DYNAMIC PLANNER

Developing an Investment Sustainability Preference Questionnaire

Due Diligence Paper

January 2025

DYNAMIC PLANNER

Contents

1 Executive Summary

This report summarises the steps followed in developing an Investment Sustainability Preference Questionnaire (ISPQ) for Dynamic Planner.

In order to do so, a question set was developed which can deliver a personalised experience for a one: one discussion between client and adviser. Outlined in this report is documentation of the methodology used to create the questions and why this approach was taken. Research evidence to support the questionnaire items and methodology is also discussed.

Psychometric questionnaires are designed to cut through the noise and isolate the individual from external circumstantial distortions due to the constant supply of information via various media channels. This is particularly important in the case of Sustainability (or ESG) investing, since it will not be good for the Environment or Society if capital flows into companies because of a perception that ESG delivers outperformance only for it to reverse as soon as it doesn't.

Psychometric questionnaires are effective in understanding how a person might feel and act in the future as well as in this moment. Dynamic Planner have the most used Risk Profiling questionnaire in the UK with a long track record, whilst the subject matter is different, the structural academic approach used in the ATR questionnaire is also used here.

Approach

A number of steps were taken to provide the recommendations reported below. A candidate list of relevant items for sustainability was designed considering psychological theory and the purpose of the question sets. A focus groups with financial advisers took place to capture views on the question set framework and items. A large-scale test on a representative cross-section of the expected demographic was conducted, and responses were analysed using statistical tests. These consisted of running an exploratory factor analysis (EFA) as the question sets are based on a newly developed framework, internal consistency tests to explore the relationships between the proposed items and the associated domains, confirmatory factor analysis (CFA) to test the EFA model's construct validity and reliability, and finally regression analysis to examine the predictive validity of the question sets.

Conclusions

The ISPQ includes 15 items that encompass emotional and expressive benefits of sustainable investing, perceptions towards its purpose and desire to make a positive impact whilst considering the financial costs. Due to the discussions held with financial advisors, results of a large-scale study with a representative cohort of individuals, and the process we have taken to test the reliability and validity of the question sets, we are confident the question set enables customers to accurately express their preferences, and to facilitate the matching of a suitable portfolio recommendation with their adviser. Findings from the latest analysis of the model are also included in section 7 to support this with a more detailed report available on request.

2 Due Diligence Summary

2.1 What does this questionnaire do?

The Dynamic Planner Investment Sustainability Preference Questionnaire (ISPQ) is a tool to help understand the personal preferences an investor may have towards sustainability. It is intended to be used as part of a broader advice process that has already considered risks, costs and complexity of the financial product being recommended to a client. In line with regulatory requirements the sustainability preferences are recorded within a report.

The questionnaire was designed with academic expertise from the Henley Business School, part of The University of Reading and in house via Dynamic Planner's fund research team.

2.2 How is the questionnaire scored

The 15-item questionnaire is scored based on the responses provided. All responses are scored, and all items have an equal weighting on the final score. All items must be answered.

Dynamic Planner checks for inconsistencies in the client's responses in two ways. Firstly, if too many middle answers are selected these are highlighted for the adviser to discuss with the client. Secondly, there are flags if any individual question is answered in a way which seems inconsistent with the way in which the rest of the questions have been answered.

For more information on the scoring, please see section 5-6 of this document.

2.3 How has the questionnaire been tested?

The questionnaire has been tested with over 1,000 individuals prior to its general availability in Dynamic Planner. Respondents were selected to match the broad demographics of clients advised through Dynamic Planner. In 2025, the questionnaire is completed by an average of 6k clients per month this data is regularly analysed to test the questionnaire and the model which underpins it.

For full details of the testing please see section 4-5 of this document.

2.4 What limitations does the questionnaire have?

- The questionnaire measures an individual's preferences for sustainability on a scale ranging from low to very high. However, other factors within the overall suitability process such as attitude to risk, knowledge and experience, capacity for taking risk and specific objectives need prior consideration.
- Dynamic Planner implements an inconsistency check as part of the process, but care should be taken to address any other inconsistencies that may exist within the client's responses, or indeed the client's responses compared to their financial partner (if any).
- Where the items are answered in the presence of an adviser, take care not to unduly influence the responses of the client. Where two individuals are responding to the questionnaire, take care to ensure you are recording each individual's own attitudes, and that one individual is not dominating the responses of the other.

3 Stage 1: Establishing a Theoretical Background and Literature Review

3.1 Sustainability (ESG)

The level of demand for investments which actively consider environmental, societal and governance (ESG) risks, as well as the level of regulatory disclosures, have grown significantly over recent years. Whilst this trend is expected to accelerate, there is still ongoing debate as to whether applying ESG criteria potentially delivers inferior or superior outcomes when compared to conventional investment solutions over the longer term. Nevertheless, depending on the level of ESG criteria being applied, it can come at a greater cost due to the reduced diversification opportunities. It is also important to understand the psychological and ethical considerations individuals have alongside their financial motives. Regardless of the strength of these additional motives, if a large enough proportion of investors prefer to exclusively invest in companies demonstrating good management of ESG risks, then other companies may choose to follow suit to avoid an otherwise higher cost of capital as a result of their sustainability being questioned. This has attracted attention from policy makers who are seeking to find solutions to address climate change and current environmental issues (Vanwalleghem, 2017; Vanwalleghem & Mirowska, 2020).

