clients who have at least one fund with each rating (or at least one unrated fund) in relation to their sustainability profile. The number of respondents reported in this table is 1601 since it includes both the 928 clients with at least one ESG-rated fund and the 673 who purchased only unrated funds. Given that we have data on both investor sustainability preferences and the ESG ratings of the funds they purchased, it is of interest to ascertain the extent to which those wishes were reflected in the adviser's recommendations. In general, we might expect that investors with stronger wishes for socially responsible funds will hold higher ESG-rated funds than investors with weaker desires, and that those with little interest in sustainability would predominantly hold unrated funds, as outlined in hypotheses H7a and H7b, respectively. The situation is somewhat complicated by the fact that, in reality, most investors hold several funds including a combination of both those that are rated and unrated. We thus develop two 0–1 binary dummy variables, defined in **Table 6**, to capture whether the strength of sustainability preferences matches the outcome.

## 4. Results

### 4.1. Explaining sustainability preferences

**Table 7** presents the results from estimating ordered logit models to explain the variation in client's sustainability profiles. Four separate specifications are estimated, in columns labelled (1)–(4), all of which

<sup>5</sup> We should note, however, that the proportion of investors with low interest in sustainability is higher among those in the very lowest risk tolerance category, which is not quite as expected, although the number of people in this risk category is very small ( $N = 30$  or 0.3 % of the total sample).

**Table 1**

Summary statistics for sustainability profile analysis.

Variable	Overall	Low importance	Some importance	Medium importance	High importance	Very high importance
<b>Panel A: Sustainability profile</b>						
	17,490 (100 %)	5844 (33.4 %)	7191 (41.1 %)	3205 (18.3 %)	835 (4.8 %)	415 (2.4 %)
<b>Panel B: Gender</b>						
Female	7519 (43.0 %)	1964 (26.1 %)	3146 (41.8 %)	1681 (22.4 %)	477 (6.3 %)	251 (3.3 %)
Male	9971 (57.0 %)	3880 (38.9 %)	4045 (40.6 %)	1524 (15.3 %)	358 (3.6 %)	164 (1.6 %)
<b>Panel C: Age</b>						
18–24	289 (1.7 %)	107 (37.0 %)	114 (39.4 %)	43 (14.9 %)	20 (6.9 %)	5 (1.7 %)
25–34	620 (3.5 %)	237 (38.2 %)	220 (35.5 %)	111 (17.9 %)	39 (6.3 %)	13 (2.1 %)
35–44	1295 (7.4 %)	471 (36.4 %)	462 (35.7 %)	244 (18.8 %)	66 (5.1 %)	52 (4.0 %)
45–54	2859 (16.3 %)	1030 (36.0 %)	1137 (39.8 %)	502 (17.6 %)	132 (4.6 %)	58 (2.0 %)
55–64	6235 (35.6 %)	2098 (33.6 %)	2643 (42.4 %)	1066 (17.1 %)	283 (4.5 %)	145 (2.3 %)
65–74	4422 (25.3 %)	1361 (30.8 %)	1852 (41.9 %)	891 (20.1 %)	211 (4.8 %)	107 (2.4 %)
75–84	1456 (8.3 %)	438 (30.1 %)	627 (43.1 %)	288 (19.8 %)	72 (4.9 %)	31 (2.1 %)
85 +	314 (1.8 %)	102 (32.5 %)	136 (43.3 %)	60 (19.1 %)	12 (3.8 %)	4 (1.3 %)
<b>Panel D: Marital status</b>						
Married	8039 (46.0 %)	2725 (33.9 %)	3357 (41.8 %)	1442 (17.9 %)	356 (4.4 %)	159 (2.0 %)
Divorced	610 (3.5 %)	218 (35.7 %)	236 (38.7 %)	101 (16.6 %)	35 (5.7 %)	20 (3.3 %)
Civil partnership	81 (0.5 %)	24 (29.6 %)	26 (32.1 %)	18 (22.2 %)	7 (8.6 %)	6 (7.4 %)
Single	8267 (47.3 %)	2737 (33.1 %)	3357 (40.6 %)	1542 (18.7 %)	414 (5.0 %)	217 (2.6 %)
Widowed	493 (2.8 %)	140 (28.4 %)	215 (43.6 %)	102 (20.7 %)	23 (4.7 %)	13 (2.6 %)
<b>Panel E: Risk profile</b>						
1	38 (0.2 %)	18 (47.4 %)	12 (31.6 %)	5 (13.2 %)	2 (5.3 %)	1 (2.6 %)
2	160 (0.9 %)	41 (25.6 %)	66 (41.2 %)	29 (18.1 %)	18 (11.2 %)	6 (3.8 %)
3	715 (4.1 %)	192 (26.9 %)	270 (37.8 %)	179 (25.0 %)	42 (5.9 %)	32 (4.5 %)
4	2607 (14.9 %)	694 (26.6 %)	1188 (45.6 %)	530 (20.3 %)	135 (5.2 %)	60 (2.3 %)
5	5579 (31.9 %)	1724 (30.9 %)	2444 (43.8 %)	1024 (18.4 %)	262 (4.7 %)	125 (2.2 %)
6	4710 (26.9 %)	1580 (33.5 %)	1977 (42.0 %)	835 (17.7 %)	214 (4.5 %)	104 (2.2 %)
7	2688 (15.4 %)	1096 (40.8 %)	952 (35.4 %)	466 (17.3 %)	116 (4.3 %)	58 (2.2 %)
8	785 (4.5 %)	382 (48.7 %)	233 (29.7 %)	118 (15 %)	33 (4.2 %)	19 (2.4 %)
9	173 (1.0 %)	96 (55.5 %)	41 (23.7 %)	16 (9.2 %)	13 (7.5 %)	7 (4.0 %)
10	35 (0.2 %)	21 (60.0 %)	8 (22.9 %)	3 (8.6 %)	0 (0 %)	3 (8.6 %)
<b>Panel F: Capacity for loss</b>						
Mean (SD)	12.6 (2.47)	12.8 (2.54)	12.4 (2.44)	12.5 (2.43)	12.7 (2.27)	12.9 (2.27)
Median [Min, Max]	13.00 [5,20]	12.00 [5,20]	13.00 [5,20]	13.00 [5,19]	13.00 [6,18]	13.00 [5,19]
<b>Panel G: Investor experience</b>						
Mean (SD)	4.45 (1.43)	4.55 (1.44)	4.41 (1.42)	4.40 (1.42)	4.27 (1.47)	4.34 (1.33)
Median [Min, Max]	4.00 [1,7]	5.00 [1,7]	4.00 [1,7]	4.00 [1,7]	4.00 [1,7]	4.00 [1,7]

Table 1 presents the summary statistics for 17,490 clients. The column labelled “overall” provides data across all variables (gender, age, marital status, risk profile, sustainability profile, capacity for loss and investor experience), whereas the remaining five columns present this data for each individual sustainability profile (low to very high importance). In Panel A, sustainability profile is the result of the sustainability questionnaire from low to very high importance. Panels B-D include demographic variables (Gender, Age, Marital status) broken down into the subcategories that make up these variables. Each value is the number of respondents within the sustainability profile and variable level. The values within parentheses represent the percentages of respondents within that sustainability profile level. In Panel E, risk profile is the aggregate score from attitude to risk questionnaire where a value of 1 indicates the lowest risk tolerance level and a score of 10 the highest. Panel F is an aggregate mean score ranging from 5 to 20 where 20 indicates the highest level of capacity for loss. Finally, Panel G, is an aggregate mean score ranging from 1 to 7, the higher the value the greater the level of investing experience.

have the sustainability importance profile (1–5 scale) as the dependent variable. Specification (1) includes only demographic information (gender, age, age squared, and marital status); (2) includes all variables from model (1) plus capacity for loss (5–20 scale); (3) includes all variables from model (2) plus attitude to risk (1–10 scale); (4) is the most comprehensive specification including all variables from model (3) as well as investor experience (1–7 scale). The reference categories for the dummy variables are gender = female and marital status = married.

