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Do sustainability attributes play a role for individuals' decisions regarding unit-linked life insurance? A survey research on German private investors

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Abstract
The aim of this paper is to investigate the relevance of sustainable product attributes as compared to ongoing costs and risk–return profiles when individuals choose funds underlying unit-linked life insurances. Regarding sustainability attributes, we focus on the product classification according to the Sustainable Finance Disclosure Regulation as a European regulatory transparency standard, and on sustainable investment strategies. We conduct two choice-based conjoint analyses using a German panel for unit-linked life insurances as well as fund savings plans as a financial product comparison. We estimate the relative importance, part-worth utilities, and the marginal willingness to pay for changes in product attributes. Our results suggest that private investors of unit-linked life insurances value sustainable product attributes and that they result in a slightly higher marginal willingness to pay, but risk–return indicators and especially ongoing costs are currently more relevant. We find further indications that sustainability attributes are less relevant in the setting of a unit-linked life insurance as compared to a fund savings plans setting.

Keywords Sustainable funds · Unit-linked life insurance · Savings plans · SFDR · Investment behavior · German private investors

JEL Classification G11 · G22 · G40 · G52 · D81 · O16

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Introduction

Sustainable and green investment solutions are not a novelty, but have gained increasing relevance in various business sectors (see Global Sustainable Investment Alliance (GSIA) 2021). In the first half of 2023, the German sustainable fund market comprised an asset volume of 668 billion Euros, with German retail investors allocating twice as much in funds with sustainability characteristics (see German Investment Funds Association (BVI) 2023). In the insurance industry, policyholders thereby have the opportunity to invest in sustainable funds when purchasing unit-linked insurance products (ULIPs), which serve to accumulate capital for retirement provisions. In this study, we focus on ULIPs offered by German life insurers since Germany represents one of the largest European life insurance markets with a gross premium income of about 100 billion Euros in 2022 (see Gesamtverband der Deutschen Versicherungswirtschaft e.V. (GDV) 2023b). Moreover, German life insurers' premium income account for 2.4% of the German GDP in 2022 (see GDV 2023b), with unit-linked products generating more than 21% of their overall premium income (see GDV 2023a).

In Europe, the consideration of sustainability aspects in investment decisions and insurance products has steadily increased in recent years due to regulatory developments such as the delegated act on the Insurance Distribution Directive (IDD)[1] by the European Commission (2021), which aims to steer policyholders towards more sustainable product choices. Another central regulatory development in this context is the Sustainable Finance Disclosure Regulation (SFDR) established by the European Council and European Parliament (2019), which requires the classification of financial (life insurance) products according to their sustainability aspirations into different categories. Consequently, the transparent disclosure of sustainability-related information towards customers has increased significantly in recent years in Europe due to regulatory initiatives, and will continue to do so.

European life insurers are thus required to classify their financial products according to the SFDR as of March 2021. However, the effect of these transparency regulations on the demand for sustainable funds underlying unit-linked life insurance products as well as the Marginal Willingness to Pay (MWTP) for changes in such sustainable product attributes has not yet been studied, despite its high practical relevance and given the substantial market share of unit-linked products. We thus contribute to the literature by filling this gap. We investigate the MWTP for ULIPs depending on the respective SFDR sustainability classification, the applied sustainable investment strategy, and compare those to the relevance of the risk–return profile and the underlying funds' ongoing costs. To study whether there is a difference between investing in mutual funds underlying a life insurance financial product or a pure savings plan, we conduct two different experiments for ULIPs and fund savings plans with identical buying options.

[1] The delegated regulation (EU) 2021/1257 (see European Commission 2021) requires providers of insurance-based investment products from August 2022 onwards to consider sustainability goals and requires insurance intermediaries to ask customers about their sustainability preferences.

Our analysis uses data from web-/survey-based choice-based conjoint (CBC) experiments to derive private investors' part-worth utilities, the relative importance, and the MWTP for changes in non-price product attributes. This approach is well suited for the purpose of our research objective, as CBC experiments outperform direct stated preference models (e.g., surveys or interviews) when exploring preferences for infrequently purchased long-term financial products as well as products that are subject to complex decision making processes (see Voelckner 2006). As a result, CBC analyses have also been applied by Braun et al. (2016) in the context of term life insurance, Fuino et al. (2020) and Luca et al. (2023) for capital guarantees in German life insurance savings products, Jahnert et al. (2022) on the integration of sustainable attributes in homeowners' insurance contracts, and Gatzert and Hanika (2023) regarding the impact of default risk on policyholders' willingness to pay in life insurance.

One main finding is that private investors value sustainable product attributes as displayed based on the SFDR and sustainable investment strategies when selecting funds underlying unit-linked life insurance products, but that they assign a higher relative importance towards ongoing costs and risk–return profiles. Moreover, (slightly) positive MWTPs can be observed for changes from non-sustainable to sustainable product attributes. Thus, the insights of our study are relevant for practitioners, academics, and regulators, as they show how private investors react to recently established regulatory requirements in regard to the disclosure of sustainability-related information. In addition, we contribute to existing empirical literature by integrating the SFDR classification as a rather newly established product attribute in an experimental survey design and thus provide a starting point for further research in this area. Finally, the results demonstrate the implications of integrating sustainability aspects in (insurance-based) investment products, as compared to other product attributes (especially costs and risk–return profiles).

The remainder of this paper is structured as follows: A literature review is provided in the following Section. "(Sustainable) unit-linked life insurance products" presents central product characteristics of (sustainable) ULIPs. The methodology and hypotheses are provided in Section "Hypotheses and methodology", and "Empirical results" present the main findings. The last Section summarizes the results.

Literature review

In previous work, multiple studies in the field of consumer research find that sustainability information can stimulate purchase behavior of financial products in specific settings (see Aasheim et al. 2022; Ammann et al. 2019; Bassen et al. 2019; Becker et al. 2022; Hartzmark and Sussman 2019; Lingnau et al. 2022). For example, Bassen et al. (2019) show that climate labels might direct retail investors towards more environmentally friendly investments. In this context, framing effects, i.e., the way information is being presented, can influence individual perceptions and shape risk attitudes in insurance decisions (see Baars and Goedde-Menke 2021; Lingnau et al. 2022). Many empirical studies further observe that

sustainability attributes, e.g., social and environmental values, are significantly more important than financial product characteristics (see Bauer et al. 2021; Gutsche and Ziegler 2019; Hartzmark and Sussman 2019; Lagerkvist et al. 2020; Lingnau et al. 2022; Riedl and Smeets 2017; Rossi et al. 2019). To investigate the reason behind the fact that investors include sustainability aspects in their investment decisions, Riedl and Smeets (2017) conduct incentivized experiments and identify individuals' social preferences (e.g., altruism) as the main reason for holding Socially Responsible Investment (SRI) funds, even in case of lower expected returns. Similar results are obtained by Rossi et al. (2019), who use a web-based survey to derive stated preference models by focusing on household preferences for SRIs and by including the role of education and financial literacy.

Due to the increasing relevance of sustainable investments, this topic has already been addressed in various cross-sectional studies that analyze investors' preferences for sustainable funds. To date, the classification of financial products according to the SFDR has only been investigated by Becker et al. (2022), who find that investors allocate an increasing share of their capital in funds being classified as sustainable either according to Article 8 (funds that *promote* environmental or social characteristics) or Article 9 (sustainable investments as the *main objective*). Lagerkvist et al. (2020) represent the only recent experimental study that includes preferences for sustainable investment strategies, where negative screening is found to be the most popular strategy. In contrast to the setting of the present study, their stated preference analysis exclusively considers equity funds without taking into account ULIPs or fund savings plans as product-specific contexts, and it does not investigate the effects of the SFDR categorization on investment decisions. The performance of sustainable funds has already been investigated in different studies, with heterogeneous evidence on whether sustainable funds can generate higher returns than funds without sustainability characteristics (see, e.g., Hartzmark and Sussman 2019; Statman and Glushkov 2016). Regarding cost-related aspects, Bassen et al. (2019) find that a fund's annual costs can be considered as more important for retail investors than its information on climate-related aspects, which also depends on the cognitive reflection capabilities of the respective decision-maker.

