

# Reach for the Stars or First Do No Harm?

Aligning Pension Fund Investment Strategies with Consumers' Sustainable Investment Goals

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# Colophon

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# Table of contents

|                                 |    |
|---------------------------------|----|
| Abstract                        | 4  |
| Samenvatting                    | 5  |
| 1. Introduction                 | 6  |
| 2. Theoretical Overview         | 9  |
| 3. Study Design and Methodology | 14 |
| 4. Results                      | 18 |
| 5. Conclusion and Discussion    | 24 |
| References                      | 29 |
| Appendices                      | 33 |

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## Abstract

For many consumers, pension capital is a major personal savings component. Pension funds that manage this capital are shifting from a purely financial to a triple bottom line perspective, and in that context they need to align their investment strategies with heterogeneous consumer preferences. This paper examines how the sustainable investment goals of consumers and the regulatory goal focus shape their preferences for pension fund investment strategies. Building on Goal Theory and Regulatory Focus Theory, we investigate: 1. whether individuals prioritize sustainable or, instead, financial outcomes in their pension investments, 2. whether these goal orientations influence their sensitivity to changes in pension income, and 3. whether promotion- versus prevention-focused sustainability goals differentially predict preferences for inclusion- versus exclusion-based sustainable investment strategies. Using a large-scale choice-based conjoint experiment, combined with detailed survey measures of sustainability goals, we find systematic variation in preferences across goal orientations and regulatory focus. Participants who prioritize sustainability goals exhibit greater acceptance of financial trade-offs, and promotion versus prevention focus predicts divergent preferences for inclusionary versus exclusionary strategies. These findings deepen theoretical understanding of how motivational structures shape sustainable investment preferences in collective pension settings, plus they provide empirical evidence on the heterogeneous foundations of ESG-related investment preferences. These findings also provide more practical guidance, showing that people assign more weight to financial goals than sustainability goals, while valuing the latter as well. On average, people value environmental and social dimensions equally, but the heterogeneity suggests that it is important to act on both. Finally, participants generally have a promotion focus for their sustainability goals and prefer an inclusion strategy. But to obtain broad support among participants, funds should also avoid the most harmful investments. These insights can guide funds in their investment decisions, and those actions should be communicated to their participants to highlight alignment and hopefully to increase engagement.

**Keywords:** sustainable consumer behavior, sustainable investing, pension investment strategies, consumer sustainability goals, consumer investment goals, financial decision-making, marketing finance.

## Samenvatting

Voor veel consumenten vormt pensioenkapitaal een van de grootste bestanddelen van hun persoonlijke vermogen. Pensioenfondsen die dit kapitaal beheren, verschuiven van een puur financieel perspectief naar een *triple bottom line*-perspectief, waarbij economische, sociale en ecologische doelstellingen worden meegewogen. Daarbij moeten zij hun beleggingsstrategieën afstemmen op de heterogene voorkeuren van deelnemers. Dit artikel onderzoekt hoe de duurzaamheidsdoelen van consumenten en hun zelfregulerende focus de voorkeuren voor beleggingsstrategieën van pensioenfondsen beïnvloeden. Voortbouwend op *Goal Theory* en *Regulatory Focus Theory* onderzoeken we: (1) of individuen bij hun pensioenbeleggingen prioriteit geven aan duurzame of aan financiële uitkomsten; (2) of deze doelen hun gevoeligheid voor veranderingen in pensioeninkomen beïnvloeden; en (3) of duurzaamheidsdoelen met een promotiegerichte versus een preventiegerichte focus leiden tot een voorkeur voor duurzame beleggingsstrategieën die gebaseerd zijn op inclusie of juist op uitsluiting.

De meerderheid van de deelnemers vindt financiële doelen belangrijker dan duurzaamheidsdoelen, hoewel een substantieel deel toch duurzaamheid vooropstelt. Mensen met een sterkere focus op duurzaamheid zijn meer bereid een lager pensioeninkomen te accepteren wanneer dit leidt tot betere maatschappelijke en/of milieubevorderende uitkomsten. Sociale en ecologische duurzaamheid worden gemiddeld ongeveer gelijk gewaardeerd. De meeste deelnemers hebben een promotiegerichte duurzaamheidsfocus en geven daarom de voorkeur aan inclusiestrategieën, terwijl voor deelnemers met een preventiegerichte focus uitsluitingsstrategieën relatief aantrekkelijker zijn.

Deze bevindingen laten zien dat voorkeuren voor duurzaam pensioenbeleggen niet uniform zijn, maar sterk samenhangen met de onderliggende doelen en motivaties van deelnemers. Voor pensioenfondsen betekent dit dat beleggingsbeleid niet uitsluitend vanuit financieel rendement of een enkel duurzaamheidsperspectief kan worden vormgegeven. Een combinatie van inclusie- en uitsluitingsstrategieën lijkt het meeste draagvlak te bieden, waarbij zowel positieve duurzame impact wordt nagestreefd als de meest schadelijke beleggingen worden vermeden. Daarnaast onderstrepen de resultaten het belang van duidelijke communicatie over de gekozen duurzaamheidsaanpak, zodat deelnemers beter kunnen herkennen hoe het beleggingsbeleid van hun pensioenfonds aansluit bij hun voorkeuren en waarden.

## 1. Introduction

Pension funds are among the largest institutional investors worldwide, and the ways in which these funds allocate capital have far-reaching implications for financial returns, societal welfare, and environmental sustainability (Mitchell & Utkus 2022; OECD 2024). Since many pension funds increasingly integrate environmental, social, and governance (ESG) criteria into their investment processes (Barko, Cremers, & Renneboog 2022; Filippini et al. 2024), it is crucial that participants' preferences for sustainable investment strategies are well understood and that these preferences are incorporated into collective investment decisions. Unlike individual retirement accounts, where consumers personally decide on their portfolio allocations, participants in collective pension plans rely on trustees to take fiduciary responsibility to reflect the heterogeneous interests and goals of a diverse participant base. Thus, understanding how individuals trade off financial and sustainability objectives has become an important research topic at the intersection of behavioral finance, consumer psychology, and sustainable investing to improve consumer welfare.

Building on standard preference-based welfare economics, we define consumer welfare improvements as outcomes that better align with the stated preferences of individuals. In the pension context, this means matching fund investment strategies to participants' preferences in terms of the dual objectives of financial security and sustainability impact. Identifying heterogeneity in the way individuals prioritize and trade off these objectives is therefore essential for pension funds as they seek to maximize participant welfare. Specifically, we measure the willingness of consumers to accept lower financial returns for different sustainable investment strategies. These willingness-to-accept estimates reveal the trade-offs that participants are willing to make, and that in turn allows pension funds to identify which investment configurations would maximize welfare (defined as preference alignment) for heterogeneous participant populations.

Prior research on sustainable investing generally emphasizes the role of ethical values, demographic characteristics, or beliefs about financial performance (Apostolakis et al. 2018; Hartzmark & Sussman 2019; Riedl & Smeets 2017). Although this research identifies systematic variation in interest in ESG investments, it offers less insight into the underlying motivational structures that shape these preferences. Behavioral decision-making research suggests that consumers differ not only in what they aim to achieve but also in how they pursue these goals (Higgins 1998). Goal Theory distinguishes between the focal goals of individuals (such as financial security, social impact, or environmental stewardship), while Regulatory Focus Theory differentiates between promotion orientation and prevention orientation (Avnet & Higgins 2006; Crowe & Higgins 1997). Despite extensive application of these frameworks in consumer behavior and decision-making, their joint influence on sustainability-related pension investment preferences remains underexplored.

As to the types of sustainable investments, we focus on Elkington's Triple Bottom Line framework (Elkington 1994, 1997). This framework introduces 3 Ps, namely People, Planet and Profit. Profit clearly aligns with the financial goals of participants, while People and Planet comprise two important dimensions of sustainability goals.