Advisors aim to optimise their clients returns, yet many misjudge the potential impact that sustainable investing can have on returns, the importance clients place on returns alone, as well as the client's specific preferences and interests (Jansson & Biel 2011; Paetzold et al. 2015). Investors are increasingly illustrating that they care about companies' practices and their impact on the environment and society at large, whether for utilitarian, expressive or emotional reasons (Statman, 2010). ESG investing considers managing overall risks, doing well by doing good, reduced financial opportunities, potential for differing risk/reward outcomes, and emotional and ethical reasons. Hence, discussions around ESG depend on a clear understanding of the investor's goals and limitations (Branch & Goldberg, 2019). Designing a measure to understand sustainability preferences is necessary as advisors further consider investment suitability.

3.2 Psychological distance

People are more likely to take greater risks with regards to decisions that are further away in time. If we consider the example of climate change, acting now may be unattractive given that the promise of rewards is quite distant in time as well as uncertain (Spence et al., 2012). Pro-environmental decisions and intentions to act are increased by feelings of psychological closeness (Wang et al., 2019), which is affected by views on how managing environmental risks impacts oneself as well as other people (Singh et al., 2017). Investors may indicate the importance of sustainable investing, but when considering that the benefits are for future generations and/or people elsewhere, then this can impact decisions (Apostalakis, 2018). A measure of psychological distance explores how an investor perceives the impact of ESG investing on the present and future (temporal distance), themselves and others (social & geographical distance).

3.3 Personal values

It can often be assumed that investors solely desire to maximise their wealth, however they can also be motivated to facilitate social change, resulting in wanting to seek investments that are consistent with their personal values, and therefore being willing to accept lower returns (Beal et al., 2005; Pasewark & Riley, 2010; Berry & Yeung, 2013; Rossi et al., 2019). It is important to understand views on controversial and unsustainable areas and whether investments should further allow an investor to express their values and beliefs to others through the companies they invest in (Statman, 2010). Self-expressive benefits have a role in daily consumption of environmentally friendly products, implicitly conveying information about one's preferences and personal values which can satisfy social approval needs to be considered altruistic (Ahmad & Thyagaraj, 2015; Brodback et al., 2019; Policarpo & Aguiar, 2020).Similarly, these benefits can provide psychological motivation for investors as they seek to achieve the self-expressive benefits of sustainable investing.

3.4 Emotional benefit

As well as utilitarian and expressive benefits, it is important to examine the emotional benefits of investing (Statman, 2010). Investors benefit emotionally when demonstrating that they have acted responsibly for society through their investment decisions and can feel compensated by this when accepting that they may receive lower returns (Beal et al., 2005; Glac, 2009). In fact, when more in-depth ESG information, indications of emotional return and not only financial return, is provided to investors, then there are greater preferences towards ESG investments (Mervelskemper, 2018). Emotions are important in relation to making financial decisions and taking risk, where those in positive emotional states are more risk seeking (Breaban & Noussair, 2018; Brooks et al., 2020; Brooks & Williams, 2020), and decisions towards sustainable investments can be further influenced by evoking positive emotions (Vanwalleghem & Mirowska, 2020). It is therefore important to understand investors positive or negative emotions towards how companies manage their ESG risks.

3.5 Positive impact

We know that a proportion of investors express a desire to do good, where their investments produce social and/or environmental benefits. This extends further than a company monitoring or managing their risks. Such investors are socially motivated. They have goals and differ to neutral investors who are indifferent about the consequences of their investments (Brest & Born, 2013). Such investors may be prepared to accept lower returns in order to achieve the social and environmental impacts they seek (Hebb, 2013), whether solely for their investments to directly have a positive social and environmental impact, or to have a greater impact on how all investments are conducted (Bugg-Levine & Emerson, 2011). It is therefore necessary to identify those investors who seek to actively engage with companies to generate positive, measurable social and environmental impact alongside a financial return.

3.6 Financial considerations

Although investors may show a preference for managing environmental and social risks, or perhaps wanting to have a positive impact and consider their personal values through the companies they invest in, there are trade-offs that the investor should be aware of. If limitations are set in place, then these restrictions reduce the number of potential investments and the ability to diversify (Cappucci, 2018). However, studies have shown that ESG investments can produce at least competitive returns (Verheyden et al., 2016), with further surveys demonstrating that higher percentages of both investors and asset managers believe ESG does not mean missing out on returns (Eccles et al., 2017). Nevertheless, it is important to understand how investors prioritise their investment opportunities and financial returns in relation to ESG preferences.

4 Stage 2: Drawing Up a Long-list of Candidate items

In line with best academic practice, a "long-list" of approximately 40 candidate items was developed to capture the various dimensions reviewed in Stage 1 above. This ensured that the questionnaire would have a robust theoretical underpinning and would cover a range of dimensions of perceptions about Sustainable Investment and the implications of the approaches. The construction of a list of candidate items was undertaken by the Henley Business School researchers, guided with reference to Rossiter (2002) and Summers (2001), two seminal pieces in the literature on scale (i.e. questionnaire) development. Potential items were developed by the researchers through a brainstorming approach based on their collective knowledge of the literature on psychometric testing and sustainable investing and based on their experience of working with investment professionals and financial advisors.