Overall, sustainable investment preferences in the insurance context have not been studied so far, even though recent research suggests that sustainability characteristics gain increasing importance for the investment decision-making process (see, e.g., Gutsche and Ziegler 2019; Riedl and Smeets 2017). Finally, existing studies on individuals' investment behavior with regard to sustainable funds do not explicitly focus on the insurance sector despite its strong potential for sustainable investments, e.g., in the context of insurance-based investment products.

(Sustainable) unit-linked life insurance products

In what follows, we first provide information on the main characteristics of ULIPs. Thereafter, (sustainable) fund attributes are presented.

Central product features

ULIPs belong to the category of insurance-based investment products, which describe an insurance product that offers a maturity value or surrender value after a savings phase that is subject to market fluctuations (see European Insurance and Occupational Pensions Authority (EIOPA), 2022). ULIPs can be considered as a savings product that provides financial protection for surviving dependents in case of a policyholder's death (see Gatzert et al. 2011; Huber et al. 2014) and can also promise a lifelong income stream during retirement, depending on the accumulated fund assets at maturity. During the savings phase, the policyholders' funds are invested in a mutual fund and can thus benefit from opportunities at the capital market (see Fuino et al. 2020; Gatzert et al. 2011). Policyholders can thereby typically choose the underlying (sustainable) funds based on their individual risk appetite as well as investment preferences. Without an investment guarantee, the payoff of the contract is given by the value of the investment fund at a fixed maturity (see Huber et al. 2014). Unit-linked life insurance contracts in Germany are further subject to tax advantages under certain conditions.[2]

For the purpose of our study, we consider a unit-linked life insurance contract with a fixed contract term and focus on the savings part, without considering death benefits, maturity guarantees (e.g., Fuino et al. 2020; Gatzert et al. 2011), or transaction costs. However, in the survey set-up we explicitly point out that at maturity, the accumulated funds of the ULIP can either be paid out as a lump-sum or as a lifelong annuity. The focus of our analysis lies on how much capital is built up in the savings phase based on investing a fixed monthly premium in a (sustainable) fund, and on the sustainable investment behavior by including two sustainable product attributes (as introduced in the subsequent section). For comparison purposes, we additionally include a fund savings plan with an indefinite maturity and without mentioning any additional options.

(Sustainable) fund attributes

Regarding the underlying fund, the SFDR requires financial market participants to establish transparency with respect to the sustainability aspects of a financial product and is intended to reduce information asymmetries towards investors (see European Parliament and European Council 2019). Towards this end, financial products are classified into three types depending on their sustainability goals. First, Article 8 includes funds that *promote* environmental or social characteristics and only invest

[2] In general, 15% of the difference between the insurance benefit and the sum of premiums paid (investment income) are not subject to withholding tax in the case of ULIPs (see §20 Para. 1 No. 6 EStG), which does not apply to savings plans without insurance context. Provided a contract term of twelve years and provided that the contract does not end before the age of 60 or, in the case of contracts concluded after 31 December 2004, before the age of 62, only half of the investment income is subject to tax payments (see §20 Para.1 No. 6; §32d Para. 2 No. 2 EStG). In the case of a regular pension payment, taxes are again exclusively claimed for the share of revenues, whereby the amount decreases with increasing age (see §22 No. 1 EStG). For example, at a retirement age of 67, the income share is 17%, which in turn is then subject to 25% withholding tax.

in firms with good governance, but sustainable investing does not necessarily serve as a primary objective. Second, funds being classified according to Article 9 focus on sustainable investments as *their main goal* by contributing to at least one of the six environmental objectives defined by the EU Taxonomy and by ensuring that no other sustainability objective is significantly impaired (see Directive (EU) 2020/852 of the European Parliament and European Council, 2020, Art. 9). Third, Article 6 products *do not* fulfill the sustainability requirements laid out in Article 8 and 9. In this case, Article 7 of the EU Taxonomy requires financial market participants to state that "the investments underlying this financial product do not take into account the EU criteria for environmentally sustainable economic activities" (European Parliament and European Council, 2019).[3]

Apart from the SFDR classification, various types of sustainable investment strategies can be implemented (see, e.g., Gatzert and Reichel 2024, for an overview and application in the European and US insurance industry). Negative screening excludes certain sectors (e.g., coal or weapons), products, operations, or regions from a portfolio based on non-sustainable characteristics or due to their misalignment with Environmental, Social, and Governance (ESG) criteria (see Principles for Responsible Investment (PRI) Association 2018). In contrast, ESG integration actively incorporates environmental concerns, social characteristics, and governance criteria into investment decisions (see GSIA 2021). Instead of eliminating certain industries, ESG integration puts less weight on investments with low ESG scores[4] and focuses on investments with high ESG scores.

Next to the SFDR classification and the (sustainable) investment strategy, the risk–return profile is provided using the Synthetic Risk and Reward Indicator (SRRI), which indicates the level of historical fluctuations in the fund unit price on a scale of 1 (low risk, low expected return) to 7 (high risk, high expected return), as described in the key investor information document. In addition, ongoing costs are displayed, which comprise annual costs relative to the invested capital, such as management fees (see Bassen et al. 2019).

In summary, the funds in our study are characterized by the classification according to the SFDR, the applied (sustainable) investment strategy, the risk–return profile as well as ongoing costs.

[3] In addition, Article 5 of the EU Taxonomy (see European Parliament and European Council 2019) applies to financial products being classified either according to Article 8 or 9 of the SFDR and contribute to at least one environmental objective. This Article 5 further requires funds to disclose the share of investments in environmentally sustainable economic activities as a percentage of the total amount of investments.

[4] ESG scores, e.g., provided by MSCI ESG Research, measure the degree of ESG criteria considered in an investment. The higher (lower) the ESG score, the more (less) sustainable the investment. For further information, see, e.g., https://www.msci.com/our-solutions/esg-investing/esg-ratings.

Hypotheses and methodology

To study the influence of sustainability factors and financial indicators on private investors' demand for sustainable funds, we conduct two CBC experiments. In what follows, first the hypotheses are derived and then the methodology is explained.

Development of hypotheses

Sustainability classification according to the SFDR

As stated in Section "Literature review," empirical evidence shows that (certain) consumers may prefer sustainable funds compared to funds without sustainability characteristics (see Ammann et al. 2019; Bauer et al. 2021; Gutsche and Ziegler 2019; Huang et al. 2020; Lagerkvist et al. 2020; Riedl and Smeets 2017; Rossi et al. 2019). Nevertheless, the effect of prudentially required product classifications on investor demand has only been investigated by Becker et al. (2022) in the context of fund flows. The authors find that capital inflows of private investors increase for Article 8 and 9 classifications compared to less sustainable funds. Therefore, we aim to investigate the effect of the disclosure requirements according to the SFDR on investment decisions by referring to the following three classifications: according to Article 8, according to Article 9, or no sustainable product classification. Different studies additionally observe that better sustainability ratings increase private investors' demand for sustainable funds (see Aasheim et al. 2022; Ammann et al. 2019; Huang et al. 2020). We transfer these findings to regulatory prescribed product classifications and assume that prudentially defined disclosure requirements have the potential to positively influence private investors' demand for sustainable funds underlying ULIPs or fund savings plans, whereby the measurement is explained later:

H1a Private investors assign higher average part-worth utilities to funds being classified according to Article 8 than to funds without sustainable product classification.

H1b Private investors assign higher average part-worth utilities to funds being classified according to Article 9 than to funds without sustainable product classification.

H1c Private investors assign higher average part-worth utilities to funds being classified according to Article 9 than to funds being classified according to Article 8.

