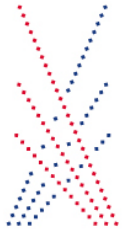

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Informing Retail Investors about Financial Products: The Impact of Horizon and Framing Effects

Carola Hillenbrand, The John Madejski Centre for Reputation, Henley Business School, University of Reading, Henley-on-Thames, RG9 3AU, UK.

Anastasiya Saraeva, The John Madejski Centre for Reputation, Henley Business School, University of Reading, Henley-on-Thames, RG9 3AU, UK.

Kevin Money, The John Madejski Centre for Reputation, Henley Business School, University of Reading, Henley-on-Thames, RG9 3AU, UK.

Chris Brooks, The ICMA Centre, Henley Business School, University of Reading, Reading, RG6 6BA.

Abstract

Not much is known to date about how the framing of information about financial products impacts UK retail investor (RI) assessment of and engagement with products. To explore this lacuna, we apply framing conditions to the context of RIs and systematically vary financial product description and imagery in terms of 'time horizon' ('short-term' versus 'long-term') and 'investment goal' ('achieve' versus 'protect') in a 2x2 quasi-experimental study. Data from 787 UK-based RIs collected in the summer of 2017 is analysed using ANOVA and PLS-SEM multi-group analysis, revealing novel findings for both framing conditions, insights in relation to person-related and context-related predictor variables as well as differences in relation to control variables age, gender, income, home-ownership, financial knowledge and financial experience. Implications arising from our study are briefly discussed in relation to research, practice and policy.

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Introduction

When financial institutions or advisors present financial products (such as investment portfolios) to Retail Investors (RIs)[1], product information often contains a mixture of text and imagery related to time-horizon and investment goal. The time-horizon for investment may be short term (for example 3 months to 1 year) or long-term (for example 5 to 10 years or longer), while investment goal information may related to whether the investment aims to 'achieve' (e.g. achieve certain gains) or 'protect' (e.g. protect existing assets and prevent losses) and a description of how the investment can go up and/or down within such ambitions. While there is a well-established body of knowledge in relation to timing and goal framing effects generally (Sitkin & Weingart, 1995; Kühberger, 1998; Klos et al., 2005; Malkoc & Zauberman, 2006; Stathopoulos & Voulgaris, 2016), very little is known to date how framing conditions impact the specific context of RIs and their assessment of and engagement with financial products.

Indeed, deciding how and where to invest assets can be a difficult task for many individuals (Shapira & Venezia, 2001; Bluethgen et al. 2008a, b), with investment products often advertised in a fairly crude and simplistic manner in outlets such as newspapers, shop windows or leaflets. The purpose of leaflet-type information is typically to attract attention, while the small print and terms and conditions are provided at a later stage. For example, graphs are often used to indicate future performance based on past performance and to give an outlook on time periods for investment, while pictures or headlines are often used to display the general purpose of the investment (e.g. picture of an umbrella symbolizing protection in stormy times, or a yacht symbolizing achievement of dreamed-about luxury items). However, the presentation of financial product information has been criticized by regulatory bodies amid concerns over an ever increasing and more and more confusing array of products on the market (Clark-Murphy & Soutar, 2004; Diacon & Hasseldine, 2007; Hunt et al 2015; FCA, 2017).

Regulators such as the Financial Conduct Authority (FCA) in the UK and the Securities and Exchange Commission (SEC) in the US are trying to control some of the potential pitfalls of common biases in information display through requests for clarifying written statements[2], however it has been questioned whether small print written information is as salient as charts, pictures and headlines when creating impressions (Agnew & Szykman, 2005; Diacon & Hasseldine, 2007). It is not clear in current literature how framing conditions related to time-horizon and investment goal (particularly if supported by images) may impact RIs and/or how such framing effects may interact with a range of other emotional and cognitive factors when RIs assess information about financial products (Tegarden, 1999; Kotlikoff et al. 2001; Agnew & Szykman, 2005). Indeed, while some scholars have proposed person-related variables (such as self-esteem or sensation-seeking, see Grable et al., 2008) and domain-related variables (such as financial literacy, attitude towards financial risk, see Grable & Joo, 2004; Perry & Morris, 2005) as important predictor variables for RI investment behaviour, the study of these factors has not been linked to the way information is displayed in terms of the framing effects studied in this research. We thus utilise the context of time-horizon and investment goal framing to study the predictive relevance of a set of other person-related and domain-related predictor variables on RI intentions.