There are a number of considerations when designing a psychometric questionnaire:

- No complex terminology or jargon
- No financial knowledge needed for completion
- No repetition/redundant items
- Capture multiple dimensions of the construct being measured
- Avoid double-barrelled and ambiguous items
- Appropriate number of items and item order

A focus group was conducted to understand views towards our ESG question set framework, along with sample items that this could include to support the development of potential items and the refinement of their wording. Seven supportive and engaged financial advisors participated (an ideal cohort size is between 5 and 10) who had no pre-screening or prior warning that ESG was the subject. A summary of their views and inputs is below:

In discussing ESG as a concept there was a wide range of views. They all acknowledged the looming regulatory requirement and welcomed a questionnaire, the idea of a structure to follow and the psychometric items.
We have listed relevant comments below.

<u>On the subject generally</u>

- *One adviser had spent a lot of time working on ESG in readiness for expected regulation and felt that it was important to begin by defining the outcomes before building the questionnaire because it is an emotive rabbit warren.*
- *It's an emotional decision not a financial one.*
- *Need to be careful not to end up with a set or preferences that mean that there is no suitable investment left.*
- *Is an emotional area and important that expertise in psychology is used.*
- *Certain clients who may have been 'ethical' in the past are challenging particular stocks within a fund or portfolio.*
- *About 2% of clients want to go into a detailed Ethical Screening type questionnaire.*
- *Welcome a broader consideration of ESG preferences for all customers*
- *Need to differentiate ESG as a theme v's what a client actually wants, advisers need to have a conversation about the theme as they would any other theme as it will still become normal.*
- *Never had a client ask for it.*
- *They want to make money and want to know that they are putting money into something they have control of and have had an input in.*
- *Need to make sure they don't fall foul of the regulator.*

<u>Once talked through the question set framework and approach</u>

- *There are some people who will get a warm glow from investing in this way, but the majority would rather focus on returns.*
- *Had a client that after the discussion that reflected it and wanted to have some impact and committed to 15% of his portfolio into ESG funds.*

- *Built an ESG portfolio that outperformed because of Tesla and Amazon v BP and BA. So things have moved on from performance or ESG so more people will want to invest in ESG.*
- *Performance might not be better or worse its just going to be different.*
- *A lot of people want a sympathetic investment not an absolute investment.*
- *Advisers consciously and unconsciously influence what their clients do, questionnaire manages that out.*
- *The more conversations and longer conversations you have the more clients want to be involved in ESG.*
- *An adviser had strong views on this subject and knowing and deliberately steered clients towards ESG. Acknowledged that ambiguity = business risk to have a questionnaire and framework would help but where clients have expressed a view need to make sure that the solution does reflect that.*
- *Aware the current KYC has a detailed risk profile discussion but needs to have an in-depth conversation but be careful not to overload the client with questions.*
- *Concern that you end up with too many variables*
- *A good way of ensuring the questions are asked and it will start a conversation.*
- *Universally felt that the questionnaire and the approach was a good idea and welcomed it believing that it will be well received across all advisers.*

Even when items have very clear wording and there is a great deal of thought supported by academic literature, questionnaires can still be designed in such a way that it is not actually measuring what is intended to assess. Clear statistical steps should be taken in order to validate the question set.

5 Stage 3: Large-scale Test on a Representative Cross-section of the Expected Demographic

Following the pre-testing of the questionnaire as described in stage 2 above and a pilot study, we employed a large-scale test of a reduced list of 32 new items on a representative cross-section of the expected demographic using a stratified sampling technique.

5.1 Sample

The questionnaire was completed using Qualtrics and respondents were recruited using Prolific and a set of quotas (all respondents to be based in the UK and have experience investing in stocks and shares). A pilot study was conducted with c.400 respondents before the full study began after ensuring the adequacy of the items and survey approach, reducing the candidate items, and making alterations where necessary. We then targeted 600 respondents based on the statistical process we would be running, and the number of variables being tested. We removed and replaced those who provided incomplete questionnaires, were straight-lining and taking less than a third of the mean time to complete (3.5 minutes). 688 respondents in total were available for data analysis.

5.2 Procedure

Respondents were informed about the purpose of the questionnaires to be completed and provided relevant demographic information (gender identity, age, marital status, education level, occupation status, salary, wealth, knowledge of investing and experience working with a financial adviser). Responses were made on a Likert scale ranging from 1 to 5 (strongly disagree- strongly agree). The blocks of items were randomised, as were the order of the items. For all items, respondents had the option to state that they "do not understand". At the end of the study, respondents were provided with clear definitions of ESG and different sustainability levels which they could select to match their preference.

For the questionnaire designed, we conducted a number of analysis steps including:

- -Data screening
- -Exploratory factor analysis (EFA)
- -Internal consistency tests - Cronbach's alpha statistic and item-total correlation
- -Confirmatory factor analysis (CFA) - construct validity and reliability
- -Structural Equation Modelling (SEM) & Regression analysis - predictive validity

The following table illustrates the purpose of each step:

Data screening	▸ Respondents who did not understand items were removed from the analysis. ▸ If the item itself was often regarded to be ambiguous then it was removed ▸ Outliers were removed using Mahalanobis distance ▸ Mahalanobis distance is the most widely used measure for detection of outliers when considering multiple variables as it measures the distance between a case and the distribution where larger values indicate outliers
Exploratory factor analysis	▸ EFA is utilised when creating new questionnaires ▸ Explores possible underlying factor structure and is a reduction technique ▸ Factor extraction obtained considering varied approaches–based on eigenvalues >1; scree plot (considering point of inflexion and eigenvalues); parallel analysis (eigen values compared with the values obtained from a random dataset) ▸ Rotation was applied to enhance the interpretability of the factor solution. Oblique (Oblimin) rotation was preferred over orthogonal rotation as it allows factors to correlate and often provides a more realistic view of the data ▸ EFA is an iterative process- items with low loadings and cross loadings are removed to maximise the variance explained ▸ Factors are interpreted
Internal consistency and reliability	▸ Measure factor reliability by examining internal consistency using Cronbach's alpha and item-total correlations ▸ Examine how closely related a set of items are as a group
Confirmatory factor analysis : Model fit	▸ CFA is used to verify the factor structure- post EFA, but can be applied without EFA ▸ CFA tests relationships between items and latent constructs ▸ Absolute fit indices determine how well the model fits the data (construct validity)
Confirmatory factor analysis: Validity & reliability	▸ Construct reliability is the measure of internal consistency of each factor ▸ Convergent validity is measured by calculating the average amount of variance captured by each construct ▸ Discriminant validity is the degree in which one construct can discriminate between another
Predictive validity (SEM and logistic regressions)	▸ Degree to which scores predicts an outcome based on another measure
Descriptive statistics	▸ Examined to understand distributions of total score and individual item scores considering means, standard deviations, item-total correlations, skewness and kurtosis

Table 1: Summary of the purpose of each stage of the analysis

5.3 Optimal criteria

At each stage of analysis there are optimal and cut-off criteria we have referred to and considered before moving on to the following step. These are reported below:

Exploratory factor analysis (EFA). The determination of the adequacy of the exploratory factor analysis (EFA) can be performed through the analysis of Bartlett's test and the Kaiser-Meyer-Olkin (KMO) measure. The KMO statistics range from 0 to 1, with values closer to 1 denoting greater adequacy of the factor analysis (KMO≥0.6 low adequacy, KMO≥0.7 medium adequacy, KMO≥0.8 high adequacy, KMO≥0.9 very high adequacy). If the result of Bartlett's test is < 0.05, factorial analysis can be used (Nievas Soriano et al., 2020). Factor loading scores greater than 0.4 are considered stable (Guadagnoli & Velicer, 1988) and it is advisable to remove any item with a communality score less than 0.2 (Child, 2006). As a general rule, the total variance explained by the retained factors should be at least 50% (Streiner, 1994).

Internal consistency. Regarding Cronbach's alpha, a value of 0.7 is generally agreed as an acceptable value, although 0.6 may be considered for exploratory research (Hair et al., 2010). However, a tiered approach can also be used "≥ .9 – Excellent, ≥ .8 – Good, ≥ .7 – Acceptable, ≥ .6 –questionable, ≥ .5 – Poor, and ≤ .5 – Unacceptable" (George & Mallery, 2003, p.231). For item-total correlations, the typical classification is ≥0.4 means excellent, 0.3–0.39 means good, 0.2–0.29 means marginal, ≤0.19 means poor (Qin, 2006).

Confirmatory factor analysis. Chi-square statistic should not be statistically significant if there is a good model fit. However, the Chi-square statistic is very sensitive to sample size and is no longer relied upon as a basis for acceptance or rejection (Schlermelleh-Engel et al., 2003, Vandenberg, 2006). Instead, multiple model fit indices should be examined taking into account not only sample size, but also model complexity. The magnitude evaluation of RMSEA is subjective, but values under 0.08 are considered indicative of good fit and between 0.08 and 0.1 are marginally acceptable, NFI and GFI values can range from 0 to 1, and those above 0.9 are considered acceptable. TLI values typically range between 0 and 1, and values above 0.9 are considered desirable. CFI values can range between 0 for a bad model and 1 for a good model, above 0.9 is desirable. SRMR values should be below 0.08 (Awang, 2015; Nievas Soriano et al., 2020). Good construct reliability is above 0.7 and is also an indicator of convergent validity in conjunction with factor loadings being greater than 0.5 and average variance extracted (AVE) above 0.5. Discriminant validity (square root of AVE) should be higher than inter-construct correlations (Hair et al., 2006).

Predictive validity. Regression coefficients should contain positive signs to support our hypotheses, as all scores were recoded to suggest a higher rating predicts individuals to be sustainability focused. Using structural equation modelling (SEM) we examine the relationship between latent constructs and outcome variables combining factor analysis and multiple regression analyses. All p values less than 0.05 are considered statistically significant. The strength of R^2 is debateable depending on the discipline and the novelty of the research, but greater than 0.2 is desired. Regardless, the model fit indices as discussed in CFA should be examined here to further validate the fit of the model.
When using logistic regressions, which further allows examination of the psychometric results with other variables including demographic variables, a general rule of thumb is that a McFadden's pseudo R^2 ranging from 0.2 to 0.4 indicates very good model fit. While pseudo R^2 cannot be interpreted independently or compared across datasets, they are valid and useful in evaluating multiple models predicting the same outcome on the same dataset. The higher pseudo R^2 indicates which model better predicts the outcome (Long & Freese, 2006; Long & Long, 1997). Likelihood model tests can also be performed between regression models to examine if there is a significant difference and which model is better taking into account p-values, residuals, AIC and BIC.

Descriptive statistics. Once items within the questionnaire are confirmed, composite scores can be calculated, and tests run to evaluate the distribution of the scores and the contribution of each item. Means should be close to 3 and standard deviations should not exceed a 2:1 ratio with any other item (Yin, 2016). Item-total correlations should be above 0.4 for

each item. Skewness and Kurtosis of each item and the total should fall within acceptable ranges. This can differ dependent on the sample size, but for a large sample size (over 300), Skewness should be between +2 and -2, and Kurtosis between +7 and -7 (Kim et al., 2013).