Applied sustainable investment strategy

Since the SFDR does not set any standards for the integration of sustainable investment strategies, we consider such strategies as a separate product attribute. We focus on the two most common types of sustainable investment strategies in the German insurance industry, namely negative screening and ESG integration (see FNG 2022),

as well as a combination of both. Empirical studies show different results regarding which strategy is preferred by private investors. While Lagerkvist et al. (2020) find stronger preferences for negative screening compared to ESG integration, Wins and Zwergel (2016) in contrast observe that ESG integration exhibits a higher relative importance for retail investors than negative screening. As ESG integration actively incorporates sustainability aspects into investment processes, but negative screening is a rather passive approach since it only excludes investments that do not meet sustainability criteria (see Cappucci 2018), we hypothesize the following:

H2 Private investors assign higher average part-worth utilities to ESG integration than to negative screening.

Risk–return profile

As a third product attribute, we consider the risk–return profile based on the SRRI. Mutual funds with a low (high) SRRI exhibit a lower (higher) price volatility and a lower (higher) likelihood of temporary capital losses (see Lingnau et al. 2022), but also lower expected returns. We restrict possible SRRI expressions to level 2 (low) to 6 (high), since the remaining levels 1 and 7 are less likely to occur in practice. Fuino et al. (2020) investigate changes in preferences for guarantees in life insurance savings products with different risk–return profiles and find that consumers prefer savings policies with lower risks, even though such products face lower expected returns. On the other hand, survey results of Wins and Zwergel (2016) reveal that certain types of investors are willing to accept higher risks in exchange for higher expected returns. Since this only focuses on certain investor types, we incorporate SRRI as a performance indicator and assume

H3 Private investors assign higher average part-worth utilities to lower SRRI profiles than to higher SRRI profiles.

Ongoing costs

We further study the influence of a fund's ongoing costs. On the one hand, ongoing costs have a negative effect on the overall returns of a fund, provided that all other factors are held constant. On the other hand, funds with higher ongoing costs may have the potential to outperform passively managed funds due to active management and extensive market analyses (see Easley et al. 2021). In general, the influence of ongoing costs on sustainable investment decisions depends on the type of investor as well as the offered fund (see Bassen et al. 2019; Wins and Zwergel 2016). Analogously to Bassen et al. (2019), who find that a fund's costs tend to exhibit a higher relative importance than its information on sustainability-related aspects, we assume (measurement is laid out later) the following:

H4a Private investors assign a higher relative importance to ongoing costs than to SFDR classifications.

Table 1 CBC experiment—product attributes and levels

Attribute (k)	Levels (l)
(1) Sustainability classification according to Directive (EU) 2019/2088	(1) Article 9 (explicit sustainable investment focus) (2) Article 8 (promotion of sustainability aspects, but sustainability not as a primary objective) (3) No sustainable product classification
(2) Sustainable investment strategy	(1) Negative screening and ESG integration (2) ESG integration (3) Negative screening (4) No sustainable investment strategy
(3) Risk–return profile	Levels from 2 (low risk, low return) to 6 (high risk, high return)
(4) Ongoing costs	(1) 0.5% (2) 1.0% (3) 1.5% (4) 2.0%

H4b Private investors assign a higher relative importance to ongoing costs than to sustainable investment strategies.

The range of possible cost levels thereby varies from 0.5 to 2.0% in line with actual fund costs in the German investment market, whereby the application of uniformly distributed intervals allows an enhanced informative value of the resulting key figures. Furthermore, a cost level of 0% is omitted due to its limited practical relevance and the fact that this would not allow to calculate the resulting MWTP (see Eq. (6) for the precise formula).

Table 1 summarizes the product attributes and levels used in the study.

Methodology

Generic CBC analysis as a multivariate analysis method serves to determine individual preferences for different product options, where individuals have to choose the most preferred product profile among a set of different product alternatives (see, e.g., Louviere and Woodworth 1983). In many cases, the decomposition method of conjoint analyses is applied to investigate consumer preferences for new types of products or for products with partially new features (see Lancaster 1966), which fits to our setting since we integrate sustainability classifications as a recently introduced product attribute for investments in combination with ULIPs. We follow Braun et al. (2016), Fuino et al. (2020), and Gatzert and Hanika (2023) by using a multinomial logit model as central CBC approach. Based on Louviere and Woodworth (1983), we assume that an individual participant i faces a choice set from which to choose one product combination j, which consists of different levels l from a fixed number of product attributes K. Following Klarmann and Feurer (2018), we consider a linear-additive utility model and account for the deterministic utility of product combination j, which is defined by

$$U_{i,j} = \sum_{k=1}^{K} \sum_{l=1}^{L_k} \beta_{i,k,l} \cdot x_{j,k,l}, \tag{1}$$

where the dummy variable $x_{j,k,l}$ determines the attributes and levels of alternative j and $\beta_{i,k,l}$ describes the utility of individual i, if the product's attribute k equals level l. As described in Braun et al. (2016), the deterministic utility $U_{i,j}$ of individual i and product combination j can be extended by adding a stochastic component $\epsilon_{i,j}$:

$$V_{i,j} = U_{i,j} + \epsilon_{i,j}. \tag{2}$$

If the error term $\epsilon_{i,j}$ follows a Gumble distribution, the model can be linked to random utility theory (see McFadden 1974) and allows for the derivation of a multinomial logit model as central CBC approach. This can be expressed as

$$P(i = j|J) = \frac{\exp(U_{i,j})}{\sum_{k \in J} \exp(U_{i,k})}, \tag{3}$$

and denotes the probability of individual i choosing alternative j from a set of Alternatives J (see also Louviere and Woodworth 1983). Given the multinomial logit model in Eq. (3), the hierarchical Bayes (HB) method is used to estimate part-worth utilities β_i on an individual level, which is superior to classical regression methods that are used to estimate part-worth utilities on an aggregate level but do not account for a population's heterogeneity (see Lenk et al. 1996).

We further introduce the variable $W_{i,k}$ as the relative importance of a product attribute k for individual i based on Braun et al. (2016), Fuino et al. (2020), and Gatzert and Hanika (2023):

$$W_{i,k} = \frac{\max_l\{\beta_{i,k,l}\} - \min_l\{\beta_{i,k,l}\}}{\sum_{k=1}^{K}(\max_l\{\beta_{i,k,l}\} - \min_l\{\beta_{i,k,l}\})}. \tag{4}$$

Thus, the relative importance can be computed by expressing the respective range of utilities for each attribute as a percentage of the corresponding sum of all attributes. It indicates the maximum impact a product attribute can have on consumer preferences, so that for product attributes with a high relative importance to the consumer, small changes in product combinations can lead to large changes in preferences.

Following Braun et al. (2016), we use Markov chain Monte Carlo HB estimation to calculate the part-worth utilities on an individual level. Given the part-worth utilities in Eq. (1), we further compute standardized normalized preference values $\beta_{k,l}$ for each level expression by subtracting the average attribute utility $\overline{\beta}_k = 1/L_k \cdot \sum_{l=1}^{L_k} \overline{\beta}_{k,l}$ from the average level part-worth utility $\overline{\beta}_{k,l} = 1/n \cdot \sum_{i=1}^{n} \beta_{i,k,l}$ and by dividing through the maximum utility gain, leading to

$$\beta_{k,l} = \frac{\overline{\beta}_{k,l} - \overline{\beta}_k}{\sum_{k=1}^{K}(\max\left\{\overline{\beta}_{k,l}\right\} - \min\left\{\overline{\beta}_{k,l}\right\})}. \tag{5}$$

Analogously to Braun et al. (2016), we assume that the price attribute $k = 4$, which in our model refers to a funds' ongoing costs, comprises the price level