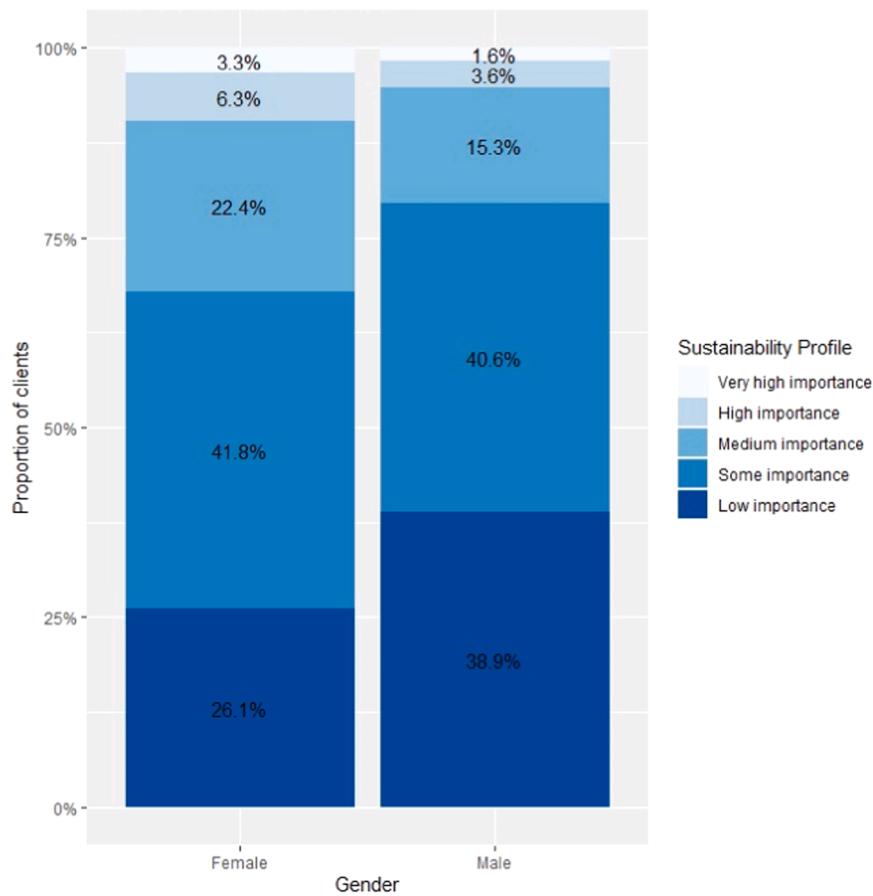
Despite it being suggested that younger clients have a greater preference for sustainable investments due to supposedly being more values-driven and having a greater desire to seek investments that align with their views, no significant differences dependent on age are found, and thus hypothesis H1 does not find support in the data. Thus, our findings on this point do not confirm those of [Junkus and Berry \(2010\)](#) or [Rosen et al. \(1991\)](#).

However, the results in model (1) confirm that women view sustainability as of significantly greater importance when considering their investments than men, thus supporting H2 and supporting existing findings in, amongst others, [Brunen and Laubach \(2022\)](#), [Cheah et al. \(2011\)](#), [McGright and Xiao \(2014\)](#), [Rossi et al. \(2019\)](#). Contradicting our

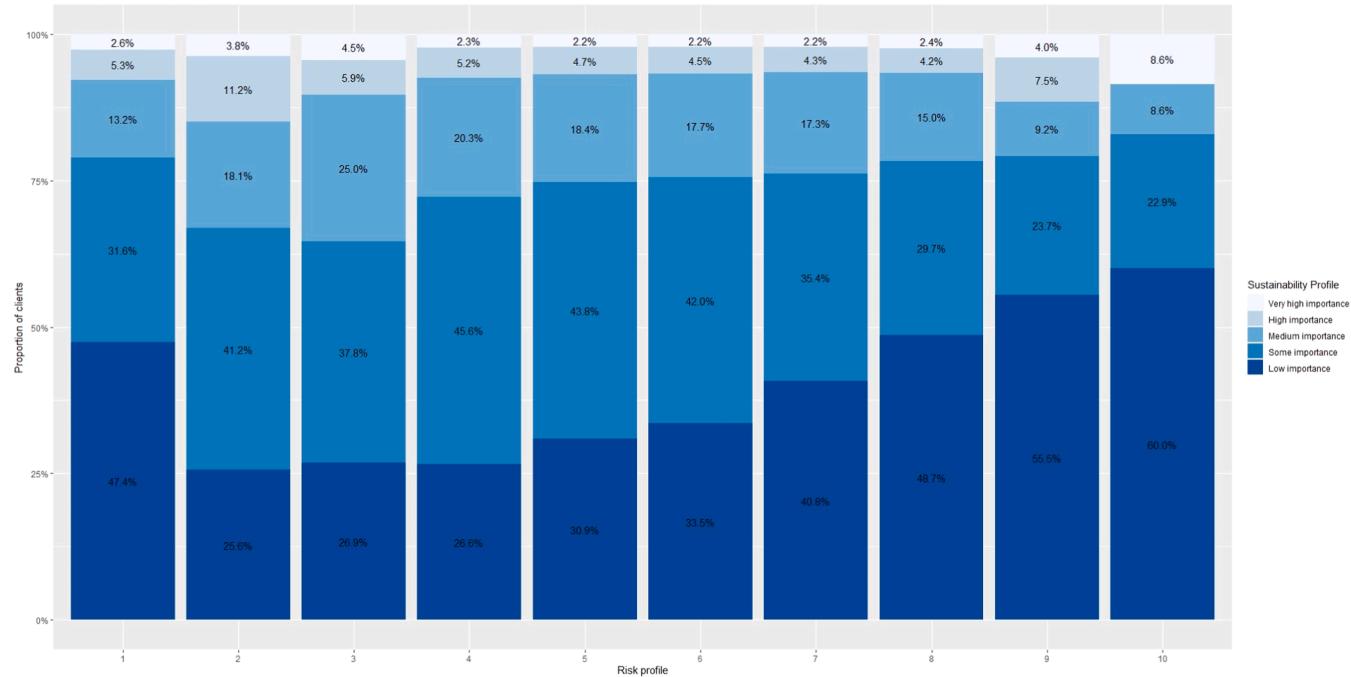
hypothesis H3, single clients and those in a civil partnership have a greater desire for considering sustainability within their investments in comparison to married clients. This finding provides a contrast to the results in [Wins and Zwergel \(2016\)](#) and the non-investment context results of [Diamantopoulos et al. \(2003\)](#).