In this paper, we investigate how consumers' sustainable pension investment goals shape their preferences for collective investment strategies. We distinguish between three goal components: (i) the relative importance of sustainability versus financial objectives, (ii) preferences for sustainability outcomes targeting People versus Planet, and (iii) the regulatory orientation of individuals with respect to achieving sustainable outcomes. We theorize that these goal structures guide the trade-offs by consumers along two dimensions. First, individuals face a trade-off between financial outcomes (expected pension income) and sustainability benefits, where pursuing sustainability objectives may require accepting a lower expected return. Second, conditional on prioritizing sustainability, individuals choose between alternative sustainable investment strategies. In particular, participants will have preferences for People- versus Planet-directed investments. Moreover, we propose that promotion-focused sustainability goals align more strongly with inclusion strategies that actively allocate capital towards top-performing companies, whereas prevention-focused sustainability goals align more strongly with exclusion strategies that screen out firms with poor sustainability records.

To test these propositions, we conducted a large-scale choice-based conjoint experiment among pension plan participants. This approach enables us to identify the relative importance that participants assign to People- versus Planet-oriented sustainability strategies, financial risk-return profiles, and changes in projected pension income, while allowing for independent variation between these attributes. By combining conjoint choices with pre-choice survey measures of sustainability goals, we examine how goal content and regulatory orientation jointly moderate preferences for sustainable pension investment strategies.

Overall, we find that individuals prefer investment strategies that overweight firms that perform well on ESG dimensions, relative to strategies that exclude firms that perform poorly. We also identify systematic heterogeneity in participants' preferences that arises from both goal content and regulatory focus, thereby advancing our theoretical understanding of the motivational foundations of sustainable investing. This paper contributes to emerging behavioral research on sustainability-oriented financial decision-making, and it broadens the conceptual lens through which sustainable pension investing is understood. From a practical perspective, understanding these preference structures enables pension funds to improve consumer welfare by better aligning investment strategies with the diverse goals and regulatory orientations of their participant base. This benefit can

only be achieved when these actions are properly communicated to participants, preferably in alignment with the goal orientations of the (individual) participant.

The remainder of this paper proceeds as follows. Section 2 reviews theoretical perspectives on sustainable investing and sustainable investment goals. Section 3 describes our study design, including the conjoint experiment and measurement of sustainability goals. Section 4 reports the empirical results, including heterogeneity analyses. Section 5 discusses the theoretical implications and limitations of our findings and identifies directions for future research.

## 2. Theoretical Overview

### 2.1 Sustainable Investing by Pension Funds

In recent years, sustainable investing has gained increasing prominence worldwide in the operations of many pension funds, driven by the integration of Environmental, Social, and Governance (ESG) criteria, which seek to harmonize financial objectives with broader societal and environmental imperatives (Bauer et al. 2021). Regulatory initiatives, such as the EU's Sustainable Finance Disclosure Regulation, have catalyzed this trend further by requiring greater transparency and encouraging responsible investment practices aimed at advancing societal welfare (Heeb et al. 2023). These developments underscore the evolving relationship between the fiduciary obligations of pension funds and their adoption of sustainable investment strategies. By embedding sustainability principles into investment decisions, pension funds are also better equipped to address long-term risks, including those stemming from climate change and corporate governance challenges (Engler, Gutsche, and Smeets 2024). The incorporation of sustainability criteria also aligns the financial security of beneficiaries with the preservation of the world they will retire into (Edmans, Gosling, and Jenter 2024). Thus, the motivation of pension funds behind sustainability in investments can be attributed to both financial incentives and non-financial considerations (Starks 2023). Importantly, while many institutional investors expect sustainable investments to perform comparably to conventional ones, some investors are also willing to accept lower financial returns in light of the perceived greater ethical value of sustainable investments (Whelan et al. 2024). For some pension funds, sustainable investing also emerges as a way to meet their fiduciary commitments while simultaneously honoring the ethical and social preferences of their members (Riedl and Smeets 2017).

### 2.2 Sustainable Investment Strategies

To align investment portfolios with sustainability criteria, institutional investors typically apply either an exclusion or an inclusion investment strategy (Bauer, Dong, and Jiao 2025; Capelle-Blancard and Monjon 2014; Renneboog, Ter Horst, and Zhang 2008). SRI has experienced an explosive growth around the world reflecting the increasing awareness of investors to social, environmental, ethical and corporate governance issues. We argue that there are significant opportunities for future research on the increasingly important area of SRI. A number of questions are reviewed in this paper on the causes and the shareholder-value impact of corporate social responsibility (CSR). Exclusion strategies, also referred to as "negative screening," involve the deliberate avoidance of companies or industries that engage in practices deemed harmful to society or the environment (Dimson et al. 2020; Hong and Kacperczyk 2009). For example, an exclusion strategy might exclude companies involved in fossil fuels, tobacco, or weapons manufacturing from an investment portfolio.

Inclusion strategies, also known as “positive screening,” focus, on the other hand, on actively selecting companies that contribute positively to societal and environmental goals. This approach seeks to invest in businesses that promote sustainability, social justice, or good governance, with the aim of generating both financial returns and positive impact. These strategies emphasize seeking out opportunities to contribute to long-term societal and environmental benefits. While both exclusion and inclusion strategies aim to integrate sustainability considerations into investment decisions, they differ fundamentally in their approach: exclusion strategies focus on eliminating harmful firms, while inclusion strategies emphasize including beneficial firms.

In terms of financial returns, sustainable investment strategies generally follow traditional investment approaches and can be broadly categorized based on their risk-return profiles ranging from defensive to balanced and aggressive. Defensive strategies are characterized by a low level of risk-taking, often involving investments in low-volatility assets such as government bonds, high-quality corporate bonds, and money market instruments. These strategies are suited for consumers with a low risk tolerance and a preference for capital preservation over growth. They typically aim to protect the principal investment and to provide steady, though modest, returns. Balanced strategies, on the other hand, aim to strike a middle ground between growth and stability. These strategies typically involve a mix of equities and fixed-income securities, providing a combination of capital appreciation and income generation. Such strategies are a good match for consumers who seek moderate growth while managing risk, as they offer a more diversified portfolio that can withstand market fluctuations. Aggressive strategies, finally, are designed to capitalize on growth opportunities and to maximize returns over the long term. These strategies typically involve investing in high-growth sectors or companies with strong potential for capital appreciation, such as technology or emerging markets. Aggressive strategies are well-suited for consumers with a high-risk tolerance and a long investment horizon, as they prioritize growth over stability and can cope better with market volatility. Summarizing, the different financial strategies reflect alternative approaches to balancing risk and return, catering to the diverse preferences of different pension plan participants.

### **2.3 Consumers’ Sustainable Investment Goals**

Consumers’ goals impact the choices that they make in a wide variety of contexts and situations (Austin and Vancouver 1996; Fishbach and Ferguson 2007; Weber and Johnson 2009). We distinguish between two main theoretical characteristics of consumer goals, to analyze the impact of consumer sustainable pension investment goals on their pension investment strategy preferences. First, consumer goals typically reflect desirable focal outcomes that consumers wish to achieve (Austin and Vancouver 1996; Bagozzi and Dholakia 1999). In other words, goals are directive and guide the decisions consumers

make towards their desired end-states. Second, the motives of consumers for achieving a certain goal can vary. In particular, we propose that consumers' dominant regulatory orientation toward a sustainable investment goal can vary: some consumers may primarily have a prevention focus (driven by the wish to avoid a negative outcome), while others may primarily have a promotion focus (driven by the wish to achieve a positive outcome) in terms of why they wish to achieve their focal goal (Avnet and Higgins 2006; Crowe and Higgins 1997; Higgins 1998). We now theorize how each of these two aspects of the sustainability goals of consumers can impact their pension investment strategy preferences.

### **Focal Pension Investment Goals of Consumers**

In terms of pension investments, the focal goals of consumers are tied to the outcomes that these investments can help them achieve. Consumers often have multiple goals that require trade-offs between alternatives and therefore prioritizing certain goals over others (Dellaert et al. 2018; Kruglanski et al. 2015; Swait, Argo, and Li 2018). We propose that, in the context of sustainable pension investments, these trade-offs involve prioritizing either sustainable outcome goals or financial goals. Once individuals have prioritized their goals, they can align their decisions to these goals. The activated goals drive their preferences for products or product features that help them reach their goals.