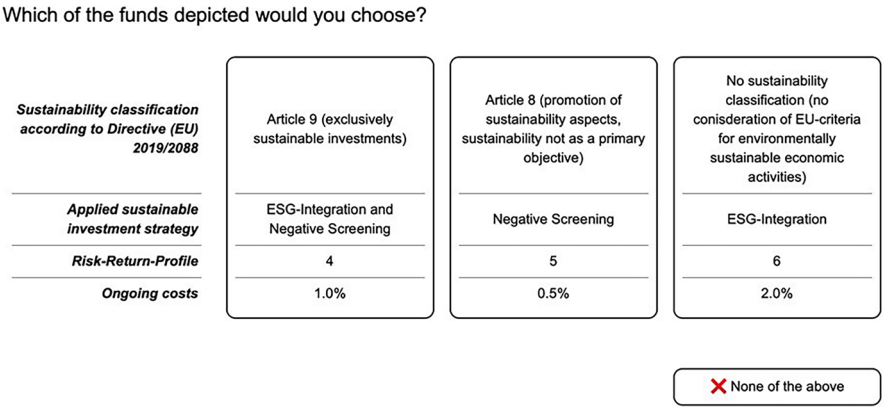

Fig. 1 Illustrative choice-based conjoint task retrieved from Conjointly (translated from German, see Table 1 for a description of the categories)

expressions $p_1, \ldots p_L$, so that the MWTP of individual i for changing a non-price attribute $k \neq 4$ from level m to level h can be calculated as follows:

$$MWTP_{i,k}(h,m) = \frac{\max_l\{p_l\} - \min_l\{p_l\}}{\max_l\{\beta_{i,4,l}\} - \min_l\{\beta_{i,4,l}\}} \cdot (\beta_{i,k,h} - \beta_{i,k,m}). \tag{6}$$

Survey design

For both CBC experiments, the paid service of the survey platform Conjointly is used to establish a high-quality survey panel.[5] After designing the initial survey, we pretested the experimental setting with 50 individuals not participating in the study to ensure understandability. The participants' age was restricted to a range of 18–55 years in line with comparison platforms such as www.check24.de, which typically limit the maximum age of concluding a unit-linked insurance policy to 55.[6] To enhance the quality of responses, both experiments were further limited to desktop users, i.e., smartphones were not allowed.[7]

Prior to the start of the choice tasks, a realistic scenario was presented to the survey participants as shown in Table 6 in the Appendix. Next, the participants were asked to complete a set of twelve choice situations in total (see Fig. 1 for an illustrative question), where they had to choose one alternative from a set of three randomly

[5] For further information on the creation and evaluation of surveys as well as specific components of a conjoint analysis, see https://conjointly.com/.

[6] The age restriction of 55 is further suitable against the background of the current German statutory retirement age of 67 and a minimum contract term of 12 years to be able to profit from tax benefits (see Sect. 2.1).

[7] Conjointly further provides incentives such as monetary-payouts, coupons, or vouchers for participants and monitors the quality of responses.

drawn purchase options and a no-buy option (see Lingnau et al. 2022).[8] The selection tasks were created by Conjointly based on a controlled random experiment by applying the balanced overlap method. The way of presentation of the four product attributes (see Table 1) is equal for all twelve questions, as illustrated in Fig. 1. For all attributes, a short explanation is provided at the bottom of each of the twelve selection tasks to ensure that the respondents understand the respective investment product correctly (see Table 7).

After having completed the twelve selection tasks, three questions were asked: first, regarding gender, second, regarding the participants' age,[9] and third, whether participants already owned a life insurance policy in case of the ULIPs scenario or, for the fund savings plans experiment, whether they already have experience with sustainable investments.[10] Next, three control questions followed, where the participants were asked how easy they could relate to the initially introduced purchase situation, how easy it was to make a decision (in both cases on a scale from 1 "I do not agree at all" to 7 "I fully agree"), and if they understood whether Article 9 or Article 8 represents the "more sustainable" product.[11] The survey ended with three questions about the participants' educational background, job, and income, with possible options laid out in Table 8.

Empirical results

Sample statistics

Our balanced survey panel comprises 222 (202) respondents for the experiment on ULIPs (fund savings plans). After excluding participants with fraudulent behavior,[12] and only including respondents who evaluated the comprehensibility of the introductory situation and their own decision-making ability at least with a 3 out of 7, 198 (189) remaining respondents are included in the analysis. The final ULIPs (fund savings plans) sample consists of 44.9% (41.3%) female and 55.1% (58.7%) male participants, with a median age of 41.0 (39.5) years. Further demographic characteristics are summarized in Table 8.

In the survey on ULIPs, a no-buy option has been selected in 14.9% and in the fund savings plans experiment in 12.6% of the selection tasks. In the ULIPs

[8] Having no more than five levels per attribute thereby ensures a reliable estimation procedure (see Green and Srinivasan 1978).

[9] For the participants' gender, a single-choice question was asked (male, female, diverse). To indicate their age, respondents had to enter a numerical value from 18 to 100 (values higher than 55 are subsequently excluded from the sample).

[10] Information on past experience was requested in the form of a closed single answer question.

[11] Given responses for the control question were "Article 9 funds are more sustainable than Article 8 funds," "Article 9 funds are less sustainable than Article 8 funds," "Article 9 funds were not addressed in the survey," and "Article 9 funds are not connected to sustainable investments."

[12] Conjointly automatically excludes respondents answering the questions too fast, too slow (if completing the survey takes longer than 30 min), insufficiently moving the mouse, or with missing scroll behavior.

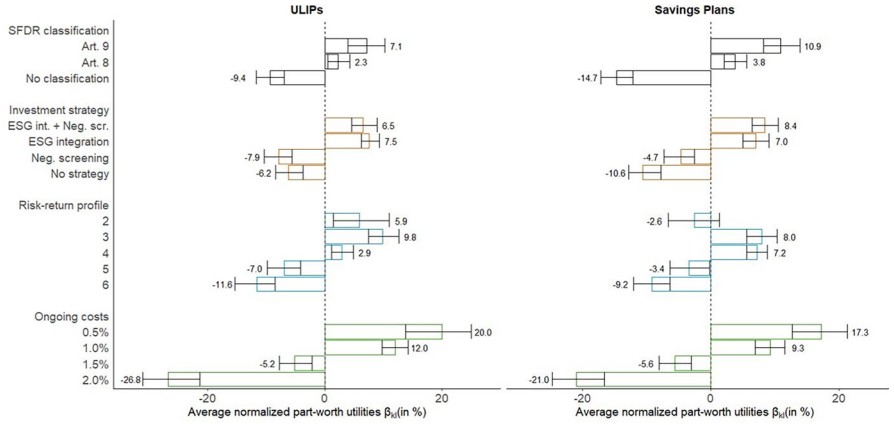

Fig. 2 Average normalized part-worth utilities $\beta_{k,l}$ (see Eq. (5)) for the different attribute levels for unit-linked life insurance (ULIPs) and fund savings plans with 95% confidence intervals (see Table 1 for a description of the categories)

experiment, 68.2% of the participants state that they already have a life insurance contract, and 43.6% of the fund savings plans respondents already have experience with sustainable investments. For each experiment, individual part-worth utilities have been derived by Conjointly by fitting a multinomial logit model with Markov chain Monte Carlo HB estimation as described in Eq. (3) to calculate individual part-worth utilities β_i. This results in a McFadden's pseudo R^2 of 53.2% for the ULIPs experiment and 49.8% for the fund savings plans experiment.

Individual part-worth utilities and relative importance

Figure 2 shows the average normalized part-worth utilities (see Eq. (5)) for both experiments, where a larger utility range implies that a product attribute is perceived as more important by the average respondent. We thereby assume that each individual i chooses the alternative that provides the highest utility values and can hence be characterized as a utility maximizer. The single utility ranges (difference between normalized part-worth utilities of the most and the least preferred level) for the four product attributes sum up to 100%. Figure 2 thus indicates that ongoing costs are considered as the most important product attribute in both experimental settings with a larger utility range for ULIPs than savings plans, whereby average preferences strongly decrease for higher cost levels.