Model (2) includes each client's capacity for loss, and all significant predictors from model (1) remain so and the parameter attached to capacity for loss is also statistically significant, providing evidence in favour of H5. The coefficient indicates that those who can afford a greater loss view sustainability as less important, again supporting the previous literature and our hypothesis.

In model (3), the demographic variables, gender and marital status continue to be significant predictors as in models (1) and (2). However, the addition of each client's risk profile is also a significant predictor, supporting H4, whilst capacity for loss no longer is, demonstrating that clients' willingness to take risk as highlighted in Fig. 3 better explains sustainability preferences than their ability to bear negative returns. Those with a higher risk tolerance view sustainability as less important when considering their investments. Finally, model (4) includes all variables from the previous three models along with investor



**Fig. 2.** Sustainability profile by gender.



**Fig. 3.** Sustainability profile by risk profile.

experience, and the results from model (3) are reflected again here. Investor experience does not impact sustainability preferences given the variables already considered, and thus H6 is not supported. The average

marginal effect of gender shows that across the five sustainability levels there is on average a 12 % increase in the probability of women viewing sustainability as of more important than men (AME = 0.12, SE = 0.006,

**Table 2**

Correlation matrix – sustainability preference data.

	Sustainability score	Attitude to risk score	Capacity for loss
Attitude to risk score	– 0.13 ***		
Capacity for loss	– 0.04 ***	0.35 ***	
Investor experience	– 0.07 ***	0.37 ***	0.13 ***

**Table 2** presents a Spearman's correlation matrix for total sustainability and attitude to risk scores, as well as client's capacity for loss and investor experience.

\*\*\* Indicates significance at the 0.1 % level.

$p < 0.001$ . In terms of a client's risk profile, the average marginal effect shows that across the five sustainability levels there is on average a 2 % increase in the probability of viewing sustainability as of more important than the next risk profile (1–10) ( $AME = 0.02$ ,  $SE = 0.003$ ,  $p < 0.001$ ).

#### 4.2. Explaining fund selection along ESG lines

**Table 8** presents the results from regression models to explain the variation in the percentage of recommended funds with ESG policies. Five separate specifications are estimated, in columns labelled (1) – (5), with policy percentage (0–100) as the dependent variable. Specification (1) includes only demographic information (gender, age (and age squared) and marital status); (2) includes all demographic variables plus the client's sustainability profile (low to very high) where the reference category is low importance; (3) includes all variables from model (2) plus capacity for loss (5–20 scale); (4) includes all variables from model (3) plus attitudes to risk (1–10 scale); (5) includes all variables from model (4) as well as investor experience (1–7 scale).

The results from model (1) show that men have fewer funds with ESG policies than women, and single clients have fewer funds with ESG policies than married ones. The same effect of gender and marital status is found in model (2), but the inclusion of the sustainability profile also shows that those who view sustainability as of medium, high, or very high importance are recommended a greater percentage of funds with ESG policies than those who view sustainability as of low importance.

**Table 3**

Summary statistics for fund ESG analysis.

Variable	Overall	Low importance	Some importance	Medium importance	High importance	Very high importance
	928 (100 %)	311 (33.5 %)	385 (41.5 %)	171 (18.4 %)	40 (4.3 %)	21 (2.3 %)
<b>Panel A: Sustainability profile</b>						
<b>Female</b>	387 (41.7 %)	100 (25.8 %)	160 (41.3 %)	90 (23.3 %)	24 (6.2 %)	13 (3.4 %)
<b>Male</b>	541 (58.3 %)	211 (39.0 %)	225 (41.6 %)	81 (15.0 %)	16 (3.0 %)	8 (1.5 %)
<b>Panel B: Gender</b>						
<b>18–24</b>	4 (0.4 %)	2 (50.0 %)	1 (25.0 %)	0 (0 %)	1 (25 %)	0 (0 %)
<b>25–34</b>	24 (2.6 %)	10 (41.7 %)	9 (37.5 %)	2 (8.3 %)	2 (8.3 %)	1 (4.2 %)
<b>35–44</b>	45 (4.8 %)	13 (39.6 %)	23 (51.1 %)	8 (17.8 %)	1 (2.2 %)	0 (0 %)
<b>45–54</b>	164 (17.7 %)	65 (39.6 %)	61 (37.2 %)	25 (15.2 %)	7 (4.3 %)	6 (3.7 %)
<b>55–64</b>	324 (34.9 %)	115 (35.5 %)	131 (40.4 %)	59 (18.2 %)	12 (3.7 %)	7 (2.2 %)
<b>65–74</b>	254 (27.4 %)	75 (29.5 %)	107 (42.1 %)	57 (22.4 %)	12 (4.7 %)	3 (1.2 %)
<b>75–84</b>	92 (9.9 %)	26 (28.3 %)	42 (45.7 %)	15 (16.3 %)	5 (5.4 %)	4 (4.3 %)
<b>85 +</b>	21 (2.3 %)	5 (23.8 %)	11 (52.4 %)	5 (23.8 %)	0 (0 %)	0 (0 %)
<b>Panel C: Age</b>						
<b>Married</b>	485 (52.3 %)	170 (35.1 %)	200 (41.2 %)	91 (18.8 %)	18 (3.7 %)	6 (1.2 %)
<b>Divorced</b>	38 (4.1 %)	9 (23.7 %)	14 (36.8 %)	10 (26.3 %)	3 (7.9 %)	2 (5.3 %)
<b>Civil partnership</b>	6 (0.6 %)	2 (33.3 %)	2 (33.3 %)	0 (0 %)	0 (0 %)	2 (33.3 %)
<b>Single</b>	356 (38.4 %)	115 (32.3 %)	151 (42.4 %)	62 (17.4 %)	18 (5.1 %)	10 (2.8 %)
<b>Widowed</b>	43 (4.6 %)	15 (34.9 %)	18 (41.9 %)	8 (18.6 %)	1 (2.3 %)	1 (2.3 %)
<b>Panel D: Marital status</b>						
<b>1</b>	2 (0.2 %)	1 (50.0 %)	0 (0 %)	1 (50.0 %)	0 (0 %)	0 (0 %)
<b>2</b>	7 (0.8 %)	4 (57.1 %)	1 (14.3 %)	1 (14.3 %)	1 (14.3 %)	0 (0 %)
<b>3</b>	29 (3.1 %)	7 (24.1 %)	10 (34.5 %)	9 (31.0 %)	1 (3.4 %)	2 (4.5 %)
<b>4</b>	128 (13.8 %)	33 (25.8 %)	54 (42.2 %)	31 (24.2 %)	6 (4.7 %)	4 (3.1 %)
<b>5</b>	264 (28.4 %)	85 (32.2 %)	107 (40.5 %)	52 (19.7 %)	14 (5.3 %)	6 (2.3 %)
<b>6</b>	281 (30.3 %)	88 (31.3 %)	137 (48.8 %)	41 (14.6 %)	10 (3.6 %)	5 (1.8 %)
<b>7</b>	166 (17.9 %)	65 (39.2 %)	61 (36.7 %)	32 (19.3 %)	6 (3.6 %)	2 (1.2 %)
<b>8</b>	41 (4.4 %)	22 (53.7 %)	15 (36.6 %)	3 (7.3 %)	0 (0 %)	1 (2.4 %)
<b>9</b>	6 (0.6 %)	3 (50.0 %)	0 (0 %)	0 (0 %)	2 (33.3 %)	1 (16.7 %)
<b>10</b>	4 (0.4 %)	3 (75.0 %)	0 (0 %)	1 (25 %)	0 (0 %)	0 (0 %)
<b>Panel E: Risk profile</b>						
<b>Mean (SD)</b>	12.8 (2.40)	13.0 (2.52)	12.6 (2.28)	12.7 (2.36)	13.2 (2.09)	12.4 (3.26)
<b>Median [Min, Max]</b>	13.00 [5, 19]	13.00 [7, 19]	13.00 [6, 18]	13.00 [6, 18]	13.00 [9, 18]	13.00 [5, 16]
<b>Panel F: Capacity for loss</b>						
<b>Mean (SD)</b>	4.79 (1.33)	4.81 (1.29)	4.87 (1.33)	4.61 (1.29)	4.60 (1.63)	4.81 (1.57)
<b>Median [Min, Max]</b>	5.00 [1,7]	5.00 [1,7]	5.00 [1,7]	5.00 [1,7]	5.00 [2,7]	5.00 [2,7]
<b>Panel G: Investor experience</b>						
<b>Mean (SD)</b>	19.2 (24.7)	14.1 (18.0)	16.8 (22.7)	27.2 (29.4)	37.0 (37.6)	41.5 (34.0)
<b>Median [Min, Max]</b>	11.8 [0, 100]	9.09 [0, 100]	10.0 [0, 100]	19.2 [0, 100]	26.0 [0, 100]	27.3 [0, 100]
<b>Panel H: Fund ESG policy (%)</b>						
<b>Mean (SD)</b>	31.3 (26.2)	26.8 (23.6)	31.1 (26.5)	36.0 (26.7)	43.0 (31.3)	42.6 (29.5)
<b>Median [Min, Max]</b>	31.3 [0, 100]	28.6 [0, 100]	30.8 [0, 100]	33.3 [0, 100]	37.4 [0, 100]	42.9 [0, 100]
<b>Panel I: Fund ESG leader rating (%)</b>						