Looking at consumer preferences for pension investment outcomes that result from their goals, emerging research sheds light on how consumers view the relative importance of social and environmental goals versus financial goals. For example, Engler et al. (2024) find that pension participants often favor investment funds that emphasize positive social and environmental impacts, even if this emphasis implies lower a financial return or higher investment fees. Riedl and Smeets (2017) observe that socially responsible investors sometimes expect and accept lower returns on sustainable investments, and that they still hold onto such assets due to a mix of social preferences and signaling motives. This finding aligns with results reported by Hartzmark and Sussman (2019), who find that investors who choose sustainable funds do so under the belief that they fulfill a prosocial function that goes beyond financial returns. Finally, Baker, Egan and Sarkar (2022) find that pension participants prefer investments that contribute positively to society and the environment, even if doing so may affect their financial returns. However, research also shows that not all consumer investors prioritize sustainability goals. Degryse et al. (2023) identify two distinct groups of consumer investors – socially oriented and profit oriented – based on their strongest investment preference component, reflecting the goals that are most strongly activated: what products they prefer reflects the goals they want to achieve.

We propose that the different goals of consumers represent an important driver of the heterogeneity in consumer pension investment outcome preferences. In particular, we theorize that, depending on consumers' focal investment goal, their preference for specific

pension investment strategies will differ (see Figure 1 for a visual representation). We anticipate that consumers who focus more strongly on sustainability goals for their pension investments (compared to a financial goal) will be more likely to prefer investment strategies that target a greater sustainability impact. Moreover, because focal goals tend to suppress competing goals (Kruglanski et al. 2015), we also expect that consumers who focus more strongly on sustainability outcome goals will be less sensitive to financial outcome changes in general. Therefore, we predict that the willingness of these consumers to accept a lower pension income will be higher, compared to consumers with a primary focus on financial returns, even when the pension income change is independent of the fund's investment strategy.

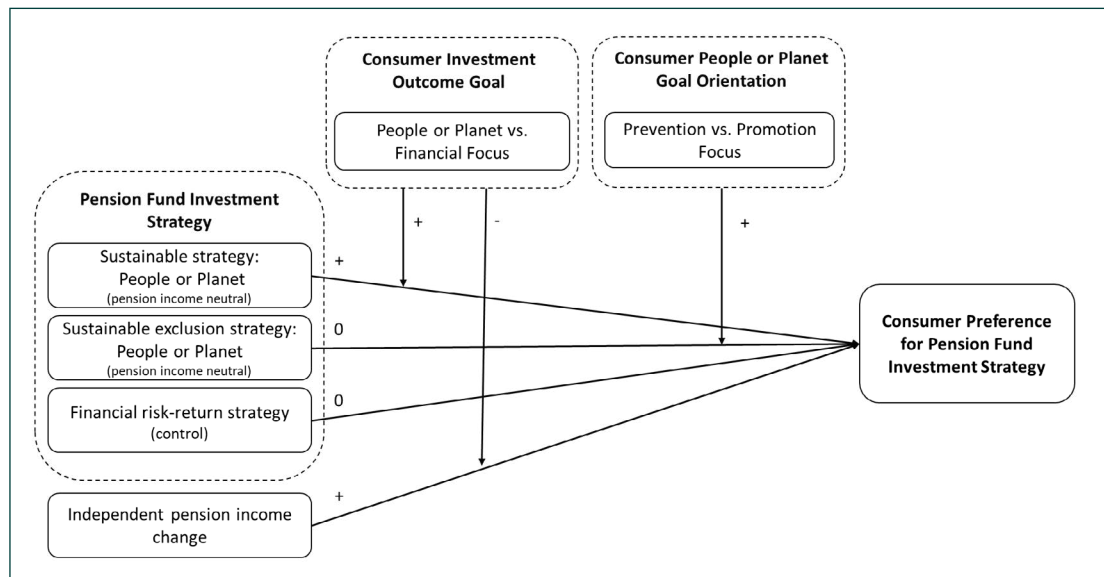
### **Prevention versus Promotion Focus in the Sustainable Pension Investment Goals of Consumers**

Apart from heterogeneity in the sustainable outcome goal focus of consumers, they may also be heterogeneous in their regulatory orientation towards these goals. Regulatory focus theory posits that individuals pursue goals through two distinct self-regulatory orientations: promotion focus versus prevention focus (Crowe and Higgins 1997; Higgins 1998; Liberman et al. 1999). A promotion focus emphasizes aspirations, growth, and achieving positive outcomes. It highlights gains and opportunities, and the desire to achieve certain ideals and to fulfill hopes. A prevention focus, on the other hand, emphasizes safety, responsibility, and avoiding negative outcomes. It highlights losses and threats and the desire to avoid negative outcomes and ensure security (Shah, Higgins, and Friedman 1998). Although consumers may hold both types of regulatory orientations simultaneously, their relative strength may differ depending on context (Florack, Keller, and Palcu 2013). For example, differences in the primary regulatory focus of consumers impact their financial investment decisions in the context of financial risk taking (Ewe et al. 2018; Florack and Hartmann 2007; Zhou and Pham 2004).

We propose that consumers may also differ in terms of their emphasis on prevention versus promotion focus with respect to the sustainable outcomes of investments. Previous research on the sustainable investing preferences of consumers has addressed the impact of demographic factors, ethical values, or financial motivations (Hartzmark and Sussman 2019; Riedl and Smeets 2017). We theorize that the primary regulatory focus of individuals in their sustainability goals, more specifically their goals with respect to people (social) and planet (environmental) investment outcomes, can also provide meaningful insights into sustainable investment behavior. We anticipate that for the same positive goal outcome (e.g., a greater social sustainable impact), consumers who primarily have a prevention-focused goal orientation will evaluate the outcome from the perspective that it helps them avoid a negative unattractive outcome. On the other hand, consumers who primarily have a promotion-focused goal orientation will evaluate this outcome from the perspective

that it provides them with a more positive desirable result (Higgins 2002). Therefore, we propose that if a consumer's sustainable goal orientation is mainly prevention-focused, that consumer will emphasize having a greater sustainability impact that avoids harming people and/or planet. On the other hand, if a consumer's sustainable goal orientation is mainly promotion-focused, that consumer will emphasize having a greater sustainability impact, to improve the conditions of people and/or planet.

**Figure 1.** The impact of consumers' sustainable pension investment goals on their preferences for investment strategies



When we apply the differences in primary regulatory goal focus to pension fund investment strategies, our theorizing is as follows. Consumers who are primarily prevention-focused in their sustainability goals are motivated by safety, responsibility, and a desire to avoid negative outcomes, and they will prefer strategies that minimize risk exposure and prevent harm ("first do no harm"). Therefore, exclusion strategies applied to investments with a poor sustainability outcome performance are likely to resonate well with this group. Conversely, consumers who are primarily promotion-focused in their sustainability goals are driven by aspirations and a desire to achieve positive change; they will be drawn to investment strategies that they perceive as actively contributing to societal and environmental progress ("reach for the stars"). Strategies that align well with this preference are inclusionary in nature and favor investments in companies with a strong sustainability outcome performance. It is important to keep in mind that, normatively, both exclusion and inclusion strategies can achieve a greater sustainability outcome.

### 3. Study Design and Methodology

To test the proposed impacts, we conducted a choice-based conjoint experiment combined with survey questions. The choice-based conjoint experiment presented participants with realistic hypothetical pension fund investment strategy choices. This experimental approach allows us to investigate how the sustainable pension investment goals of investors affect their preferences for different pension investment strategies in a tightly controlled but also realistic setting. It also allows us to overcome the lack of revealed preference data, as currently most pension plan participants cannot select their fund's investment strategy. Individuals who were pension plan participants but not yet retired were sampled for participation. Thus, the study represents a so-called framed field experiment with realistic hypothetical choices made by participants from a relevant population (Harrison and List 2004). Besides the choices they made, participants were also asked survey questions about their sustainable investment goals and several personal characteristics.