Considering the SFDR classification, t tests in Table 2 show that Article 8 and Article 9 funds exhibit significantly higher average part-worth utility values compared to no SFDR classification, indicating that private investors exhibit significant preferences for funds classified as sustainable underlying a unit-linked life insurance product, which is in line with H1a and H1b. In addition, we find support for H1c, since Article 9 funds show statistically significant higher part-worth utilities than Article 8 funds in both experiments, whereby preferences for Article 9 and 8 funds are higher in the savings plans setting as compared to the ULIPs experiment.

Table 2 Results of the one-sided paired t tests for the differences between means of part-worth utilities of different product attribute levels $\overline{\beta}_{k,l} = 1/n \cdot \sum_{i=1}^{n} \beta_{i,k,l}$ (see Eq. (5) and Table 1 for a description of the categories)

Mean part-worth utilities	ULIPs			Savings plans		
	Difference	t	p value	Difference	t	p value
SFDR classification						
$\overline{\beta}_{\text{Article 9}} > \overline{\beta}_{\text{No classification}}$	0.59***	5.97	< 0.0001	0.81***	8.143	< 0.0001
$\overline{\beta}_{\text{Article 8}} > \overline{\beta}_{\text{No classification}}$	0.42***	8.4858	< 0.0001	0.59***	10.367	< 0.0001
$\overline{\beta}_{\text{Article 9}} > \overline{\beta}_{\text{Article 8}}$	0.17**	2.198	0.0291	0.22***	3.4327	0.0007
Sustainable investment strategy						
$\overline{\beta}_{\text{ESG–Integration}} > \overline{\beta}_{\text{Neg. Screening}}$	0.55***	12.108	< 0.0001	0.38***	7.7724	< 0.0001
Risk–return profile						
$\overline{\beta}_{\text{SRRI=2}} > \overline{\beta}_{\text{SRRI=3}}$	− 0.14	− 2.7172	0.9964	− 0.33	− 6.2629	1
$\overline{\beta}_{\text{SRRI=3}} > \overline{\beta}_{\text{SRRI=4}}$	0.25***	3.9521	< 0.0001	0.03	0.8214	0.2062
$\overline{\beta}_{\text{SRRI=4}} > \overline{\beta}_{\text{SRRI=5}}$	0.35***	8.9437	< 0.0001	0.36***	7.5421	< 0.0001
$\overline{\beta}_{\text{SRRI=5}} > \overline{\beta}_{\text{SRRI=6}}$	0.17***	4.3775	< 0.0001	0.19***	4.0941	< 0.0001

*** and ** denote statistical significance at the 1% and 5% levels

With respect to the applied investment strategy, ESG integration displays the highest part-worth utilities in Fig. 2, followed by the combination of ESG integration and negative screening in case of the ULIPs experiment. Negative screening as a single strategy even leads to a decrease in utility, whereby this decrease is more pronounced as compared to "no sustainable investment strategy" in the ULIPs experiment. This can be explained by the fact that screening strategies might be perceived as comprising higher costs (see Gutsche and Zwergel 2020) for insufficient reward, leading to lower average utility values. Moreover, investors might value diversification effects and thus refrain from omitting companies through negative screening, since this could lead to an exclusion of profitable companies and expected losses in performance (see Trinks and Scholtens 2017). Consequently, H2 is supported, as Table 2 further shows highly significant results (p value < 0.0001) for the difference in mean part-worth utilities between ESG integration and negative screening. Thus, our results for unit-linked life insurances are in line with Wins and Zwergel (2016), where the inclusion of ESG criteria is preferred over negative screening, but contradict the findings of Lagerkvist et al. (2020), who identify negative screening as the most popular investment strategy as compared to positive screening, active engagement, sustainable themed investments, and no strategy.

With respect to risk–return profiles, lower SRRIs are generally preferred over high-risk funds with high expected returns, except for the lowest SRRI level 2 (low risk, low expected return). Participants in the fund savings plans experiment even exhibit negative part-worth utilities for the lowest SRRI value. Accordingly, we find no statistical support for H3 since resulting t tests reveal that the comparison of SRRI levels 2 and 3 even implies negative differences with high p-values for both experiments. A possible explanation for the lowest risk–return profile (SRRI level

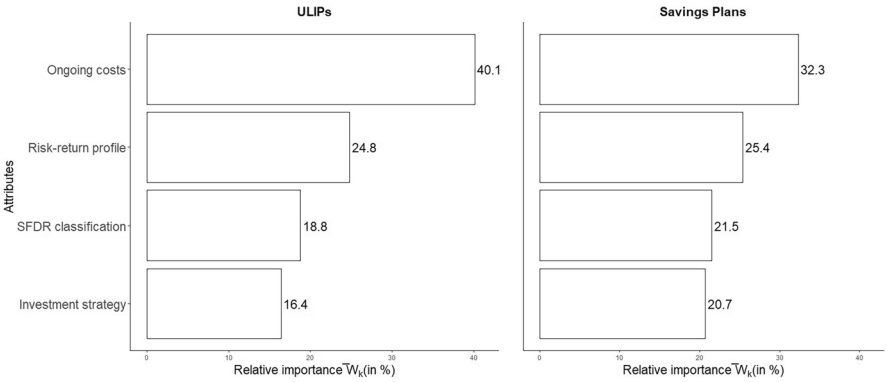

Fig. 3 Comparison of mean relative importance ($\overline{W}_k$) (see Eq. (4)) per product attribute for ULIPs and savings plans (see Table 1 for a description of the categories)

2) resulting in more negative values for fund savings plans than for ULIPs could be that for unit-linked life insurances, the return from the investment could also affect the insurance component that participants associate with a unit-linked life insurance product (e.g., the option of a lifelong annuity as described in the introduction of the survey). Hence, it also becomes evident that private investors exhibit heterogeneous investment preferences (see Fuino et al. 2020; Lingnau et al. 2022; Luca et al. 2023), which vary depending on the respective purchase situation. With respect to ongoing costs, as expected, Fig. 2 shows that average preferences are monotonically decreasing for both products, with positive average utilities for 0.5% and 1.0% and negative average utilities for 1.5% and 2.0%.

Figure 3 displays the mean relative importance of each attribute according to Eq. (4), with consistent results for both products. It can be seen that ongoing costs are considered as even more important in the ULIPs experiment compared to the fund savings plans setting, while the sustainability attributes exhibit a lower relative importance. One reason for the high relevance of costs might be that the contract term is predefined in the case of ULIPs, whereas savings plans do not have a fixed maturity. Consequently, savings plans can be terminated at an "opportune" time, potentially enabling investors to offset higher costs, so that they attach a lower relative importance to ongoing costs as compared to policyholders of ULIPs.