**Table 3** presents the summary statistics for 928 clients. Panel H is the average percentage of funds with an ESG policy ranging from 0 to 100 and Panel I is the average percentage of funds with an ESG leader (AA–AAA) rating from 0 to 100. See **Table 1** for additional explanatory notes.

**Table 4**  
Correlation matrix – ESG fund sample.

	Sustainability score	Attitude to risk score	Capacity for loss	Investor experience	Fund ESG policy count
Attitude to risk score	– 0.17 ***				
Capacity for loss	– 0.06	0.32 ***			
Investor experience	– 0.02	0.25 ***	0.07*		
Fund ESG policy count	0.26***	– 0.01	0.05	– 0.06	
Fund ESG rating	0.18***	0.00	0.03	– 0.1**	0.63***

A Spearman's correlation matrix is presented, showing total sustainability and attitude to risk scores, as well as client's capacity for loss, investor experience, ESG policy count and ESG average rating; \*, \*\* and \*\*\* indicate significance at the 5 %, 1 % and 0.1 % levels, respectively.

**Table 5**  
Recommended fund ESG ratings by sustainability profile – percentage of clients in each category.

	AAA	AA	A	BBB	BB	Unrated	Unmatched A (983 clients)	Matched A (618 clients)	Unmatched B (752 clients)	Matched B (849 clients)
<b>Panel A: Gender</b>										
Female (644 clients)	0.3 %	56.5 %	62.4 %	15.2 %	1.1 %	84.9 %	57.8 %	42.2 %	46.4 %	53.6 %
Male (957 clients)	0.3 %	52 %	62.1 %	17.7 %	0.7 %	85.6 %	63.8 %	36.2 %	47.3 %	52.7 %
<b>Panel B: Age</b>										
18–24 (10 clients)	0 %	60 %	40 %	30 %	0 %	60 %	50 %	50 %	40 %	60 %
25–34 (52 clients)	1.9 %	44.2 %	46.2 %	5.8 %	0 %	88.5 %	59.6 %	40.4 %	42.3 %	57.7 %
35–44 (98 clients)	2 %	38.8 %	56.1 %	13.3 %	1 %	50.6 %	62.2 %	37.8 %	40.8 %	59.2 %
45–54 (259 clients)	0.4 %	62.2 %	64.5 %	21.6 %	1.2 %	83.4 %	69.5 %	30.55	54.8 %	45.2 %
55–64 (574 clients)	0 %	52.3 %	63.8 %	15.7 %	0.9 %	86.1 %	60.8 %	39.2 %	45.1 %	54.9 %
65–74 (434 clients)	0 %	52.8 %	59.9 %	18 %	2.9 %	87.3 %	57.6 %	42.4 %	46.3 %	53.7 %
75–84 (140 clients)	0.7 %	64.3 %	70.7 %	15.7 %	2.9 %	83.6 %	62.9 %	37.1 %	52.1 %	47.9 %
85 + (34 clients)	0.3 %	44.1 %	61.8 %	5.9 %	0.9 %	85.3 %	55.9 %	44.1 %	32.4 %	67.6 %
<b>Panel C: Marital status</b>										
Married (699 clients)	0.6 %	62.9 %	72.5 %	19.5 %	1.9 %	83 %	69.1 %	30.9 %	52.8 %	47.2 %
Divorced (53 clients)	0 %	60.4 %	67.9 %	11.3 %	0 %	86.8 %	54.7 %	45.3 %	35.8 %	64.2 %
Civil partnership (10 clients)	0 %	80 %	100 %	30 %	0 %	100 %	70 %	30 %	60 %	40 %
Single (783 clients)	0.1 %	43.8 %	51.9 %	14.4 %	0 %	87.2 %	54.3 %	45.7 %	41.3 %	58.7 %
Widowed (56 clients)	0 %	69.6 %	66.1 %	16.1 %	1.8 %	83.9 %	69.6 %	30.4 %	62.5 %	37.5 %
<b>Panel D: Risk profile</b>										
1 (2 clients)	0 %	50 %	100 %	0 %	0 %	100 %	50 %	50 %	0 %	100 %
2 (16 clients)	0 %	31.3 %	43.8 %	6.3 %	0 %	93.8 %	50 %	50 %	31.2 %	68.8 %
3 (55 clients)	0 %	45.5 %	58.2 %	16.4 %	0 %	83.6 %	49.1 %	50.9 %	36.4 %	63.6 %
4 (223 clients)	0 %	55.2 %	63.2 %	17.5 %	0.4 %	83.9 %	56.1 %	43.9 %	43.9 %	56.1 %
5 (477 clients)	0 %	52.6 %	58.7 %	11.7 %	1.3 %	85.55	58.5 %	41.5 %	44.4 %	55.6 %
6 (468 clients)	0.4 %	54.3 %	64.5 %	18.8 %	0.6 %	87.4 %	63.7 %	36.3 %	49.1 %	50.9 %
7 (267 clients)	0.7 %	56.6 %	64.8 %	19.9 %	0.7 %	82.4 %	66.7 %	33.3 %	50.6 %	49.4 %
8 (75 clients)	1.3 %	54.7 %	68 %	25.3 %	2.7 %	85.6 %	74.7 %	25.3 %	54.7 %	45.3 %
9 (12 clients)	0 %	66.7 %	50 %	8.3 %	0 %	91.7 %	58.3 %	41.7 %	66.7 %	33.3 %
10 (6 clients)	0 %	50 %	33.3 %	16.7 %	0 %	66.7 %	66.7 %	33.3 %	50 %	50 %
<b>Panel E: Sustainability profile (importance)</b>										
Low (543 clients)	0.2 %	49.2 %	62.4 %	17.1 %	1.5 %	87.7 %	71.5 %	28.5 %	49.2 %	50.8 %
Some (652 clients)	0.5 %	55.2 %	63.8 %	16.9 %	0.8 %	82.5 %	74.1 %	25.9 %	55.2 %	44.8 %
Medium (294 clients)	0.3 %	58.5 %	62.2 %	17.7 %	0.3 %	84.7 %	25.9 %	74.1 %	25.9 %	74.1 %
High (73 clients)	0 %	57.5 %	54.8 %	12.3 %	0 %	90.4 %	28.8 %	71.2 %	42.5 %	57.5 %
Very high (39 clients)	0 %	53.8 %	46.2 %	7.7 %	0 %	94.9 %	38.5 %	61.5 %	46.2 %	53.8 %
<b>Panel F: Capacity for loss</b>										
Mean (SD)	14.4 (1.52)	12.8 (2.4)	12.7 (2.4)	12.7 (2.51)	13.8 (2.04)	12.6 (2.47)	12.7 (2.41)	12.5 (2.50)	12.7 (2.45)	12.6 (2.44)
Median [Min, Max]	14 [13, 16]	13 [6, 20]	13 [5, 19]	13 [5, 19]	13.5 [10, 18]	13 [5, 20]	13 [6, 20]	13 [5, 18]	13 [5, 20]	13 [5, 18]
<b>Panel G: Investing experience</b>										
Mean (SD)	5 (1.87)	4.7 (1.38)	4.79 (1.33)	4.82 (1.36)	4 (1.41)	4.77 (1.33)	4.76 (1.33)	4.66 (1.35)	4.71 (1.36)	4.73 (1.33)
Median [Min, Max]	5 [1, 7]	5 [1, 7]	5 [1, 7]	5 [1, 7]	5 [1, 7]	5 [1, 7]	5 [1, 7]	5 [1, 7]	5 [1, 7]	5 [1, 7]