#### 3.1 Choice-Based Conjoint Analysis

The choice-based conjoint analysis was designed to elicit the trade-offs that participants make between attributes that define the sustainable investment strategies of pension funds, their investment risk-return strategies, and changes in projected pension income. Conjoint choice analysis is particularly suited to capture the relative importance of the various pension investment attributes, as attribute levels can be varied independently, overcoming possible confounding effects that occur in practice in investment markets or participants' beliefs with regard to sustainable investment strategies, financial risks and returns, and pension income. We selected the attributes in the choice-based conjoint analysis based on both prior academic research on sustainable investment preferences (Hartzmark and Sussman, 2019; Riedl and Smeets, 2017) and current industry practice as reflected in sustainable investment product disclosures and sustainable fund classifications (Cremasco and Boni 2024; Koellner et al. 2005). We also consulted with two industry experts to ensure that the selected attributes were both relevant and practically applicable.

The following four attributes were used in the study (see Table 1): a sustainable investment strategy for the people component, a sustainable investment strategy for the planet component, a financial investment strategy component, and a separate change in net monthly pension income. The people and planet attributes define to what extent the pension fund investment strategy addressed social and environmental impacts respectively. These two strategies took on one of three levels: *Neutral*, with no attention being paid to the sustainable impact component in the investment strategy, *Exclusion*, an investment strategy which excludes the 25% worst-performing companies from the investment portfolio, or *Inclusion*, an investment strategy where more capital is invested in the 25% best-

performing companies in the portfolio.<sup>1</sup> The financial investment strategy attribute defined the investment portfolio's financial risk-return profile. This attribute also had three levels: *Defensive*, an investment strategy with lower investment risks and correspondingly lower expected returns; *Balanced*, an investment strategy with a medium level of investment risk and expected returns; and *Aggressive*, an investment strategy with higher investment risk and expected returns.

The fourth attribute was an independent, separately varied, net monthly change in pension income (-1%, -2%, or -3%). Participants were informed that this component represented a separate fund management cost component, which could vary between fund strategies. For each option, the value of this income change component was calculated by multiplying the participant's self-reported expected net monthly pension income by the income change percentage prescribed by the experimental design. The resulting value was rounded to the nearest 10 euros and displayed in the choice set. If a participant did not know his or her expected pension income, a default income level of €1,250 was used.

Following explanation of the attributes, participants completed two attention check questions to ensure they understood the attributes and levels correctly. Participants who failed the attention check were shown the description of each strategy once more. They were instructed to read the descriptions carefully before proceeding with the remainder of the study.<sup>2</sup> In the choice-based conjoint experiment itself, participants were asked to choose between two hypothetical investment strategies in ten choice tasks (see Appendix A for an example choice task). Attributes and levels were systematically varied between choice tasks on the basis of a fractional factorial experimental design optimized for D-efficiency. The total design consisted of 81 unique choice tasks, from which each participant was presented with a randomized subset of 10 choice tasks. This approach allows for optimizing independent variation across profiles, while keeping the number of tasks manageable for participants (Eggers et al. 2021).

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- 1 The exclusion and inclusion strategies imply a less diversified investment portfolio. The results of Brøgger, Koëter and van Dijk (2025) suggest that excluding 25% of stocks does not substantially affect the risk-return profile.
  - 2 All results are based on the full sample of participants, including those who had to reread the definitions. Removal of respondents who failed at least one attention check question does not materially change our results.

**Table 1.** Attributes and levels used in conjoint choice experiment

| Attribute                                      | Level                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainable investment strategy: People        | <b>Neutral:</b> Complies with the law but does not specifically consider People impact aspects when selecting investments.<br><b>Exclusion:</b> Excludes the 25% worst-performing companies on People impact aspects.<br><b>Inclusion:</b> Invests more in the 25% best-performing companies on People impact aspects. |
| Sustainable investment strategy: Planet        | <b>Neutral:</b> Complies with the law but does not specifically consider Planet impact aspects when selecting investments.<br><b>Exclusion:</b> Excludes the 25% worst-performing companies on Planet impact aspects.<br><b>Inclusion:</b> Invests more in the 25% best-performing companies on Planet impact aspects. |
| Financial investment strategy                  | <b>Defensive:</b> Lower risk but also lower expected financial returns.<br><b>Balanced:</b> Average risk and financial returns.<br><b>Aggressive:</b> Higher risk, but also higher expected financial returns.                                                                                                         |
| Independent pension income change <sup>§</sup> | -1%<br>-2%<br>-3%                                                                                                                                                                                                                                                                                                      |

<sup>§</sup> The independent pension income change attribute was presented in the choice tasks as a personalized amount reduction in the participant's net monthly pension income.

### 3.2 Measuring Consumers' Goals and Other Survey Measures

At the start of the survey, participants were asked about their sustainable pension investment goals. This was done using slider scales, asking them to indicate which goal was more important to them. First, the participants' focus on sustainability goals, regarding either people or planet sustainability relative to their financial goal, was measured. Participants used two slider scales to indicate which goal was more important to them. The right end-point of the slider indicated either "People and society goal," for the people goal or "Nature and environmental goal," respectively, while the left end-point of the slider indicated "Financial goal." By choosing the mid-point on the sliders, participants could indicate that both goals were equally important to them. Next, using a third slider scale, with each of two sustainable goals as the end-points, participants indicated whether their people or their planet goal was more important to them.

Participants then used two further slider scales to indicate whether a prevention or a promotion focus with respect to their sustainable investment goals was most important to them. For the people goal, the slider end-points were: "Avoiding negative effects on people and society" and "Improving people and society". For the planet goal, the slider end-points were: "Avoiding negative effects on nature and the environment" and "Improving nature and the environment". As an additional measure, participants were also asked to indicate whether they primarily had a promotion or a prevention focus for the financial goal. Here, the slider end-points were: "Avoid losing money" and "Gaining more money," respectively.

Participants also answered several background questions. These questions addressed how they expected sustainable pension investment strategies to affect their future pension income, plus two questions about their sustainable behaviors: “Have you taken any actions in the past year to reduce your ecological footprint, such as recycling or choosing environmentally friendly alternatives when making major purchases or traveling?” and “Do you take factors such as the environment and human rights into account when buying your groceries?”. Finally, personal characteristics questions were asked that covered the participant’s age, gender, marital status, educational background, employment status, and current income.

### 3.3 Model Estimation and Willingness to Pay for Sustainable Investment Strategies

To estimate the joint impact of the investment strategy attributes of pension funds and of consumer goals on their preferences in our choice-based conjoint analysis, we employ a mixed multinomial logit model. The model specification captures the probability of each choice based on the attributes of the options presented. That reveals the relative importance and trade-offs that participants make between financial and sustainability features of the pension fund investment strategies when making decisions. The model includes random variation in preference parameters by incorporating random coefficients. This approach enables us to capture unobserved individual-specific factors that influence choice behavior, thus enhancing the realism of the model. The capacity of the model to address correlations across repeated choices for the same individual aligns well with the structure of conjoint data, where each participant evaluates multiple choice sets.