Exploratory factor analysis	KMO>0.7;
	Bartlett's test is < 0.05
	Factor loadings >0.4
	Communalities >0.2
	Total variance >0.5
Internal consistency and reliability	Cronbach's alpha >0.7
	Item-total correlations >0.4
Confirmatory factor analysis: Model fit	GFI >0.9
	NFI >0.9
	CFI >0.9
	RMSEA <0.08
	SRMR <0.08
	TLI >0.9
Confirmatory factor analysis: Validity & reliability	Construct reliability (CR) >0.7
	Convergent validity (Average variance extracted (AVE)>0.5; factor loadings >0.5 & adequate CR)
	Discriminative validity (square root of AVE > inter-construct correlation)
Predictive validity: Structural equation modelling (SEM)	Significant predictors p<0.05, R^2>0.2; CFA model fit indices
Predictive validity: Logistic regression	Significant predictors p<0.05; pseudo R^2 >0.2; likelihood ratio test p<0.05, lower residuals, lower AIC/BIC
Descriptive statistics	Means close to middle score; standard deviations not exceeding 2:1 ratio; Item-total correlations >0.4; Skewness +2 to -2 and Kurtosis +7 to -7

Table 2: Summary of optimal criteria

5.4 ESG data analysis

Prior to data being analysed, 1 item was removed as a high proportion of respondents did not understand the item. All respondents who answered “I do not understand” to the remaining 31 items were removed. Outliers were also removed resulting in a total of 602 respondents. All reversed items were recoded. The data was split for the two stages of factor analysis: exploratory and confirmatory.

Exploratory factor analysis (EFA). To determine the adequacy of running an EFA, Bartlett’s test and the Kaiser-Meyer-Olkin (KMO) measure were performed. The KMO statistic was 0.93, and the result of Bartlett’s test was $p < 0.001$ showing very high adequacy and that a factor analysis can be used with this dataset. The exploratory factor analysis excluded 10 of the 31 initial items from the questionnaire after four iterations using oblimin rotation to allow factors to be correlated. The EFA of the resulting 21-item questionnaire identified three domains based on factor loadings being greater than 0.4 and using parallel analysis. The three factors explain 46% of the variance in the data. Communalities range from 0.19 to 0.73.

Internal consistency. The reliability of the questionnaire was measured based on the internal consistency of each domain, using Cronbach’s alpha and item-total correlations. Cronbach’s alpha value was 0.85 for factor one ($r>0.4$). Cronbach’s alpha value was 0.82 for factor two($r>0.4$). Cronbach’s alpha value was 0.83 ($r>0.4$) for factor three. Although 2 items in factor 1, 1 item in factor 2 and 1 item in factor 3 were highlighted to be weakening Cronbach’s alpha within the respective factor, the value was still high and item-total correlations of these items were between 0.38 and 0.53, so the items were retained for the confirmatory factor analysis stage.

Confirmatory factor analysis (CFA). In order to measure the construct validity of the model presented above, a confirmatory factor analysis was conducted. Items with factor loading <0.6 were removed from the model one at a time resulting in a final model that consisted of 15-items. One item with a factor loading below 0.6 but above 0.5 (item 4), which is acceptable, was retained due to its nature. An EFA was run again after removing the low loading factor items within the CFA. The KMO statistic was 0.92, and the result of Bartlett’s test was $p < 0.001$. The three factors explain 53% of the variance in the data. Communalities range from 0.32 to 0.73. Modification indices however suggested that one item (item 11) would be better suited in factor 3 rather than factor 2.

A final confirmatory factor analysis was then conducted. The model showed 87 degrees of freedom, a Chi-square value of 230.27, and a probability level of $p < 0.001$. Three constructs detected in the EFA were confirmed, with the items having factor loadings from 0.50 to 0.83. A global evaluation of the model was performed to determine whether it properly replicated the existing relations; GFI (0.91), NFI (0.90), CFI (0.94) RMSEA (0.07), SRMR (0.055), TLI (0.92). These values allow us to affirm that the 15-item questionnaire previously established as three domains was confirmed, and the evaluation by the maximum likelihood estimation method was good. There is good construct reliability for all factors ($CR>0.7$). There is also good convergent validity ($AVE>0.5$) (see table 3). It is apparent that items within factor one and three are not completely discriminant from each other as the correlations between the factors is high ($r=0.8$) and greater than the square root of AVE (see table 3), but we would expect such findings due to the relationship between the constructs and theoretical basis of measuring ESG preferences. Strong correlations were also found between factor 1 and factor 2 ($r=0.74$) and factor 2 and factor 3 ($r=0.71$).