Table 5 provides a summary of percentage of clients (1601 total) who were recommended funds rated from AAA to BB (as no B-CCC were recommended) as well as funds that were unrated in terms of ESG, in relation to the client's, gender (panel A), age (panel B), marital status (panel C), risk profile (panel D), sustainability profile (panel E), capacity for loss (panel F) and investing experience (panel G). In addition, unmatched A and matched A refers to a matching process explained in Table 6.

**Table 6**  
Description of matching process.

		Matched	Unmatched
<b>Method A</b>	Low & Some importance	All funds are unrated	At least <b>one</b> fund is rated
	Medium, High & Very high importance	At least <b>one</b> fund is rated	All funds are unrated
<b>Method B</b>	Low & Some importance	All funds are unrated or have an A, BBB, BB (average) rating	At least <b>one</b> fund is rated AA or AAA (leader)
	Medium importance	At least <b>one</b> fund is rated	All funds are unrated
	High & Very high importance	At least <b>one</b> fund is rated AA or AAA (leader)	No funds are rated AA or AAA (leader)

**Table 7**  
Regression models for sustainability profile.

	Dependent variable: Sustainability profile (low to very high importance)			
	(1)	(2)	(3)	(4)
Client Gender = Male	– 0.605*** (0.029)	– 0.602*** (0.029)	– 0.556*** (0.029)	– 0.557*** (0.029)
Age	0.005 (0.005)	0.002 (0.005)	– 0.001 (0.005)	– 0.001 (0.005)
Age squared	0.0000003 (0.00004)	0.000023 (0.00004)	0.000027 (0.00004)	0.000028 (0.00004)
Divorced	– 0.136 (0.079)	– 0.144 (0.079)	– 0.131 (0.079)	– 0.131 (0.079)
Civil partnership	0.512* (0.213)	0.508* (0.212)	0.529* (0.212)	0.530* (0.212)
Single	0.067* (0.029)	0.065* (0.029)	0.059* (0.029)	0.060* (0.029)
Widow	– 0.036 (0.086)	– 0.026 (0.086)	– 0.039 (0.086)	– 0.039 (0.086)
Capacity for loss		– 0.021*** (0.006)	– 0.006 (0.006)	– 0.006 (0.006)
Risk profile			– 0.103*** (0.012)	– 0.105*** (0.013)
Investor experience				0.004 (0.011)
Observations	17,490	17,490	17,490	17,490
R <sup>2</sup>	0.030	0.030	0.035	0.035
chi <sup>2</sup>	485.478*** (df = 7)	498.814*** (df = 8)	570.877*** (df = 9)	571.005*** (df = 10)

Note: **Table 7** reports the results of logit regressions estimated with robust standard errors in parentheses. Sustainability profile is measured on a scale from 1 (low importance) to 5 (very high importance). Gender is a 0–1 variable which equals one if the respondent is male and zero if female. Age and age squared are used as variables. Marital status is measured in five categories, and married is the reference level. Capacity for loss is measured on a scale from 5 to 20. Risk profile is measured on a scale from 1 to 10. Finally, investment experience is measured on a scale of 1–7. \*, \*\* and \*\*\* indicate significance at the 5 %, 1 % and 0.1 % levels, respectively.

Overall, we find support for H7a considering the proportion of recommended funds with an ESG policy. The same results are found in **Table 8** after the addition of capacity for loss (model (3)), attitude to risk (model (4)) and investor experience (model (5)). These variables do not have a significant impact on the recommended funds in terms of containing an ESG policy or not. The parameter estimates remain negative and statistically significant for gender and marital status, women on average have 3 % more of their funds containing an ESG policy than men, which is significant given that the mean is 19 %, with married couples having an average of 5 % more than single clients.

We further observe a gradual increase in the strength of the

**Table 8**  
Regression models for recommended fund ESG policy percentage.

	Dependent variable: Fund ESG policy percentage				
	(1)	(2)	(3)	(4)	(5)
Male	– (1.649)	– 3.345* (1.615)	– 3.337* (1.613)	– 3.534* (1.632)	– 3.292* (1.639)
Age	– 0.646 (0.388)	– 0.667 (0.375)	– 0.565 (0.379)	– 0.543 (0.380)	– 0.464 (0.383)
Age squared	0.006 (0.003)	0.006* (0.003)	0.006 (0.003)	0.006 (0.003)	0.005 (0.003)
Divorced	2.227 (4.134)	– 0.078 (4.003)	0.040 (3.998)	– 0.046 (4.001)	– 0.032 (3.998)
Civil partnership	16.945	12.857	12.584	12.810	11.793
Single	(10.075)	(9.878)	(9.867)	(9.873)	(9.890)
Widow	– (4.059)	– 5.333** (1.741)	– 5.312** (1.684)	– 5.197** (1.682)	– 5.095** (1.689)
Sustainability profile = Some Importance	2.274	2.443	2.480	2.589	
Sustainability profile = Medium Importance	(1.810)	(1.811)	(1.811)	(1.812)	
Sustainability profile = High Importance	12.270***	12.356***	12.485***	12.405***	
Sustainability profile = Very High Importance	(2.281)	(2.278)	(2.285)	(2.284)	
Capacity for loss	22.268***	22.153***	22.287***	22.235***	
Risk profile	(3.998)	(3.993)	(3.998)	(3.995)	
Investor experience	25.772***	26.141***	26.240***	26.515***	
Constant	39.474** (11.991)	34.885** (11.638)	23.786 (13.146)	20.551 (13.756)	20.246 (13.749)
Observations	928	928	928	928	928
R <sup>2</sup>	0.032	0.101	0.104	0.105	0.107
Adjusted R <sup>2</sup>	0.025	0.090	0.093	0.092	0.093
Residual Std. Error	24.436	23.601	23.571	23.576	23.560
F Statistic	4.359*** (df = 7; 920)	9.363*** (df = 11; 916)	8.877*** (df = 12; 915)	8.240*** (df = 13; 914)	7.821*** (df = 14; 913)