Figure 3 additionally shows that investment strategies represent the least important product attribute, followed by SFDR classification. This suggests that participants primarily focus on risk–return profiles and ongoing costs but put less weight on sustainable product attributes, which is not only the case for ULIPs, but also for fund savings plans. Moreover, t tests support the statistical significance of H4a and H4b, since ongoing costs show a significantly higher relative importance than both sustainable product attributes (p values result in < 0.0001 for ULIPs and savings plans using one-sided paired t tests for $\overline{W}_{\text{Ongoing costs}} > \overline{W}_{\text{SFDR}}$ and $\overline{W}_{\text{Ongoing costs}} > \overline{W}_{\text{Strategy}}$). When comparing the mean relative importance for sustainable product attributes of the ULIPs and the savings plans experiment, we find statistical support for participants from the ULIPs experiment to assign a higher

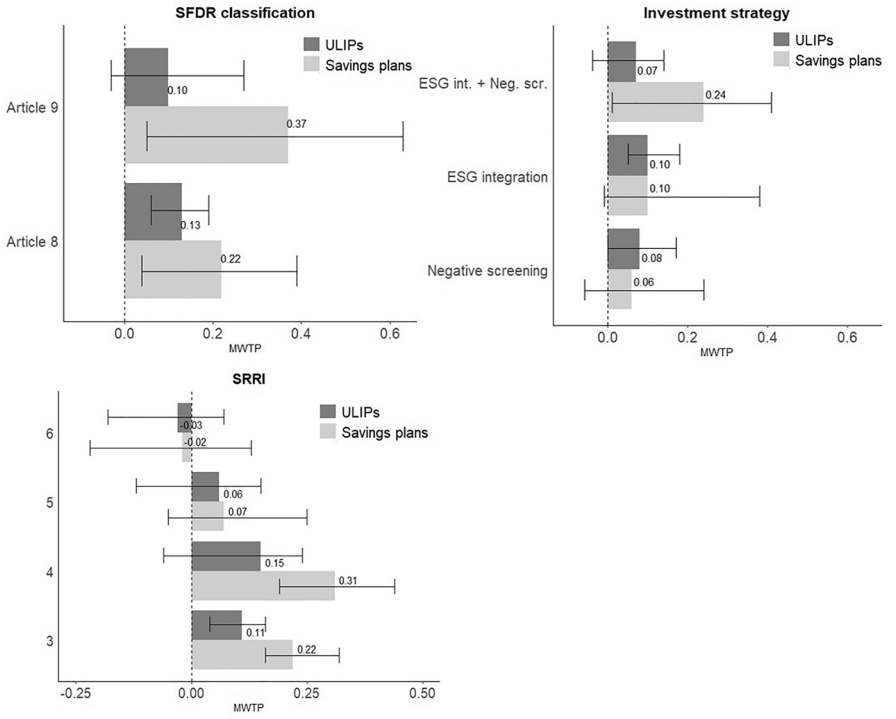

Fig. 4 MWTP in terms of ongoing costs (see Eq. (6)) for changes in product attributes of ULIPs and fund savings plans (see Table 1 for a description of the categories). The figure shows the MWTP (with 95% CI) for the non-financial product attributes "SFDR classification," "Applied sustainable investment strategy," and "Risk–return profile" relative to the specific reference points "no sustainable product classification," "no applied sustainable investment strategy," and "SRRI level 2." The MWTP describes how much more or less the median consumer is willing to pay if an attribute changes from the given reference point to another specific level (see Eq. (6))

relative importance to cost as well as risk–return factors than participants from the savings plans setting (additionally conducted one-sided paired t tests reveal a p-value of 0.0481 for $\overline{W}_{\text{SFDR (Savings plans)}} > \overline{W}_{\text{SFDR (ULIPs)}}$ and a p value < 0.0001 for $\overline{W}_{\text{Strategy (Savings plans)}} > \overline{W}_{\text{Strategy (ULIPs)}}$).

Marginal willingness to pay

As described before, the MWTP indicates how much more or less the median respondent is willing to pay relative to a selected baseline for a changing level of the respective non-price attribute.[13] Figure 4 shows that the median respondents of the ULIPs experiment are willing to accept 0.10 (0.13) percentage points higher ongoing costs if the product is classified according to Article 9 (8) as compared to a fund without sustainability classification (with large confidence intervals specifically for

[13] Note that the data for the MWTP are directly taken from Conjointly.

Article 9 funds). In the fund savings plans experiment, in comparison, this increase is larger with about 0.37 (0.22) percentage points. Against the background of our range of 0.5 to 2% for ongoing costs, the increase in MWTP for sustainability attributes is not very extensive. However, confidence intervals are rather large, especially in case of the savings plans, indicating some heterogeneity in responses.

Regarding the applied investment strategy, participants deciding about a fund underlying unit-linked life insurance products exhibit a slightly higher MWTP for a sustainable investment strategy (compared to none), ranging from a median 0.07 to 0.10 percentage points, again with large confidence intervals. When comparing this result with fund savings plans, a much higher increase in MWTP for a sustainable investment strategy (compared to none) can be seen in case of the combined ESG integration with negative screening. This is reflected in a median increase of 0.24 percentage points for the combined strategy, and 0.10 as well as 0.06 for the single strategies. In addition, in the ULIPs setting, respondents are willing to pay 0.08 percentage points more for negative screening compared to no sustainable investment strategy, even though negative screening exhibits lower part-worth utility values compared to no sustainable investment strategy (see Fig. 2). This can be explained by the fact that the MWTP is calculated based on the median, which is considerably more robust against outliers, as indicated by the large confidence intervals, whereas part-worth utilities are calculated based on mean values. Overall, one can see that changes in levels of SFDR classification result in a higher willingness to accept additional costs as compared to implementing a sustainable investment strategy, which is in line with the relative importance of the respective product attributes (see Fig. 3).

Considering the MWTP for the risk–return profile, Fig. 4 additionally shows that for both experiments, participants are willing to accept higher ongoing costs for changes from SRRI level 2 to a higher risk–return indicator, except for changes from level 2 to level 6, for which the MWTP even results in negative values. Thus, it can be deduced that changes from low SRRI values to higher scales are associated with an acceptance for higher ongoing costs, but in case of level 6, participants are not willing to pay more for a fund with the highest risk–return indicator compared to a fund that is characterized by the lowest possible SRRI value. Finally, the figure confirms that participants from the ULIPs experiment exhibit a lower willingness to accept risks in exchange for higher possible returns than respondents from the savings plans setting. Thus, the insurance background introduced in the ULIPs experiment appears to result in less risky investment behavior in terms of a lower MWTP for higher SRRI levels.

Further analyses

In further analyses, we study whether there is a difference between groups with and without experience in life insurance products (or sustainable investing). Based on the descriptive statistics in Table 3, participants in the ULIPs experiment with experience in life insurance products seem to exhibit stronger preferences for Article 9 and a more pronounced dispreference for products not

Table 3 Average normalized part-worth utilities ($\beta_{k,l}$) (see Eq. (5)) and average relative importance ($\overline{W}_k$) (see Eq. (4)) per subgroup (see Table 1 for a description of the categories)

	ULIPs				Savings plans			
	Participants that own life insurance products ($n=135$)		Others ($n=63$)		Participants with experience in sustainable investing ($n=87$)		Others ($n=102$)	
	$\beta_{k,l}$ (%)	$\overline{W}_k$(%)	$\beta_{k,l}$(%)	$\overline{W}_k$(%)	$\beta_{k,l}$(%)	$\overline{W}_k$(%)	$\beta_{k,l}$(%)	$\overline{W}_k$(%)
SFDR classification		18.2		20.1		21.4		21.5
Article 9	7.5		6.2		12.0		10.3	
Article 8	2.6		1.7		5.4		3.0	
No classification	− 10.1		− 7.9		− 17.4		− 13.2	
Sustainable investment strategy		17.0		15.0		22.6		19.1
ESG integration and negative screening	8.7		2.2		13.0		6.0	
ESG integration	7.8		6.9		10.4		5.2	
Negative screening	− 8.4		− 6.6		− 8.8		− 2.7	
No sustainable investment strategy	− 8.1		− 2.4		− 14.6		− 8.5	
Risk-return profile		24.9		24.3		26.3		25.1
2 (lowest)	3.3		10.8		− 3.2		− 2.3	
3	8.8		11.6		10.1		6.8	
4	3.2		2.1		6.2		7.7	
5	− 5.4		− 9.8		− 2.7		− 3.7	
6 (highest)	− 9.9		− 14.7		− 10.4		− 9.1	
Ongoing costs (%)		39.8		40.6		29.6		34.2
0.5	20.1		19.5		9.0		21.0	
1.0	10.4		14.9		6.0		10.9	
1.5	− 3.9		− 7.6		− 1.4		− 7.8	
2.0	− 26.6		− 26.7		− 13.6		− 24.1	

satisfying the sustainability classification than participants that do not have this previous experience. With respect to the underlying investment strategy, negative screening leads to a decrease in part-worth utilities, as observed before. Additionally, in case of the savings plans experiment, respondents that are experienced with sustainable investments show higher utility values for a combination of ESG integration and negative screening as well as for the single application of ESG integration than participants without experience. Considering risk–return profiles, lower SRRIs are again preferred over higher risk–return indicators in each subgroup, except for the lowest risk–return profile of level 2, leading to positive average preferences in the ULIPs experiment (especially high for those who do not own life insurance products), but resulting in negative utility values for the savings plans experiment.