		Factor loadings	Average Variance Extracted (AVE)	Errors	Construct reliability (CR)	Square root of AVE
Psychological distance & Positive impact (Factor 1)	Item 6:	0.693	0.51	0.52	0.86	0.72
	Item 2	0.735		0.46		
	Item 1	0.767		0.412		
	Item 5	0.504		0.746		
	Item 8	0.827		0.317		
	Item 14	0.732		0.465		
Emotional benefit (Factor 2)	Item 1	0.827	0.58	0.316	0.85	0.76
	Item 4	0.818		0.331		
	Item 10	0.702		0.508		
	Item 7	0.691		0.522		
Personal values & Financial considerations (Factor 3)	Item 13	0.637	0.51	0.594	0.84	0.71
	Item 3	0.606		0.633		
	Item 9	0.733		0.462		
	Item 12	0.796		0.367		
	Item 15	0.765		0.415		

Table 3: Factor loadings, Convergent validity (AVE), Errors, Construct reliability and Discriminant validity based on confirmatory factor analysis

Predictive validity. To further test the validity of the established factors consisting of 15 items, we examined responses in relation to decisions made when fully informed on the differing criteria of five levels of ESG preferences. Using SEM where the outcome measure is added to the existing CFA model, the results showed the validity of the factors as factor 1, factor 2 and factor 3 positively related to ESG preference levels (β=0.578, $p<0.001$; β=0.487, $p<0.001$; β=0.573, $p<0.001$, respectively) (see table 4). A global evaluation of the model was performed including the outcome measure showing a good model fit; GFI (0.90), NFI (0.90), CFI (0.94) RMSEA (0.07), SRMR (0.052), TLI (0.93).

	Unstandardised coefficient	Standard error	Standardised coefficient	z-value	p-value	R^2
Psychological distance & Positive impact (Factor 1)	0.371	0.04	0.578	9.247	<0.001	0.334
Emotional benefit (Factor 2)	0.231	0.028	0.487	8.370	<0.001	0.237
Personal values & Financial considerations (Factor 3)	0.292	0.034	O.573	8.614	<0.001	0.328

Table 4: Regression results of SEM

In addition, we created a composite score using the 15 items to further examine the relationships between the questionnaire and outcome measures when considering additional control variables using logistic regression analyses. We include a model of control variables (Model 1) (gender, age, marital status, education, occupation, salary, wealth, investing knowledge and experience with a financial advisor) and illustrate that males and those with a high salary have lower ESG preference levels (pseudo R2 = 11.9%). The composite score was added to the model (Model 2) and confirmed that it is a highly significant predictor of ESG preferences, and that when combined with control variables, its addition leads pseudo-R2 to rise to 40.3%. To further test this model in comparison to control variables alone, a likelihood ratio test was performed and shows that the model including ESG composite scores is a better model for predicting ESG preferences; $\chi2(1)=222.31$, $p<0.001$ (see table 5).

	Resid.DF	Resid.Dev	DF	Deviance ($\chi2$)	p-value	AIC	BIC
Model 1	567	473.06				543.06	697.07
Model 2	566	250.75	1	222.31	<0.001	322.75	481.16

Table 5: ANOVA comparisons between models

The defined factor structures were interpreted as shown below, illustrating how the theoretical framework relates to the 15 items within the final questionnaire:

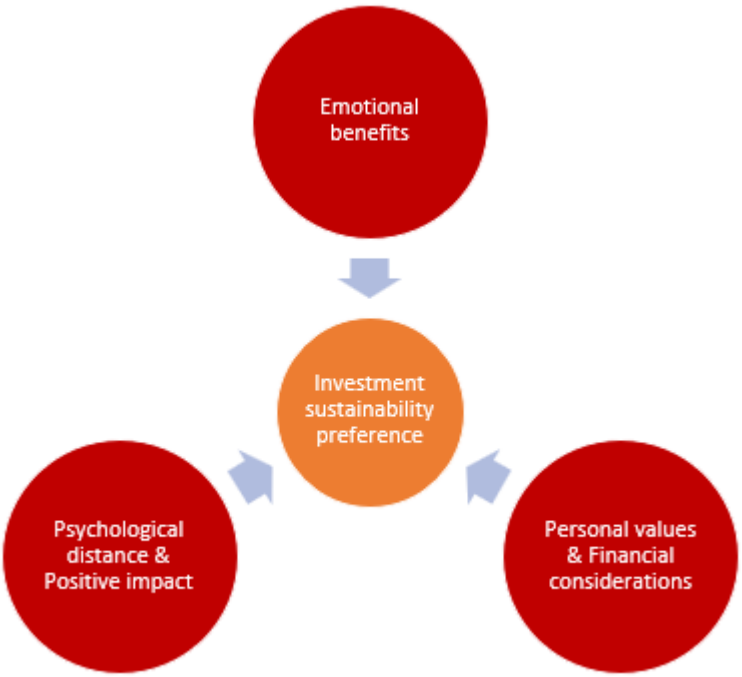

Figure 2: Factor structures underlying questionnaire design

5.5 Overall scoring methodology

We believe that a scoring approach where all items carry equal weight is the most robust approach so that no responses to individual items are able to exert undue influence on the sustainability level. This approach also ensures that only clients with consistently strong views on the majority of the items would end up in a low importance (1) or high/very high importance (4 or 5) band.

5.6 Analysis of individual items

Descriptive statistics. There are strong positive correlations between each item and the total score leading to the investment options, further supporting the validity of each item. All possible responses (1-5) were selected for every item, and although the means of some items are positively skewed, this reflects the explicit choices made by respondents and what we would expect due to interest in sustainable investments (Allianz Global Investors, 2018). Nevertheless, Skewness and Kurtosis for each item and overall score (Skewness=-0.42; Kurtosis=2.98) are within the acceptable ranges based on a large sample size (Skewness +2 to -2 and Kurtosis +7 to -7) (Kim et al., 2013). Moreover, the means are close to 3 with standard deviations that do not exceed a 2:1 ratio with any other item (Yin, 2016) (see table 6).