Note: **Table 8** reports the results of OLS regressions estimated with robust standard errors in parentheses. The dependent variable, ESG policy percentage ranges from 0 to 100. Gender is a binary variable equalling one if the respondent is male and zero if female. Age and age squared are used as explanatory variables. Marital status is measured in five categories, and married is the reference level. The sustainability profile has five categories ranging from low to very high importance where “low” is the reference level. Capacity for loss is measured on a scale from 5 to 20. Risk profile is measured on a scale from 1 to 10. Finally, investment experience is measured on a scale of 1–7. \*, \*\* and \*\*\* indicate significance at the 5 %, 1 % and 0.1 % levels, respectively.

relationship between sustainability preferences and the percentage of funds with an ESG policy as the importance of sustainable investments strengthens from medium to very high. Clients who view sustainability to be very important have on average 26 % more funds with an ESG policy than those who view it as of low importance. These results are reassuring as consumers with a stronger desire for sustainable investments are being recommended investments where policies include

ESG criteria, shedding light on how their investments are aligned with their preferences.

**Table 9** presents the results from regression models to explain the variation in the percentage of funds recommended with an ESG leader rating. Five separate specifications are estimated, in columns labelled (1)–(5), with percentage of ESG leader ratings (0–100) as the dependent variable and the same set of explanatory variables as the corresponding columns in **Table 8**. Model (1) shows that men have a lower percentage of funds with ESG leader ratings than women, which is in-line with the differences we observe in sustainability preferences. Model (2) includes clients' sustainability profiles, and here the effect of gender is no longer significant, but those who view sustainability as of medium, high, or very high importance are recommended a higher percentage of ESG

leader funds than those who view it as of low importance, providing further support for H7a. The same results are found after the addition of capacity for loss (model (3)) and attitude to risk (model (4)), but we also find those who view sustainability as of some importance are recommended a significantly higher percentage funds with ESG leader ratings than those who view it as of low importance.

The parameter estimates in model (5) are significant for the sustainability profile as in **Table 8**, but here we also find an effect for those who view sustainability as of some importance, with an average of 4 % more leader funds being recommended than for those who view sustainability as of low importance, up to an average of 15 % more for those who view sustainability as of very high importance. As with the ESG policy results, this is important as we can conclude that those who are more interested in 'doing good' through their investments are being recommended more ESG leader funds. In model (5), both attitude to risk and investor experience are significant predictors. We observe that for every increase in risk profile (1–10) there is on average a 1.5 % increase in funds being recommended with an ESG leader rating, and therefore more risk tolerant clients are recommended a higher percentage of ESG leader funds despite the results highlighting that these clients are less interested in sustainability. This may suggest that such funds are awarded a higher risk profile and are therefore suitable for these clients despite their sustainability preferences, or that advisors are recommending highly rated ESG products even if investment returns are a much greater priority. Those with greater experience are, however, recommended a lower percentage of ESG leader funds, as every unit increase in experience (1–7) results in 2 % fewer ESG leader funds being recommended, which provides support for H6.

#### 4.3. Are clients' sustainability preferences met?

After running a matching process, the results from which are summarised in the right-hand columns of **Table 5** (methods A and B), **Table 10** presents the findings from estimating ordered logit models to explain the variation in clients being matched (1) or unmatched (0) to funds based on ESG ratings. Model (1) refers to method A and model (2) to method B; explanations of this process can be found in **Section 3.3**. In both models, all demographic variables (gender, age, age squared and marital status) are included plus the client's sustainability profile, capacity for loss, attitude to risk and investor experience scores.

The results from using matching method A show that single clients are recommended more appropriate funds given their sustainability preferences than married clients, and those who view sustainability as of medium to very high importance are also more likely to hold funds that match these desires. However, clients who are more risk tolerant are more likely to invest in funds that are less in-line with their preferences (i.e., they are more likely to be 'unmatched'). This points strongly in the direction that advisors are inclined to encourage investors towards highly ESG-rated products even if these clients do not have particularly strong views that responsible investing is important to them, which provides evidence against hypothesis H7b.

With matching method B, both single and divorced clients are significantly more likely to purchase funds that are matched with their preferences than married clients. Here, those who view sustainability as of some importance are significantly more likely to buy funds that do not match their sustainability preferences than those who view it as being of low importance, but those who view sustainability as of medium importance are significantly more likely to be recommended funds that match these wishes. As with method A, those who are more risk tolerant are significantly less likely to purchase commensurate funds relative to those who are less willing to take financial risk.

Using both matching methods we observe that those who view sustainability as of medium importance are matched with funds aligned to their preferences with the average marginal effects showing that there is on average a 44 % (method A) or 23 % (method B) increase in the probability of being recommended matched funds for those who view

**Table 9**  
Regression models for recommended fund ESG leader percentage.

	Dependent variable: Fund ESG leader percentage				
	(1)	(2)	(3)	(4)	(5)
Client Gender = Male	– 4.007*	– 2.609	– 2.604	– 2.963	– 2.429
	(1.764)	(1.771)	(1.771)	(1.791)	(1.791)
Age	– 0.490	– 0.495	– 0.433	– 0.393	– 0.218
	(0.415)	(0.411)	(0.416)	(0.417)	(0.419)
Age squared	0.005	0.005	0.004	0.004	0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Divorced	1.148	– 0.226	– 0.154	– 0.311	– 0.280
	(4.422)	(4.389)	(4.389)	(4.389)	(4.370)
Civil partnership	8.756	7.159	6.992	7.404	5.161
	(10.778)	(10.831)	(10.832)	(10.832)	(10.810)
Single	– 0.680	– 1.031	– 1.018	– 0.807	– 0.582
	(1.862)	(1.846)	(1.846)	(1.852)	(1.846)
Widow	1.521	2.080	1.753	1.752	1.281
	(4.343)	(4.302)	(4.314)	(4.312)	(4.296)
Sustainability profile = Some		3.834	3.937*	4.005*	4.245*
Importance Sustainability profile = Medium		(1.985)	(1.987)	(1.987)	(1.980)
Importance Sustainability profile = High		8.550***	8.602***	8.839***	8.662***
Importance Sustainability profile = Very High		(2.500)	(2.501)	(2.506)	(2.496)
Capacity for loss		15.454***	15.384***	15.629***	15.513***
Risk profile		(4.383)	(4.384)	(4.386)	(4.367)
Investor experience		14.463*	14.688*	14.868*	15.475**
Constant	45.222***	41.037**	34.265*	28.371+	27.700
	(12.828)	(12.760)	(14.431)	(15.092)	(15.027)
Observations	928	928	928	928	928
R <sup>2</sup>	0.012	0.036	0.037	0.039	0.049
Adjusted R <sup>2</sup>	0.004	0.025	0.025	0.025	0.034
Residual Std. Error	26.142 (df = 920)	25.876 (df = 916)	25.876 (df = 915)	25.865 (df = 914)	25.751 (df = 913)
F Statistic	1.576 (df = 7; 920)	3.119*** (df = 11; 916)	2.944*** (df = 12; 915)	2.855*** (df = 13; 914)	3.325*** (df = 14; 913)

Note: **Table 9** reports the results of OLS regressions estimated with robust standard errors in parentheses. The dependent variable, fund ESG leader percentage ranges from 0 to 100. See **Table 8** for additional explanatory notes.