To obtain economically meaningful effect sizes for consumer preferences for the various pension investment strategies, we compute their willingness to pay (WTP) for the various strategies. For this purpose, we use the separate percentage change in monthly pension income that was introduced as an attribute in the experimental design. We define willingness to pay for a strategy as the utility gain of this investment strategy, divided by the utility loss that results from a 1% reduction in monthly pension income. For example, for an inclusion people investment strategy, this results in the following expression, where the beta estimate for the utility gain of this strategy is divided by the beta estimate for the utility loss that results from a 1% reduction in monthly pension income:

$$WTP_{People\_Inclusion} = \frac{\beta_{People\_Inclusion}}{\beta_{Income\_Decrease}}.$$

## 4. Results

### 4.1 Data and Sample

Data were collected from pension fund participants in collaboration with a European pension fund, with field work being conducted by a third party in a large-scale online panel. Participants were pre-screened on participation in a pension plan and not being retired. Of the total response of 2,095 participants, 33 were dropped because they were already retired at the time of participation, resulting in a final sample of 2,062. The average participant in the sample is 45.4 years old. 51.5% of the participants identify as female. Regarding educational attainment, 22.6% of participants hold at least a bachelor's degree, and 96.8% are currently employed. The income distribution shows that the largest group of participants (54.2%) have a net monthly income between €2,000 and €3,999. 68.4% of participants are married or in a formal partnership. Finally, the average reported pension income of participants (excluding their fixed state pension) is €1,308 after tax per month. Compared to the general population, the sample exhibits a higher employment rate (96.8% vs. 73% for ages 15–74) and a slightly higher share of individuals with a bachelor's degree or higher (22.6% vs. 20%). Income and marital status distributions are consistent with national averages.

### 4.2 Descriptive results: Consumers' Goals

Contrasting the financial goal with the people goals and with the planet goal, we find that for the people goal 32% of participants find it more important than the financial goal, while 58% find the financial goal more important, with the remaining 10% finding them equally important. For the planet goal similar results are obtained, with 33% finding the planet goal most important, 57% the financial goal, and 10% is indifferent. Directly comparing the two sustainability goals, 19.1% of participants indicated that the planet goal is the most important goal for them, while 13.4% indicated that the people goal is their most important goal.

Most participants primarily have a promotion focus for their sustainability goals. For the people goal, 62.1% of the participants primarily have a promotion focus while 29.2% primarily have a prevention focus, and 8.7% of the participants consider promotion and prevention equally important for this goal. For the planet goal, 57.4% of participants primarily have a promotion focus, while 31.6% primarily have a prevention focus, and 11.1% consider promotion and prevention equally important. Appendix B provides these details in an overview table.

The stated importance of financial versus sustainability goals is confirmed by participants' answers on environmental and societal behaviors. Participants indicating that they find the financial goal most important also are less involved in sustainable behaviors when buying

groceries, making major purchases, or when travelling ( $p < .001$  on Pearson Chi-squared test for the two questions on environmental behaviors, both answered on a five-point scale).

#### 4.3 The Impact of Consumers' Goals on Their Pension Investment Strategy Preferences

Table 2 shows the estimates for how consumers' preferences for sustainable and financial pension investment strategies are moderated by their goals (see Appendix C for model estimates when control variables are also included). The overall fit of the model is satisfactory with a 0.19 Pseudo  $R^2$ . A likelihood ratio test shows that the model with goals has a better goodness-of-fit compared to a base model without goals ( $LL_{base} = -11667.81$ ,  $LL_{with\ goals} = -11561.20$ ,  $\chi^2 = 213.22$ , with  $df = 10$ ,  $p < .01$ ).

Coding of the goal-related interaction variables ensures that the main effects have a proper interpretation. Consider, for example, the variable that captures "people vs. financial focus". This variable has value 1 if the people goal is more important than the financial goal, value -1 if the financial goal is most important, and value 0 if both goals are equally important. Similar coding is used for the other goal-related variables. As a result, the main effects reflect the preferences of a respondent who is indifferent between the people, planet, and financial goals and is neither promotion- nor prevention-oriented.

The results for the main effects show the following. For the sustainable *people* strategy, consumers prefer the inclusion strategy, but not the exclusion strategy, over the neutral strategy ( $\beta_{People\_Exclusion} = -.068$ , n.s.;  $\beta_{People\_Inclusion} = .303$ ,  $p < .01$ ). For the sustainable *planet* strategy, results are similar, as consumers also prefer the inclusion strategy over the neutral strategy, but not the exclusion strategy ( $\beta_{Planet\_Exclusion} = .059$ , n.s.;  $\beta_{Planet\_Inclusion} = .451$ ,  $p < .01$ ). For the *financial* strategy, consumers significantly dislike the defensive and aggressive investment strategies compared to the balanced investment strategy ( $\beta_{Defensive} = -.424$ ,  $p < .01$ ;  $\beta_{Aggressive} = -.437$ ,  $p < .01$ ). As expected, consumers also have a significant dislike for pension income decreases ( $\beta_{Income\_decrease} = -1.388$ ,  $p < 0.01$ ).

**Table 2.** The Impact of Consumers' Goals on Their Investment Strategy Preferences Estimates

|                                                                    | Coeff.                     | t-value | s.d.           | t-value |
|--------------------------------------------------------------------|----------------------------|---------|----------------|---------|
| Intercept                                                          | <b>.086**</b>              | 3.246   |                |         |
| People strategy: Exclusion                                         | -.068                      | -1.676  | <b>.699**</b>  | 11.692  |
| People strategy: Inclusion                                         | <b>.303**</b>              | 6.379   | <b>.630**</b>  | 7.208   |
| People strategy: Neutral (base)                                    | fixed to 0                 |         | -              | -       |
| Planet strategy: Exclusion                                         | .059                       | 1.426   | <b>.970**</b>  | 19.940  |
| Planet strategy: Inclusion                                         | <b>.451**</b>              | 8.465   | <b>.795**</b>  | 7.925   |
| Planet strategy: Neutral (base)                                    | fixed to 0                 |         | -              | -       |
| Financial strategy: Defensive                                      | <b>-.424**</b>             | -12.515 | <b>.690**</b>  | 13.137  |
| Financial strategy: Aggressive                                     | <b>-.437**</b>             | -7.582  | <b>1.035**</b> | 9.836   |
| Financial strategy: Balanced (base)                                | fixed to 0                 |         | -              | -       |
| Pension income decrease (per 1% monthly income)                    | <b>-1.388**</b>            | -27.959 | <b>1.355**</b> | 27.240  |
| <i>Moderating effects of consumers' goals</i>                      |                            |         |                |         |
| People strategy: Exclusion * People vs. financial focus            | .075                       | 1.882   |                |         |
| People strategy: Inclusion * People vs. financial focus            | <b>.186**</b>              | 3.995   |                |         |
| Planet strategy: Exclusion * Planet vs. financial focus            | .072                       | 1.691   |                |         |
| Planet strategy: Inclusion * Planet vs. financial focus            | <b>.299**</b>              | 5.420   |                |         |
| Income decrease * People vs. financial focus                       | <b>.349**</b>              | 5.553   |                |         |
| Income decrease * Planet vs. financial focus                       | <b>.127*</b>               | 2.028   |                |         |
| People strategy: Exclusion * Prevention vs. promotion people focus | <b>.032<sup>a</sup></b>    | .807    |                |         |
| People strategy: Inclusion * Prevention vs. promotion people focus | <b>-.092*<sup>a</sup></b>  | -1.964  |                |         |
| Planet strategy: Exclusion * Prevention vs. promotion planet focus | <b>.063<sup>a</sup></b>    | 1.530   |                |         |
| Planet strategy: Inclusion * Prevention vs. promotion planet focus | <b>-.181**<sup>a</sup></b> | -3.352  |                |         |

\*\*  $p < .01$ , \*  $p < .05$ ; Robust t-values reported; N = 2062

<sup>a</sup> The difference between the exclusion and inclusion investment strategies is significant at  $p < .01$

When we look at the impact of consumers' goals on their pension investment strategy preferences, several interesting results emerge. As anticipated, consumers with a sustainable *people* outcome goal focus have a stronger preference for the sustainable people strategies over the neutral strategy. This goal impact is strong and significant for the inclusion strategy but only marginal for the exclusion strategy ( $\beta_{People\_Exclusion*People} = .075$ , *n.s.*;  $\beta_{People\_Inclusion*People} = .186$ ,  $p < .01$ ). The results are similar for consumers with a sustainable *planet* outcome goal focus. These consumers more strongly prefer the sustainable inclusion planet strategies over the neutral one, with a strong and significant

impact for the inclusion strategy and a marginal impact for the exclusion strategy ( $\beta_{Planet\_Exclusion*Planet} = .072$ , n.s.;  $\beta_{Planet\_Inclusion*Planet} = .299$ ,  $p < .01$ ).