Cronbach's alpha and the composite reliability scores have been shown to be high (above 0.8) for all factors at the different stages of analysis. We can also examine Cronbach's alpha of the total 15-item questionnaire as the factors are highly correlated. The Cronbach's alpha is excellent at 0.91 and all item-total correlations are above 0.4. No items are suggested to be removed in order to increase this value, showing that no items are redundant. The items are therefore valid for exploring ESG preferences in accordance with previous conclusions (see annual update for latest analysis) .

		Item-total correlations	Means (SD)	Skewness	Kurtosis
Psychological distance & Positive impact (Factor 1)	Item 6	0.67	3.10(1.15)	-0.20	1.91
	Item 2	0.69	3.28(0.98)	-0.16	2.35
	Item 1	0.76	3.43(1.03)	-0.49	2.60
	Item 5	0.49	3.57(0.94)	-0.38	2.53
	Item 8	0.78	3.23(1.03)	-0.11	2.23
	Item 14	0.74	3.17(0.99)	-0.14	2.27
Emotional benefit (Factor 2)	Item 1	0.66	4.27(0.72)	-1.0	4.71
	Item 4	0.68	4.00(0.86)	-0.83	3.52
	Item 10	0.69	3.82(0.93)	-0.79	3.28
	Item 7	0.62	4.35(0.70)	-1.01	4.51
Personal values & Financial considerations (Factor 3)	Item 13	0.67	3.77(0.97)	-0.80	3.25
	Item 3	0.66	3.22(1.10)	-0.23	2.04
	Item 9	0.67	3.66(1.11)	-0.73	2.75
	Item 12	0.71	2.94(1.14)	-0.06	1.94
	Item 15	0.70	3.41(1.27)	-0.36	1.97

Table 6: Descriptive statistics of individual items

6 Inconsistency Checking

It is important to use inconsistency checking to examine whether the client has been fully engaged with the process and or has responded in a manner that contradicts their sustainability preference level.

6.1 Excessive middle answers

The new 15 item questionnaire has a potential answer of “Neither agree nor disagree”. It was decided that a middle answer in these items was not a “non-committal” answer and that the current methodology within the ATRQ in which more than 60% of middle answers warranted a flag, should be applied here. The questionnaire will flag where respondents have selected “Neither agree nor disagree” for 10 or more of the 15 items.

6.2 Single response at variance with the rest of the questionnaire

For each risk level, there is a “consistent range” within which the score to any individual question is deemed “consistent”. An individual question scoring outside this range for the lowest band and highest two bands is flagged as “inconsistent”. For example, a questionnaire with an overall preference level of 1 would flag any question with a score of 5. An inconsistency flag is not an indicator that an answer is in any way “wrong”. An inconsistency flag is an opportunity for the advisor to talk to the client and ensure they understand the items and to get any other information required.

7 Additional testing

The model is regularly tested using questionnaire data received through Dynamic Planner that has been completed by advised clients. Using data from a large population of approximately 35,000 Dynamic Planner clients who completed the investment sustainability preference questionnaire between January 2024 and October 2024, we have conducted a set of statistical tests including internal consistency, confirmatory factor analysis and individual item analysis to check the fit of the model and the relations between the questionnaire items within the three factors. The results demonstrate that the 15 items and three overall factors that make up the questionnaire continue to be valid for exploring sustainability preferences (see latest annual update for more details).

To further verify the ISPQ, we use the same dataset between January 2024 and October 2024 to examine the distributions between sustainability profiles Low importance to Very high importance. The distribution of clients' preferences shows the highest proportion of clients fall into the "some importance" category (see figure 3).

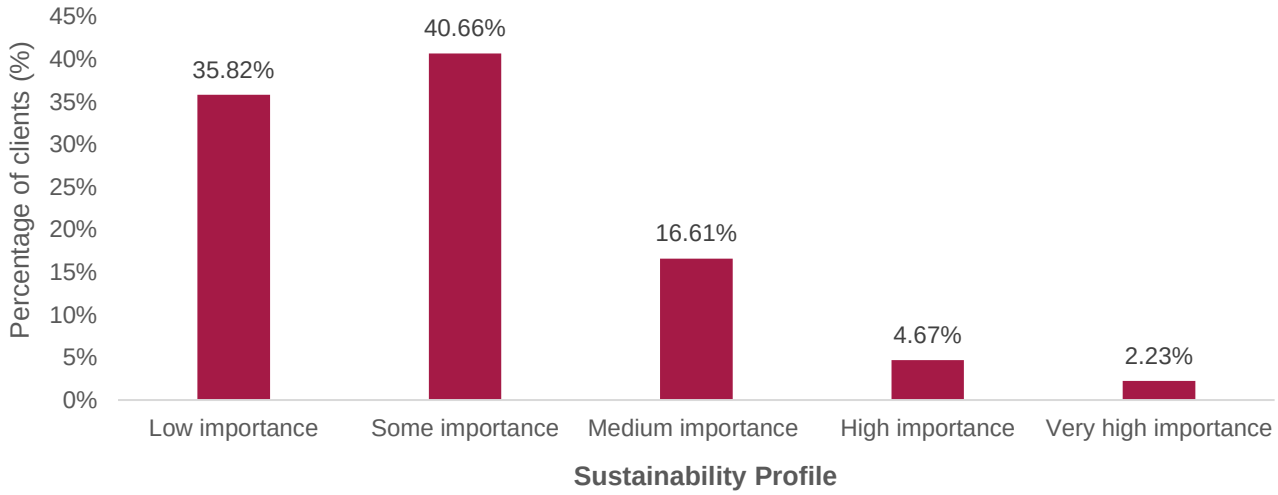

Figure 3: Distribution of sustainability profiles (Jan 2024- Oct 2024)

The stereotype that younger clients have a greater preference for sustainable investments due to supposedly being more values-driven and having a greater desire to seek investments that align with their views, is not supported here. In fact, a higher proportion of younger clients view sustainability as of low importance, but when combined with those within the "some importance" category, then the overall numbers are similar to other age groups. No other significant differences are apparent due to age for those with a stronger desire for sustainable investments (see figure 4).