**Table 10**

Matched or unmatched portfolios according to sustainability profile.

	Dependent variable: Matched (1) or unmatched (0)	
	Matching Method A	Matching Method B
Client Gender = Male	-0.015 (0.121)	0.073 (0.111)
Age	-0.006 (0.027)	-0.017 (0.025)
Age squared	0.0001 (0.0002)	0.0001 (0.0002)
Client Marital Status = Divorced	0.529 (0.323)	0.721* (0.307)
Client Marital Status = Civil partnership	-0.047 (0.765)	-0.157 (0.665)
Client Marital Status = Single	0.769*** (0.124)	0.481** (0.110)
Client Marital Status = Widow	-0.131 (0.350)	-0.439 (0.307)
Sustainability profile = Some Importance	-0.201 (0.135)	-0.286* (0.120)
Sustainability profile = Medium Importance	1.990*** (0.170)	1.017*** (0.163)
Sustainability profile = High Importance	1.810*** (0.282)	0.206 (0.256)
Sustainability profile = Very High Importance	1.316*** (0.353)	0.043 (0.341)
Capacity for loss	-0.017 (0.026)	0.003 (0.023)
Risk tolerance	-0.127* (0.053)	-0.166*** (0.049)
Investor experience	-0.009 (0.046)	0.064 (0.042)
Constant	-0.263 (0.936)	0.966 (0.870)
Observations	1601	1601
R <sup>2</sup>	0.246	0.095
chi <sup>2</sup> (df = 14)	319.853***	118.830***

Note: Table 10 reports the results of logit regressions estimated with robust standard errors in parentheses. The dependent variable is a binary measure of matched (1) or unmatched (0), dependent on a client's sustainability profile and ESG rating. Method A refers to a matching process dependent on funds being rated or unrated and client's sustainability profile, whereas method B is dependent on the particular rating of funds (AAA-BB, unrated). See Table 6 for additional explanatory notes.

sustainability as of medium importance compared to low importance (method A: AME = 0.44, SE = 0.03, p < 0.001; method B: AME = 0.23, SE = 0.03, p < 0.001). Furthermore, the effect of risk profile remains consistent across both methods. We find that the average marginal effect at each risk level shows that as it increases from 1 to 10 there is on average 2 % (method A) or 4 % (method B) less likelihood at each level that recommended funds match client sustainability preferences (method A: AME = -0.02, SE = 0.01, p < 0.05; method B: AME = -0.04, SE = 0.01, p < 0.001).

## 5. Discussion

The finding that risk tolerance is a key variable in comparison to capacity for loss provides valuable information about the likely driver of sustainability preferences. Specifically, this suggested that it is not the potential wealth-protective characteristics of sustainable investing that motivates retail clients, since our results showed that those with greater interest in sustainability have no less capacity to bear losses should they arise. Rather, the attitude to risk questionnaire employed incorporates emotional as well as cognitive and behavioural items, and it is expectable that preferences for sustainability would capture investors' emotional responses to ESG. This ties in with extant evidence that an

investor's social values (alongside financial aspects and the effect of the financial intermediary) have a bigger impact on their portfolio choice than purely demographic factors, as Diouf et al. (2016) observed from Canadian portfolio data alongside the results of in-depth interviews. They argued that the extent of a person's interest in responsible investing mirrored their social concern more generally, and socially responsible investors tended in general to also have been socially responsible consumers. By contrast, they did not appear to have viewed responsible investing as a way to assuage their guilt for other aspects of their lifestyle that they considered socially or environmentally damaging (Rosen et al., 1991, p.223).

More generally, emotions are important in relation to making financial decisions and taking risk (Breaban & Noussair, 2018; Brooks et al., 2023; Brooks & Williams, 2024; Hillenbrand et al., 2022, 2020) and emotions must therefore also be considered when measuring views on sustainable investing. A recent body of work has investigated the link between emotions and preferences for sustainable investments. For instance, in an experimental study of investors' willingness to pay (WTP) for sustainable investments, Heeb et al. (2023) found that participants who reported a positive emotional state had a higher WTP. Mata-llín-Sáez et al. (2022) suggested that SR investors showed a pattern of behaviour consistent with the disposition effect – they were more likely to sell out from SR funds that had performed well and to stick with funds that had done badly, echoing earlier findings by Bollen (2007). This could be interpreted as further evidence that the choice of sustainable funds was not made as a purely rational, cognitive process and was therefore more susceptible to the influence of emotions.

Investors benefit emotionally when demonstrating that they have acted responsibly for society through their investment decisions and feel compensated by this when accepting that they may have received lower returns (Beal et al., 2005; Glac, 2009). When more in-depth ESG information – including indications of emotional returns and not only financial returns – is provided to investors, they tend to have stronger preferences towards ESG investments (Mervelskemper, 2018). Interestingly, attempts to evoke positive emotions in promotional material have been shown to have been a potential avenue for encouraging sustainable investing. Recent experimental research by Vanwalleghem and Mirowska (2020) finds that by exposing participants to healthy scenes of nature rather than damaged scenes where they are presented with images of what the environment could look like (positive) rather than what needs to be avoided (negative), participants are more inclined to opt for sustainable funds. This finding demonstrates how the emotional benefits of managing ESG risks influences sustainable investing decisions.

It is clear that there is considerable noise in the relationship between sustainability preferences and investment outcomes. Even clients who have very strong pro-sustainability feelings hold funds without an ESG rating and yet many clients for whom sustainability is of no interest hold funds with the highest ESG scores; most clients hold both rated and unrated funds in their portfolios irrespective of their sustainability views. Incorporation of ESG in the mix alongside other considerations means that inevitably there is frequently a need for compromises, as it might not be possible to simultaneously satisfy all an investor's preferences where these conflict regarding the choice of fund(s). In such circumstances, it seems likely that the portfolio implications of risk tolerance and the ability to bear investment losses would be prioritised over sustainability. Financial advisors need to be clear with their clients on this potential trade-off to ensure that investment propositions capture clients' most important criteria even if the 'nice to haves' must be sacrificed.

It was expected that if clients' sustainability preferences were being met, only the sustainability importance scores would have been significant in the ESG fund regressions, but that was not the case. It is, perhaps, troubling that gender, being single and, in some specifications, investment experience, nonetheless remain statistically significant. This suggests that not only do sustainability preferences affect fund sustainability, but also other factors – or, in other words, that sustainability

preferences are more likely to be met for some types of clients than others.