Table 4 Average part-worth utilities ($\beta_{k,l}$) (see Eq. (5)) and average relative importance ($\overline{W}_k$) (see Eq. (4)) for participants with correct control question (overall sample in *italics*) (see Table 1 for a description of the categories)

	ULIPs ($n=121$)		Savings plans ($n=114$)	
	$\beta_{k,l}$ (%)	$\overline{W}_k$(%)	$\beta_{k,l}$(%)	$\overline{W}_k$(%)
SFDR classification		18.0		22.5
Article 9	10.1 (*7.1*)		12.3 (*10.9*)	
Article 8	1.5 (*2.3*)		3.8 (*3.8*)	
No classification	− 11.6 (*− 9.4*)		− 16.1 (*− 14.7*)	
Sustainable investment strategy		16.2		19.7
ESG int. and neg. screening	7.6 (*6.5*)		8.9 (*8.4*)	
ESG integration	7.3 (*7.5*)		6.5 (*7.0*)	
Negative Screening	− 7.6 (*− 7.9*)		− 3.7 (*− 4.7*)	
No sustainable investment strategy	− 7.4 (*− 6.2*)		− 11.6 (*− 10.6*)	
Risk-return profile		24.1		25.8
2 (lowest)	3.5 (*5.9*)		− 1.9 (*− 2.6*)	
3	8.3 (*9.8*)		7.3 (*8.0*)	
4	2.8 (*2.9*)		6.5 (*7.2*)	
5	− 5.4 (*− 7.0*)		− 2.8 (*− 3.4*)	
6 (highest)	− 9.2 (*− 11.6*)		− 9.1 (*− 9.2*)	
Ongoing costs (%)		41.7		32.0
0.5	19.3 (*20.0*)		15.6 (*17.3*)	
1.0	10.2 (*12.0*)		8.7 (*9.3*)	
1.5	− 3.4 (*− 5.2*)		− 5.0 (*− 5.6*)	
2.0	− 26.2 (*− 26.8*)		− 19.3 (*− 21.0*)	

Since only 61.1% (60.3%) of all participants in the ULIPs (savings plans) experiment answered the control question on Article 9 funds correctly, we further investigate whether the investment behavior of this subgroup significantly differs from the overall sample in Table 4 by analyzing average normalized part-worth utilities and the average relative importance.

Table 4 indicates that participants with a correct control question exhibit higher part-worth utilities for Article 9 funds and lower or at least no higher utility values for Article 8 funds in both experiments compared to the overall sample. Moreover, the decrease in utility for respondents with correct control question is more pronounced for no sustainable product classification in both settings compared to participants who did not fully understand the difference between funds being classified either according to Article 8 or 9. In general, respondents assign the highest relative importance towards ongoing costs, regardless of whether they understand the differences between Article 8 and Article 9 funds or not. Notably, participants in the ULIPs experiment consistently attribute greater importance to ongoing costs as compared to respondents from the savings plans experiment.

Table 5 Average relative importance $\overline{W}_k$ (see Eq. (4)) dependent on gender, age, educational background, and net income (see Table 8 for the number of participants per subgroup and Table 1 for a description of the categories)

	ULIPs				Savings plans			
	SFDR classification	Investment strategy	Risk–return profile	Ongoing costs	SFDR classification	Investment strategy	Risk–return profile	Ongoing costs
Gender								
Female	19.4%	15.1%	25.3%	40.3%	22.7%	20.0%	26.0%	31.4%
Male	18.3%	17.5%	24.3%	39.9%	20.8%	21.3%	25.0%	33.0%
p value	0.5498	0.0667(*)	0.6189	0.9048	0.7495	0.3619	0.6654	0.2595
Age								
18–40	20.5%	19.0%	25.9%	34.6%	20.1%	22.3%	26.0%	31.6%
41–55	17.3%	14.1%	23.7%	44.9%	23.4%	18.7%	24.6%	33.3%
p value	0.0655(*)	0.0003(***)	0.2600	0.0001(***)	0.1004	0.0103(**)	0.4682	0.5049
Educational background								
Non-academic	18.7%	15.3%	24.7%	41.3%	21.4%	19.4%	23.1%	36.0%
Academic	18.9%	17.6%	24.8%	38.7%	21.7%	21.8%	27.3%	29.2%
p value	0.9237	0.0879(**)	0.9758	0.3571	0.8876	0.1690	0.1678	0.8767
Net income								
< 2,000€	20.0%	16.6%	24.3%	39.1%	22.5%	21.0%	20.7%	35.8%
≥ 2,000€	18.2%	16.3%	25.0%	40.5%	21.2%	20.6%	27.3%	30.9%
p value	0.3437	0.8531	0.7637	0.6126	0.4908	0.7328	0.1500	0.8901

p values are reported for differences in means based on two-sided *t* tests. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels

Finally, following Luca et al. (2023), we study the relative importance of attributes dependent on socioeconomic characteristics by differentiating according to the participants' gender, age, educational background, and net income, as displayed in Table 5.[14]

Table 5 shows no significant differences in means between female and male participants regarding preferences for the SFDR classification and risk–return profile (SRRI values), except for the applied investment strategy in case of ULIPs, which is of higher relevance for male participants with a p value of 0.0667, indicating a weak statistical significance at the 10% level. In addition, participants in the higher age group of 41–55 years attach a significantly lower average relative importance to the applied investment strategy as compared to the age group of 18–40, which is not only the case for ULIPs but also for savings plans. This is in contrast to ongoing costs, which are considered significantly more important by older participants in the ULIPs experiment than by younger ones. In addition, ULIPs participants with an academic degree attach a higher relative importance to the applied investment strategy than non-academic participants, with weak statistical significance (p value of 0.0879; no statistical significance for savings plans). All other factors do not show any significant differences regarding the educational background, and there is also no statistical difference between respondents with different disposable net income.

Summary

This paper investigated the role of sustainable product attributes for the selection of funds underlying unit-linked life insurance policies. To the best of our knowledge, this study is the first to analyze the effect of regulatory prescribed product classifications according to the SFDR in combination with sustainable investment strategies on individual investment behavior of unit-linked life insurance policies by studying the marginal willingness to pay and relative importance of sustainable product attributes as compared to performance indicators and costs. Our results are then compared to fund savings plans as a financial product alternative. The analysis is based on web-based survey experiments with German participants and choice-based conjoint analyses.

In contrast to existing literature on sustainable funds, our CBC analysis suggests that while individuals do value sustainable product attributes when purchasing unit-linked life insurances, they are currently much more sensitive towards costs and risk–return profiles. The preferences in case of savings plans are generally similar. Furthermore, the resulting MWTPs show that on average, private ULIPs investors are willing to pay (slightly) more for funds being classified according to the SFDR (Article 8 or 9) over no classification and for a sustainable investment strategy (i.e., ESG integration, negative screening, or a combination of both). Furthermore, we find statistical evidence for investors' sustainability preferences to be

[14] Non-academic refers to respondents with either a primary school diploma, secondary school diploma, or high school diploma as their highest level of education. Academic refers to participants with a bachelors' degree, masters' degree, state exam, or PhD as their highest level of education

product-dependent, since investors in unit-linked life insurance policies exhibit a significantly lower relative importance for sustainable product attributes compared to the savings plans setting without insurance context.