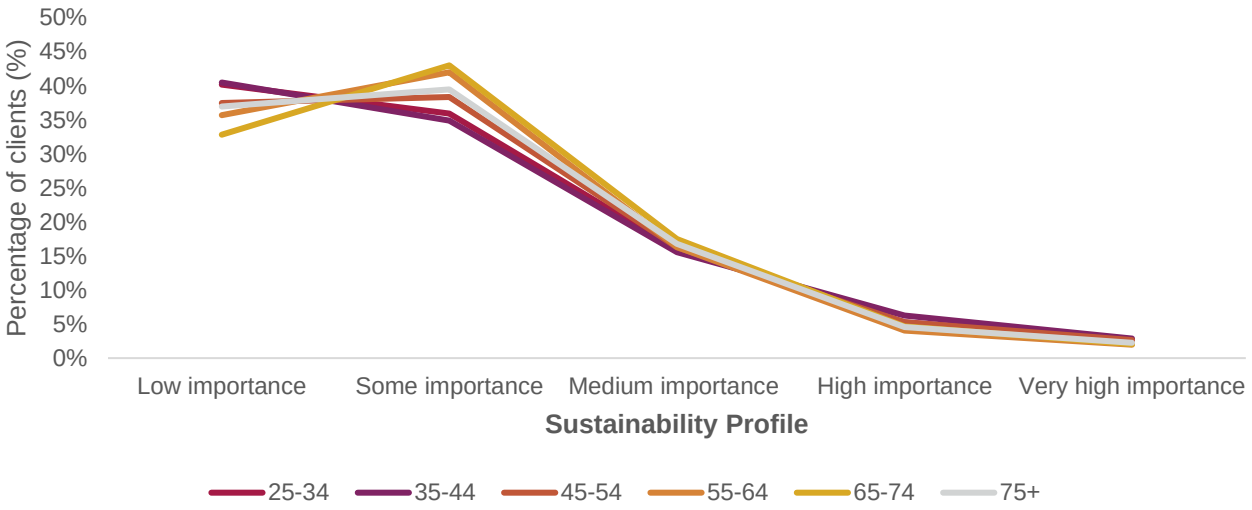

Figure 4: Distribution of risk profiles by age group (Jan 2024- Oct 2024)

As often reported in research, women view sustainability as of significantly greater importance when considering their investments than men (see figure 5). For example, a larger proportion of men (42%) than women (28%) view sustainability as something of low importance, while 10% of women view sustainability as of high or very high importance compared to 5% of men.

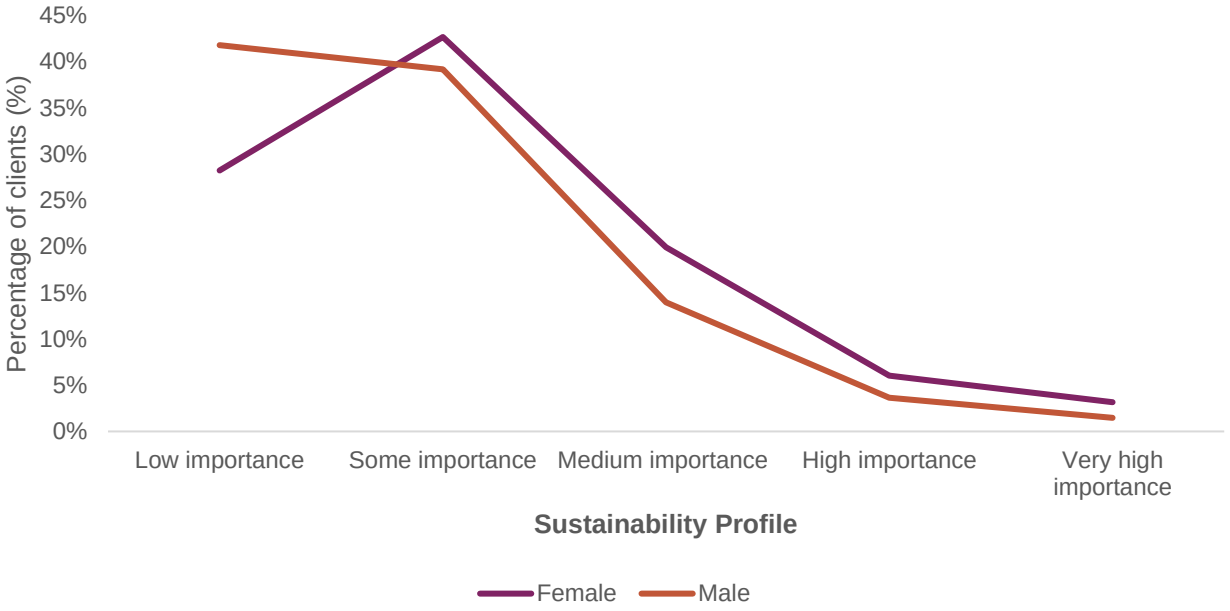

Figure 5: Distribution of risk profiles by gender (Jan 2024- Oct 2024)

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