The data analysed were based on client responses to a psychometric questionnaire; however, this is not always the chosen method by advisers to explore views towards sustainable investments. They may ask direct questions to gauge views on sustainability, such as “are you interested in sustainable investments?”, but such an approach could be problematic if, for example, clients do not understand what sustainable investments are. Furthermore, the way in which the question is framed may lead to a high proportion of “yes” responses due to social desirability bias and replying in a way that they believed would be viewed favourably by their advisor. Therefore, the language and tone that advisors adopt could affect decisions, significantly impacting discussions and recommendations. In the UK, since it is not currently mandatory to discuss sustainable options, it is not necessary to provide clients with supporting evidence such as the MSCI ratings discussed above. However, new sustainability disclosure requirements that will be implemented imminently will encourage processes in the UK to be improved with the aim of promoting client-adviser discussions, removing potential biases, increasing transparency, and aligning recommendations with preferences.

The results also pointed to a degree of caution on the part of advisors, with some clients for whom sustainable investing was not of much interest nonetheless holding highly ESG-rated funds, a finding that tied in with other studies finding that, from the fund manager side, responsible investing was becoming the default position. Using a survey of more than 100 portfolio managers, Van Duuren et al. (2016) showed that even non-SRI funds were incorporating a consideration of ESG in their portfolio allocation decision-making, and in that sense, they were becoming *de facto* SRI funds too (see also Alda, 2021). For instance, there was evidence that conventional funds without specific ESG mandates were reluctant to take large positions in ‘controversial’ or ‘socially sensitive’ stocks, such as those producing tobacco or weapons, perhaps to conform with investor expectations or possibly even for fear of reprisals (Borgers et al., 2015).

Many commentators would argue that this is no bad thing, and that, irrespective of how it arises, more responsible investing is to be actively encouraged. However, there is a vital counterargument that socially responsible fund managers will usually be choosing from a smaller pool of firms than conventional asset managers, leading the former’s portfolios to be unbalanced relative to the economy, less well diversified, and more exposed to sector-specific or idiosyncratic risk (Matallín-Sáez et al., 2022). Therefore, there might be costs as well as benefits from investing responsibly, and clients need to be made aware of the existence of such potential trade-offs so that they can make informed choices.

Until recently, SRI had typically been viewed as trending upwards almost monotonically, with an investor base that is motivated by social concerns and not by past portfolio performance. Hence it has been suggested that SRI was immune to the fund flow volatility that beset the conventional side of the market (Benson & Humphrey, 2008). But it is possible that this is changing for retail investors, whose continued support for SRI depends on their collective social consciences weighed alongside other priorities in their lives, unlike professional fund managers with mandates that require them to continue to invest sustainably. D'hondt et al. (2022) employ a panel comprising both demographic information and stock ownership data for a large sample of retail investors in Belgium before and after the 2008 global financial crisis and find that the average ESG ratings of the companies they held fell considerably over the period. Similarly, Döttling and Kim (2022) find that sustainable funds suffered greater outflows than their conventional counterparts during the covid-19 period, and it is not clear whether demand for SRI would continue to hold up in the post-pandemic era of squeezed incomes, or whether retail investors will see it as a dispensable luxury (D'hondt et al., 2022; Döttling & Kim, 2022, p.6). According to the World Economic Forum, political leaders appear to be facing a global backlash against expenditure on ESG-related activities and are rowing

back on their previous environmental commitments as they come to appreciate the financial costs.<sup>6</sup> This, in turn, could lead firms to refocus their resources on core activities and away from CSR (Hartwell & Devinney, 2024). Therefore, although SRI is likely to continue to grow, demand will probably be more cyclical than hitherto, and it will be more important in the future for advisors to ensure that their clients’ sustainability preferences are aligned with their investment propositions. For instance, responsible funds that avoided extractive industries will have missed out completely on the post pandemic boom in this sector, and experienced returns that lagged equity markets as a whole. Such scenarios could lead to extreme client dissatisfaction if they express little interest in ESG, but their money is placed in sustainable funds that then underperform. This paper’s results suggest that this is a potentially common scenario, which should therefore be of concern to both financial advisors and financial market regulators.

## 6. Conclusions

This research examined the sustainability preferences and investment outcomes of a large sample of UK retail investors. Using real-world data arising from meetings between independent financial advisors and their clients, the study showed that investing sustainably was of at least some importance for around two thirds of the latter. The findings of existing research that it was more important to women than men were confirmed. It was also found that those who were single or in a civil partnership considered sustainable investing most relevant for them, although age was not a significant explanatory factor. For the first time in the literature, due to the nature of the questions that advisors ask their clients as part of their statutory duties in the UK, this study was able to separate the effects of risk tolerance from capacity to bear losses on sustainability preferences. It was found that, among these two, it was risk tolerance that had the statistically significant (negative) effect. The study also novelly found evidence of a degree of mismatch between the strength of individual investor preferences for sustainability and the sustainability ratings of the funds they held.

### 6.1. Limitations and suggestions for further research

Naturally, the research in this study had some limitations, largely due to the scope of the data. While it was a significant advantage that the studies used real-world rather than hypothetical survey data, this implied that some relevant variables were not available. For instance, prior literature had indicated that educational attainment and income and wealth levels were relevant predictors of demand for sustainability. To the extent that these were correlated with risk tolerance, omitting them from the models might have resulted in the relationship between sustainability and risk tolerance being mis-measured. Also, since the studies reported here were based purely on a quantitative analysis of secondary data, valuable context and motivation around decisions to purchase sustainable funds (or not) was lost, and therefore this paper was not able to assess the construal level theory directly. Finally, the study did not examine investment horizon, and it is possible that this is positively linked with sustainability preferences.

The study now proposes several related and potentially fruitful directions for further research. It would be highly valuable to follow up the quantitative studies employed here by using interviews with retail investors or non-participant observations of advisor-client interactions to precisely determine the rationale for fund purchases at the time the choices are being made. As might be expected given existing evidence for conventional investments, the way that climate information is presented also has an influence on the extent to which retail investors are inclined or disinclined to undertake SRI. Investors seem to prefer to

<sup>6</sup> <https://www.weforum.org/agenda/2023/01/the-importance-of-esg-sustainable-future-davos-2023/>.

emphasise good social actions among firms rather than screening out companies based on their line of business and funds implementing ESG through an inclusion strategy are perceived as better quality. Does the way that the fund objectives are presented influence the choices investors make? A more recent focus has been on 'impact investing', which aimed to achieve specific societal or environmental changes as a result of the asset purchase, although it is not yet clear whether responsible investors are willing to pay more for the stocks of firms that have greater impact. Is impact investing important to sustainability-driven investors or do they predominantly believe in sector screening out, even though it has become somewhat out-of-fashion among fund managers?

More risk tolerant individuals appeared to be less interested in sustainability, and it was suggested that those with greater psychological distance, for example with climate change, had an abstract view and were therefore less likely to act today and take greater risks. A next step would be to further explore these two risk-taking domains, focusing on a client's perceived psychological distance as both investment horizons and climate change are long-term. The sustainability questionnaire used within this study incorporated questions regarding this concept and so further research into these and both sociodemographic and financial characteristics could be conducted. This would be of particular interest as advisors face the challenge of reducing a client's psychological distance with their financial goals. Connecting them with their future selves, and society more generally, aims to promote sustainable behaviour by reducing investors' psychological distances with climate change.

### CRediT authorship contribution statement

**Chris Brooks:** Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Investigation, Funding acquisition, Conceptualization. **Louis Williams:** Writing – review & editing, Writing – original draft, Validation, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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