To address limitations and opportunities for future extensions, our study is restricted to a German sample and the results were gained from an online experiment, so that the investment behavior might differ when conducting laboratory experiments with stricter supervision or incentive-compatible experiments. Furthermore, we only briefly studied the impact of socioeconomic and financial factors on preferences, which would be an interesting stand-alone investigation. Overall, the results of our CBC analysis indicate how private investors react in the respective settings, but not why, which could be subject to future research. Avenues for further investigations also include the analysis of participants' decision-making if they could choose between ULIPs and savings plans, and thus potentially between more or less complex product designs. Moreover, the impact of the insurance component of the ULIPs should be addressed in more detail, e.g., by focusing on death benefits, tax benefits, switching between funds as well as maturity benefits along with the annuitization option. Overall, our study provides a first indication that German private investors in our sample do value sustainable product attributes in unit-linked life insurances, but not as much as they value risk–return profiles and ongoing costs. Finally, sustainability might be of lower relevance for ULIPs than for fund savings plans, which provides ample opportunities for further research.

Appendix

Tables 6 , 7 and 8

Table 6 Introductory scenarios in ULIPs and fund savings plans experiments

Original German survey text	Translated English survey text
Stellen Sie sich vor, Sie möchten einen Teil Ihres monatlichen Einkommens in eine fondsgebundene Lebensversicherung investieren. Hierfür zahlen Sie über einen vertraglich vereinbarten Zeitraum jeden Monat einen festen Betrag in einen Fonds ein. Nach Ablauf der Laufzeit des Versicherungsvertrags erhalten Sie den Gesamtwert des Fonds entweder als Einmalzahlung oder als monatliche, lebenslange Rentenzahlung zurück. Da keine Garantie enthalten ist, ist das Risiko im Vergleich zu Versicherungsprodukten mit Garantien zwar höher, aber die Renditechancen in der Regel ebenfalls. Das angesparte Fondsvermögen hängt von verschiedenen Produktmerkmalen ab, die im nächsten Schritt vorgestellt werden	Imagine you want to invest part of your monthly income in a unit-linked life insurance policy. For this purpose, you pay a fixed monthly amount into a (sustainable) fund over a contractually predefined period. At the end of the contract term, you receive the total value of the fund back either as a lump-sum payment or as a monthly, lifelong annuity payment. Since no guarantee is included, the risk is higher compared to products with guarantees, but so are the potential returns. The accumulated fund assets depend on various product features, which are presented in the next step
Stellen Sie sich vor, Sie möchten einen Teil Ihres monatlichen Einkommens in einen Fondssparplan investieren. Hierfür zahlen Sie über einen unbestimmten Zeitraum jeden Monat einen festen Betrag in einen Fonds ein. Da kein fester Endzeitpunkt festgelegt wurde, können Sie den Sparplan z.B. im Falle eines finanziellen Engpasses jederzeit beenden und Ihre bis zu diesem Zeitpunkt gekauften Fondsanteile veräußern. Das angesparte Fondsvermögen hängt von verschiedenen Produktmerkmalen ab, die im nächsten Schritt vorgestellt werden	Imagine you want to invest part of your monthly income in a fund savings plan. For this purpose, you pay a fixed monthly amount into a fund over an indefinite period. Since no fixed maturity date has been set, you can terminate the savings plan at any time, e.g., in the event of a financial shortage, and sell the fund units you have purchased up to that point. The accumulated fund assets depend on various product features, which are presented in the next step

Table 7 German and English explanation of product attributes

Original German survey text	Translated English survey text
Die **Nachhaltigkeitsklassifizierung gemäß EU-Verordnung 2019/2088** gibt an, ob der zugrundeliegende Fonds nach Artikel 8 (bewirbt Nachhaltigkeitsaspekte, aber Nachhaltigkeit ist nicht das primäre Ziel der Investitionen) oder Artikel 9 (verfolgt klare Nachhaltigkeitsziele) klassifiziert wurde, oder ob die dem Fonds zugrundeliegenden Investitionen nicht die EU-Kriterien für ökologisch nachhaltige Wirtschaftsaktivitäten berücksichtigen (keine Nachhaltigkeitsklassifizierung)	The **sustainability classification according to Directive (EU) 2019/2088** indicates whether the underlying fund has been classified according to Article 8 (promotes sustainability aspects but sustainability is not the primary objective of the investments) or Article 9 (pursues explicit sustainability objectives), or whether the investments underlying the fund do not take into account the EU criteria for environmentally sustainable economic activities (no sustainability classification)
Die **Angewandte Nachhaltigkeitsstrategie** gibt an, mit welchen Methoden Nachhaltigkeitsfaktoren in den Investitionsprozess integriert werden. Zur Auswahl stehen Negative Screening (Ausschlusskriterien), ESG Integration (ausdrückliche Einbeziehung der Bereiche Umwelt, Soziales und gute Unternehmensführung), eine Kombination aus beiden Strategien, sowie keine Nachhaltigkeitsstrategie	The **applied sustainable investment strategy** specifies the methods used to integrate sustainability factors into the investment process. You can choose between negative screening (exclusion criteria), ESG integration (explicit inclusion of environmental, social and governance criteria), a combination of both strategies, and no sustainability strategy
Das **Risiko-Ertrags-Profil** gibt die Höhe der erwarteten Rendite in Abhängigkeit des eingegangenen Risikos an. Je höher der Indikator (Skala von 2–6), desto höher die erwartete Rendite, aber desto höher ist gleichzeitig auch das eingegangene Risiko	The **risk–return profile** indicates the level of expected returns depending on the level of risk incurred. The higher the indicator (level of 2–6), the higher the expected returns, but at the same time the higher the incurred risks
Die **Laufenden Kosten** umfassen z.B. Verwaltungsgebühren oder Managementkosten. Die Gebühren betragen hier zwischen 0,5 und 2% und werden jährlich im Verhältnis zum investierten Kapital erhoben	The **ongoing costs** comprise e.g., administrative fees or management costs. The fees here amount between 0.5 and 2% and are being charged annually relative to the invested capital

The expressions in bold represent the respective product attributes used in the survey

Table 8 Sample description for the insurance and savings plans experiment

Socio-demographic characteristics	ULIPs survey ($n=198$)	Savings plans survey ($n=189$)
Gender		
Female	89 (44.9%)	78 (41.3%)
Male	109 (55.1%)	111 (58.7%)
Age		
18–30	22 (11.1%)	30 (15.9%)
31–40	71 (35.9%)	76 (40.2%)
41–55	105 (53.0%)	83 (43.9%)
Past experience		
Experience with life insurance	135 (68.2%)	
Experience with sustainable investments		87 (46.0%)
Highest level of education		
Primary school diploma	12 (6.1%)	13 (6.9%)
Secondary school diploma	58 (29.3%)	40 (21.2%)
High School diploma	34 (17.2%)	33 (17.5%)
Bachelor	54 (27.3%)	54 (28.6%)
Master	34 (17.2%)	44 (23.3%)
State exam	4 (2.0%)	3 (1.6%)
PhD	2 (1.0%)	2 (1.1%)
Current job status		
Employed	154 (77.8%)	146 (77.2%)
Job-seeking	16 (8.1%)	10 (5.3%)
Civil service	9 (4.5%)	7 (3.7%)
Homemaker	3 (1.5%)	5 (2.6%)
Retired	6 (3.0%)	7 (3.7%)
In school	–	1 (0.5%)
At university	4 (2.0%)	2 (1.1%)
Self-employed	5 (2.5%)	11 (5.8%)
Other	1 (0.5%)	–
Net income		
Below 500€	9 (4.5%)	8 (4.2%)
500–1000€	14 (7.1%)	5 (2.6%)
1000–1500€	21 (10.6%)	17 (9.0%)
1500–2000€	21 (10.6%)	24 (12.7%)
2000–3000€	61 (30.8%)	45 (23.8%)
3000–4000€	39 (19.7%)	44 (23.3%)
4000€ or more	33 (16.7%)	46 (24.3%)

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Declarations

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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