Also as anticipated, consumers with a primary sustainability focus are less sensitive to pension income decreases than those with a primary financial focus. There are significant positive moderating effects of consumers' sustainable people and planet focus on dislike of a pension income decrease. The results show this effect to be stronger for consumers with a people focus than for those with a planet focus ( $\beta_{Income\_decrease*People} = 0.349$ ,  $p < 0.01$ ;  $\beta_{Income\_decrease*Planet} = 0.127$ ,  $p < 0.05$ ).

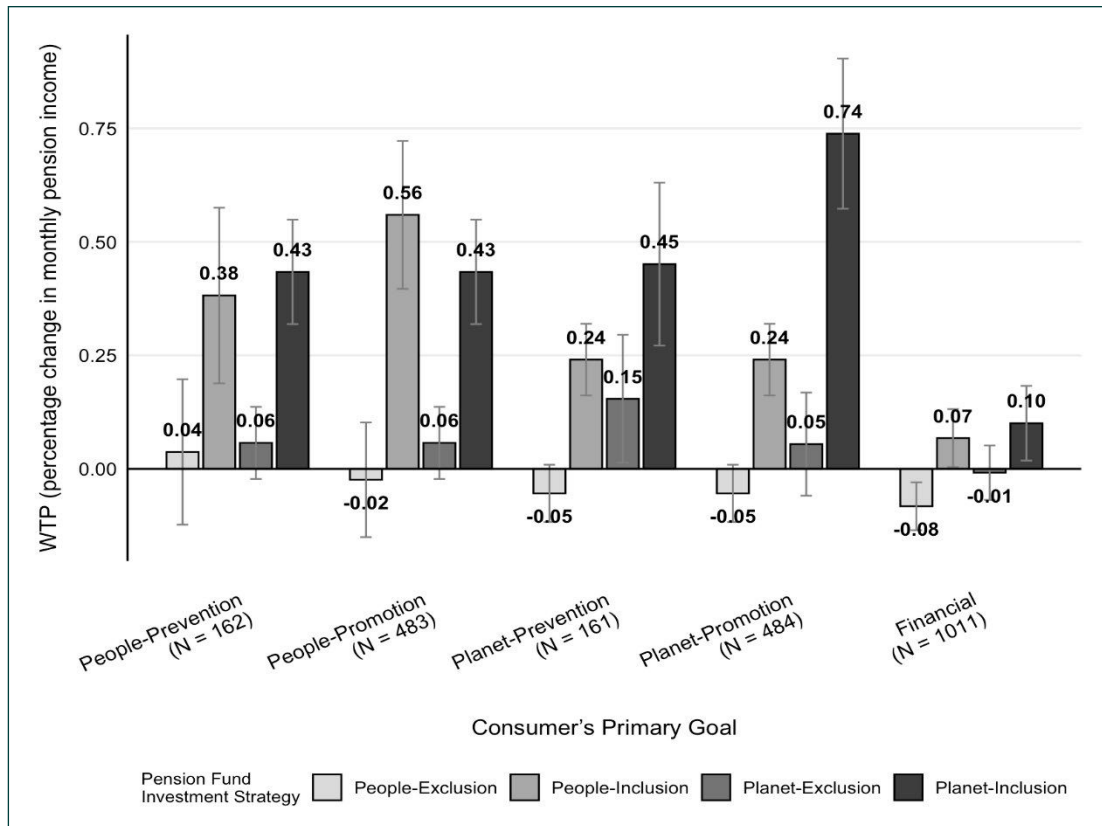
Finally, we address the impact of consumers' primary prevention versus promotion focus in their sustainability goals on their investment strategy preferences. To do so, we contrast the impact of consumers' prevention (vs. promotion) focus on their preference for an exclusion strategy to its impact on their preference for an inclusion strategy. We do this separately for the sustainable people and planet goals. The results show that, as expected, consumers with a primary prevention (vs. promotion)-focused people goal have a relatively stronger preference for an exclusion over an inclusion people strategy ( $\beta_{People\_Exclusion*Prevgoal\_People} - \beta_{People\_Inclusion*Prevgoal\_People} = .124$ ,  $p < .01$ ). The results for their planet goals are very similar. Here, the results show that consumers with a primary prevention (vs. promotion)-focused planet goal also have a relatively stronger preference for an exclusion over an inclusion planet strategy ( $\beta_{Planet\_Exclusion*Prevgoal\_Planet} - \beta_{Planet\_Inclusion*Prevgoal\_Planet} = .244$ ,  $p < .01$ ).

#### 4.4 Consumers' Willingness to Pay for Sustainable Investment Strategies

To assess the practical meaning and consequences of these findings in terms of the market effects that they can generate, we look at consumers' willingness to pay (WTP) for different sustainable investment strategies. WTP for a sustainable investment strategy represents the monetary loss (in our case, a percentage pension income decrease) that consumers are willing to accept if their pension fund implements a sustainable investment strategy, compared to a baseline investment strategy that does not take sustainability into account. Positive WTP values indicate that consumers are willing to give up pension income when the fund adopts a sustainable investment strategy, while negative WTP values indicate that they require compensation (an income increase) when a pension fund adopts such strategy.

Figure 2 presents the estimated WTP, in terms of percentage pension income change, for different sustainable investment strategies for consumers with a different primary goal focus. The figure separates consumers who prioritize people or planet sustainability goals and those who prioritize financial goals. It also separates the WTP for consumers who have a prevention versus a promotion focus for their people and planet sustainable investments goals respectively, because preferences also differ between these groups. The results demonstrate interesting commonalities as well as notable differences in WTP for sustainable pension investment strategies between consumers with different goals.

**Figure 2.** Consumers' willingness to pay (WTP) for sustainable people and planet investment strategies depending on their primary goal\*



\* Lines around bars represent 95% confidence intervals.

First, across all consumers, people and planet inclusion strategies are the two sustainable investment strategies for which WTP is highest, while their WTP for the people and planet exclusion strategies, versus a neutral strategy, is lowest. We also analyzed the average for the sample population, and find that consumers are willing to give up .21% of their pension income for the sustainable people inclusion investment strategy and .29% for the sustainable planet inclusion investment strategy (both values significant at  $p < .01$ ). On the contrary, their WTPs for the exclusion strategies are not significantly different from zero. Perhaps surprisingly, even consumers who are primarily focused on the financial goal still display a positive willingness to pay for the sustainable people inclusion (WTP=.07%,  $p < .05$ ) and planet inclusion strategies (WTP=.10%,  $p < .05$ ).

Second, for consumers whose primary goal is sustainability, we find that their WTP for the various sustainable investment strategies varies considerably. The highest WTP values are for consumers with a primary people promotion focus, as they are willing to give up .56% ( $p < .01$ ) of their pension income for a corresponding people inclusion investment strategy, and for consumers with a primary sustainable planet promotion goal, as they are willing to give up .74% ( $p < .01$ ) of their pension income for a planet inclusion investment strategy. These inclusion investment strategies also generate a positive WTP for consumers

with prevention-focused sustainable investment goals. However, except for consumers whose primary goal is planet prevention, who are willing to give up .15% ( $p < .05$ ) for the planet exclusion strategy, there are no consumers whose WTP for sustainable exclusion strategies differs significantly from the neutral strategy.

## 5. Conclusion and Discussion

Sustainable investment strategies require careful balancing between financial and sustainable outcome targets. In this study, we investigated the sustainable investment goals of consumers and how these goals affect their investment preferences in the context, in terms of societal impact, of collective pension fund management. The results show that, on average, consumers favor sustainable pension investment strategies that follow an inclusion strategy and aim for more sustainable outcomes, by investing more in firms that perform well on people (social) and planet (environmental) outcomes. Investment strategies that follow an exclusion strategy, with a focus on exclusion of firms that perform poorly on people or planet outcomes, and investment strategies that are neutral in terms of sustainable outcome targets, are less preferred by consumers.

The results also showed that these preferences are significantly moderated by consumers' primary sustainable investment goals, and in the anticipated direction. First, consumers with a primary focus on a sustainable people or planet goal have a higher preference for a people and planet inclusion investment strategies compared to consumers with a primary focus on a financial goal. Differences between people and planet investments are small for those who find the people goal most important, while those for whom the planet goal is most important are willing to pay more for planet than for people investment strategies. Interestingly, consumers who value the sustainable goals more than the financial goal only have a marginally higher preference for people and planet exclusion investment strategies. Second, as anticipated, these consumers also are significantly less sensitive to a pension income decrease than those whose primary goal is financial. Third, consumers whose sustainability goals are primarily promotion-focused (vs. prevention-focused) have a stronger (vs. weaker but still positive) preference for inclusion over exclusion investment strategies.

The WTP calculations showed that these impacts are also practically meaningful in terms of effect sizes. Consumers are willing to give up between .56% and .74% of their net monthly pension income if their pension fund were to implement a sustainable investment strategy that aligns with their sustainable promotion goals (see Figure 2). The inclusion strategies are also the two that are preferred overall, even by participants who focus on financial goals. This willingness to pay for preferred sustainable investment strategies suggests that welfare gains can be achieved when asset managers adopt such strategies. This will certainly be the case if these sustainable investment strategies do not come at the expense of a reduction in pension income, but also if there is a reduction in pension income that is lower than the corresponding gain in sustainability outcomes. Given the many consumers who have accumulated collective pension capital worldwide and the correspondingly large amounts

of capital that are managed by pension funds, the impact of such strategy changes will easily add up to large total consumer welfare gains.

### 5.1 Theoretical Implications

This study advances theory in sustainable marketing by investigating the interplay between consumers' sustainable outcome goals, their prevention versus promotion focus in these outcome goals, and their preferences for more sustainable behavior. In terms of how sustainability goals impact consumer decision-making, this research builds on theory on how differences in consumer goals affect the decisions made (Austin and Vancouver 1996; Fishbach and Ferguson 2007; Weber and Johnson 2009). With a few notable exceptions, there is relatively little research on how consumer goals affect sustainable behavior (Devezer et al. 2014; Trudel 2019; White et al. 2019).

The domain of pension investments that we study in this paper provides a unique and impactful context for research that theorizes on consumer goals with respect to sustainability and financial outcomes. The results show that there is considerable heterogeneity in consumers' primary investment goals. We find more consumers with a primary financial goal than a sustainable investment goal for their pension investment strategies. This may reflect earlier insights that, when it comes to their pension, consumers tend to support solidarity with others so long as it does not affect their personal outcomes (Tausch, Potters, and Riedl 2013). The consumers with a primary sustainability focus in their investment goal also differed in whether people- or planet-related outcomes were their primary goal. Their focus on people versus planet goals may reflect variations in perceived tangibility of people- and planet-related challenges, as well as a greater sense of personal impact and relevance (White et al. 2019).

In addition, our analysis of consumers' promotion versus prevention focus in their outcome goals offers further nuanced understanding of how the sustainability goals of consumers impact their investment strategy preferences. While recent research on the effectiveness of exclusion versus inclusion investment strategies questions the effectiveness, in financial terms, of exclusion strategies (Berk and Van Binsbergen 2025), our study adds a novel behavioral perspective to this question. The results show that most consumer preferences for pension investment strategies point in the same direction, in that consumers also prefer inclusion over exclusion strategies. Our research also adds to the literature on retail investors and sustainable investments (Bauer et al. 2021; Hartzmark and Sussman 2019), by theorizing and empirically demonstrating that goal-based heterogeneity is an important driver of variations in investors' valuation of sustainable investments.

## 5.2 Practical Implications

In practical terms, the findings underscore that it is important that pension funds integrate the people, planet, and financial dimensions in their investment strategy selections if they wish to align their investment strategies with the preferences and goals of consumers. Based on our results, such alignment can help direct pension fund trustees toward investment strategies that better resonate with pension plan participants, while also directing capital toward more responsible investment pathways (Eberhardt et al. 2021). The results also suggest that pension funds would do well to recognize the influence of consumers' investment goals on the investment strategy preferences of these consumers. It allows them to tailor their investment strategies better to the preferences of their participants, but understanding consumers' underlying investment goals can also help in improving communications, providing better decision support, and developing new investment strategies in line with consumers' goals, making these adaptations more meaningful and useful for consumers. While communicating about the tradeoffs between sustainability impact and financial return is challenging, such communication might stimulate greater consumer participation in pension plans, lead to a closer fit between pension plans and consumer needs, and result in greater consumer satisfaction.

In the collective pension fund investment context, investment decisions are made by pension fund trustees on consumers' behalf, with the aim of maximizing welfare for the totality of pension fund participants. In making these investment strategy decisions, trustees need to balance the diverse pension fund participants' preferences. While planet concerns are often prioritized in institutional sustainability frameworks, our study reveals a notable divergence between consumers in their goals for people and planet outcomes. This finding highlights a potential tension between different sustainability goals and also the potential for misalignment between top-down sustainability prioritizations and the bottom-up preferences and goals of pension fund participants.

For the sustainable outcome goals, one practical way to overcome potential tensions is to combine sustainable exclusion and inclusion investment strategies. Such strategies are likely to resonate with a wide spectrum of participants, as the common aim to do no harm and create positive impact corresponds to the distinction between prevention- and promotion-focused sustainability goals that we identified in our research. It remains uncertain whether having sustainable outcome targets in investment strategies helps or hurts financial investment performance. Sustainable portfolios tend to reflect a higher concentration in investments that lead to lower returns but also lower risk (Jeffers, Lyu, and Posenau 2024). Thus, how this shift is valued will depend on the trade-offs by consumers between risk and return.

### 5.3 Limitations and Avenues for Future Research

Although this study provides novel insights into how sustainable investment goals shape preferences for pension fund investment strategies, several limitations should be acknowledged.

First, our study relies on a stated-preference conjoint experiment rather than on observed real-world investment behavior. While conjoint analysis enables controlled variation of attributes and identification of trade-offs, hypothetical choices may not perfectly mirror actual decisions, particularly in contexts involving long-term pension outcomes. Future work could combine experimental methods with administrative or transactional data to assess the external validity of these findings.

Second, the sustainable investment goals of participants were measured prior to the conjoint task. Elicitation of goals at the start of the survey may have primed respondents to think more explicitly about sustainability before entering the choice tasks. This sequencing could inflate associations between goal measures and investment preferences. Future studies could vary measurement order or employ designs that mitigate priming effects, such as embedded or post-choice goal elicitation. Moreover, while it is tempting to see the promotion and prevention focus as opposites of a single scale – and we measured them as such – people may in fact have both a prevention and a promotion focus. Future research could be directed at this more nuanced view of regulatory focus.

Third, while the experiment assumed that varying the sustainable investment strategies does not affect financial risk beyond the specified risk-return attribute, real-world strategies that exclude or concentrate portfolio holdings may alter diversification and risk exposure. Although isolating sustainability from financial risk is methodologically useful for causal identification, future studies could examine how consumers respond when sustainability and risk attributes are manipulated jointly, reflecting more realistic investment environments.

Fourth, the income change attribute was limited to reductions of 1 to 3 percent. These modest ranges may constrain the identification of the willingness of participants to trade financial outcomes for sustainability benefits. Broader or asymmetric income variations could reveal nonlinearities in willingness to accept financial losses.

Fifth, based on the triple bottom line framework (Elkington, 1997), we focus on profit, people, and planet as the three central goals for pension investments. The broader Environmental, Social and Governance (ESG) framework (United Nations, 2004) suggests that governance dimensions could also be included in future research.

Together, these limitations highlight several promising avenues for future research. More fine-grained measurement of sustainability goals, integration of revealed-preference data, and cross-cultural or institutional comparisons may further advance our understanding of how consumers navigate financial and non-financial objectives in collective pension investment contexts.

We hope that the research reflected in this paper will be a starting point for further theorizing and practical applications that address the important relationships between consumers' sustainability goals and their pension investment strategy preferences. Ideally, aligning pension fund investment strategies with participants' goals will not only promote their financial security and consumer welfare more generally, but also advance the long-term sustainability and resilience of our planet.

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# Appendix A. Example Choice Task

Figure A1. Example choice task

Which of these two options do you prefer for your pension fund?

|                                                     | Option 1        | Option 2        |
|-----------------------------------------------------|-----------------|-----------------|
| Investment strategy for People and Society          | Inclusive       | Exclusive       |
| Investment strategy for Nature and the Environment  | Exclusive       | Neutral         |
| Investment strategy for Financial Risks and Returns | Aggresive       | Balanced        |
| Change in expected pension income (€/month)         | Decrease of €90 | Decrease of €60 |

I choose: ☐ Option 1 ☐ Option 2

## Appendix B. Summary statistics

Overview of distribution of key variables

| Variable                                        | Mean | Std.Dev. | Min.  | Max              |
|-------------------------------------------------|------|----------|-------|------------------|
| Age                                             | 45.4 | 11.7     | 22    | 67               |
| Male                                            | 49%  | 0.50     | 0     | 1                |
| Most important goal of left versus right column |      |          |       |                  |
|                                                 | Left | Equally  | Right |                  |
| Financial                                       | 58%  | 10%      | 32%   | People           |
| Financial                                       | 57%  | 10%      | 33%   | Planet           |
| People                                          | 13%  | 68%      | 19%   | Planet           |
| Prevention People                               | 29%  | 9%       | 62%   | Promotion People |
| Prevention Planet                               | 32%  | 11%      | 57%   | Promotion Planet |

## Appendix C. Model with Control Variables

To further examine the robustness of our findings to inclusion of other types of individual-level variation, we also estimated the model with consumer characteristics as control variables. The results are robust to this specification and support our goal-based insights from the more restricted model without control variables.

**Table B1.** Model estimates with control variables (N = 1754)

|                                                          | Coef.                      | t-value | s.d.           | t-value |
|----------------------------------------------------------|----------------------------|---------|----------------|---------|
| Intercept                                                | <b>.080**</b>              | 2.833   |                |         |
| People strategy: Exclusion                               | -.074                      | -1.687  | <b>.766**</b>  | 12.307  |
| People strategy: Inclusion                               | <b>.303**</b>              | 5.896   | <b>.572**</b>  | 4.965   |
| People strategy: Neutral (base)                          | fixed to 0                 | -       | -              | -       |
| Planet strategy: Exclusion                               | <b>.090*</b>               | 2.002   | <b>.968**</b>  | 17.515  |
| Planet strategy: Inclusion                               | <b>.448**</b>              | 7.773   | <b>.689**</b>  | 4.673   |
| Planet strategy: Neutral (base)                          | fixed to 0                 | -       | -              | -       |
| Financial strategy: Defensive                            | <b>-.427**</b>             | -11.602 | <b>.670**</b>  | 10.635  |
| Financial strategy: Aggressive                           | <b>-.457**</b>             | -7.254  | <b>1.083**</b> | 9.440   |
| Financial strategy: Balanced (base)                      | fixed to 0                 | -       | -              | -       |
| Pension income decrease                                  | <b>-1.370**</b>            | -26.277 | <b>1.311**</b> | 25.561  |
| <i>Moderating effects of consumers' goals</i>            |                            |         |                |         |
| People exclusion × People vs. financial                  | <b>.092*</b>               | 2.132   |                |         |
| People inclusion × People vs. financial                  | <b>.198**</b>              | 3.932   |                |         |
| Planet exclusion × Planet vs. financial                  | .089                       | 1.949   |                |         |
| Planet inclusion × Planet vs. financial                  | <b>.318**</b>              | 5.271   |                |         |
| Income decrease × People vs. financial                   | <b>.351**</b>              | 5.087   |                |         |
| Income decrease × Planet vs. financial                   | <b>.172*</b>               | 2.503   |                |         |
| People exclusion × Prevention vs. promotion People focus | <b>-.003<sup>b</sup></b>   | .083    |                |         |
| People inclusion × Prevention vs. promotion People focus | <b>-.124<sup>b</sup></b>   | 2.421   |                |         |
| Planet exclusion × Prevention vs. promotion Planet focus | <b>.058<sup>a</sup></b>    | -1.318  |                |         |
| Planet inclusion × Prevention vs. promotion Planet focus | <b>-.198**<sup>a</sup></b> | 3.396   |                |         |
| <i>Influence of Individual heterogeneity</i>             |                            |         |                |         |
| People exclusion × Risk aversion                         | <b>-.107*</b>              | -2.478  |                |         |
| People inclusion × Risk aversion                         | -.039                      | -.788   |                |         |
| Planet exclusion × Risk aversion                         | -.006                      | -.123   |                |         |
| Planet inclusion × Risk aversion                         | .114                       | 1.912   |                |         |
| Defensive × Risk aversion                                | .039                       | 1.013   |                |         |
| Aggressive × Risk aversion                               | <b>-.396**</b>             | -5.922  |                |         |
| Income decrease × Risk aversion                          | <b>-.098*</b>              | -2.127  |                |         |

|                                       |                |        |
|---------------------------------------|----------------|--------|
| People exclusion × Age                | <b>-.007*</b>  | -2.030 |
| People inclusion × Age                | <b>-.008*</b>  | -2.058 |
| Planet exclusion × Age                | <b>-.008*</b>  | -2.192 |
| Planet inclusion × Age                | -.008          | -1.763 |
| Financial defensive × Age             | -.006          | -1.763 |
| Financial aggressive × Age            | -.002          | -.428  |
| Income decrease × Age                 | <b>-.008*</b>  | -2.039 |
| People exclusion × Female             | -.014          | -.178  |
| People inclusion × Female             | -.061          | -.655  |
| Planet exclusion × Female             | .001           | .017   |
| Planet inclusion × Female             | -.091          | -.837  |
| Financial defensive × Female          | -.042          | -.578  |
| Financial aggressive × Female         | <b>-.353**</b> | -2.790 |
| Income decrease × Female              | .147           | 1.575  |
| People exclusion × High education     | <b>.361**</b>  | 3.655  |
| People inclusion × High education     | .208           | 1.853  |
| Planet exclusion × High education     | <b>.403**</b>  | 3.894  |
| Planet inclusion × High education     | <b>.541**</b>  | 4.040  |
| Financial defensive × High education  | .050           | .589   |
| Financial aggressive × High education | -.022          | -.151  |
| Income decrease × High education      | <b>-.305**</b> | -3.018 |
| Financial defensive × Married         | -.057          | -0.755 |
| Financial aggressive × Married        | -.151          | -1.150 |
| People exclusion × Married            | .009           | .108   |
| People inclusion × Married            | -.008          | -.088  |
| Planet exclusion × Married            | <b>-.203*</b>  | -2.331 |
| Planet inclusion × Married            | -.209          | -1.870 |
| Income decrease × Married             | <b>-.191*</b>  | -1.979 |
| People exclusion × Employed           | -.111          | -.501  |
| People inclusion × Employed           | -.058          | -.237  |
| Planet exclusion × Employed           | <b>-.628**</b> | -2.839 |
| Planet inclusion × Employed           | .091           | .337   |
| Financial defensive × Employed        | <b>.393*</b>   | 1.967  |
| Financial aggressive × Employed       | -.021          | -0.058 |
| Income decrease × Employed            | .243           | 0.981  |

\*\*  $p < .01$ , \*  $p < .05$ ; Robust  $t$ -values reported

<sup>a</sup> The difference between the exclusion and inclusion investment strategies is significant at  $p < .01$

<sup>b</sup> The difference between the exclusion and inclusion investment strategies is significant at  $p < .05$



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