As such, we aim to make three contributions in this study. First, we apply framing effects to the context of RIs and conceptualise how framing effects related to time-horizon and investment goal impact RIs evaluation of, and intention to engage with, financial products[3]. Second, we investigate the impact of framing effects on the relevance of other predictor variables in the context of RI behaviour, i.e. person-related variables and domain-related variables, as well as a range of control-variables, to understand how these variables may work

differently under different framing conditions. Third, we conduct an empirical study with 787 RIs sampled from the general UK population in 2017, rather than collecting data from student bodies or lab experiments, where many current academic insights in behavioural finance are drawn from.

Our findings suggest that 'protect' investment goal framing leads to product evaluations as more trustworthy as well as higher intentions to recommend the product to friends and family, while 'achieve' investment goal framing elicits more negative emotions of fearfulness and nervousness despite being perceived as more eye-catching. Interestingly, however, our findings reveal that general positive emotions that RIs may feel towards finance/investment lead to a lesser likelihood of engaging with 'protect' investment goal products, under both short and long-term time-horizons, while 'achieve' investment goal framing reveals lesser engagement from RIs in the short-term who are satisfied financially, but more engagement from RIs in the long-term who are high in sensation-seeking scores - which poses questions of responsibility towards vulnerable people. Furthermore, our control variables suggest a number of interesting differences, particularly in how time-horizon framing impacts different control groups differently and how male and female RIs differ in terms of the impact that emotions towards finance/investment (male) and product assessment and life generally (female) exerts on RI propensity to engage with different types of products.

Literature

In this study we focus on two framing conditions of particular relevance to the context of RI decision-making: time-horizon and investment goal framing.

Time-horizon framing

In terms of framing conditions related to time-horizon, the literature suggests that choice of time horizon, defined as "a time span in which an individual investor expects to invest his wealth" (Shafi et al., 2011; p. 347) may have a significance impact on investment behaviour (Benartzi & Thaler, 1999; Siebenmorgen & Weber, 2004). However, the actual nature and directionality of such an impact is inconclusive in current studies. For example, Klos et al. (2005) find that individuals who invest with long time horizons tend choose riskier investments (see also Anderson & Settle, 1996; Benartzi & Thaler, 1999; Schooley & Worden, 1999) while scholars such as Albrecht et al. (2001) suggest that RIs become less risk tolerant with longer time-horizons. However, despite contradictory empirical findings, scholars do agree that people depart from rationality in a sense that they do not follow linear behaviour across different time spans, but attribute more or less value to outcomes at different times.

Indeed, different utilities attributed to outcomes in the near versus far future is discussed in studies on inter-temporal discounting: people tend to discount (undervalue) future outcomes relative to near outcomes, a phenomenon holding consistently across contexts and disciplines (Takahashi, 2009; Green & Myerson, 2004; Soman et al., 2005). However, standard economic models (such as discounted utility models) have been shown to be problematic in explaining decisions made in inter-temporal space (i.e. discount rates were shown to not be stable, but to vary as a function of contextual and other variables). As such, it is not clear how inter-temporal discounting effects may play out in the context of RIs and their engagement with financial products. Understanding inter-temporal discounting is of particular relevance in the context of risky choice framing effects (e.g. 'achieve' versus 'protect' frames in this study): while it had been assumed that discount rates are lower for losses than for gains, studies have also found the opposite effect (Read, 2004; Soman et al., 2005).

Investment goal framing

Investment goal framing is defined based on goal framing studies (Levin et al. 1998; Kahneman 2011), as "a goal that an individual hopes to achieve with a certain investment, i.e. achieving gains versus preventing losses". Goal framing effects have been shown to be amongst the strongest and most consistent biases in decision-making literature (Levin, et al., 2002; Holler et al. 2008). Generally, people tend to be more risk-seeking when outcomes are framed negatively (i.e. as loss prevention), than if outcomes are framed positively (i.e. as gain) (Kühberger, 1998; Levin et al., 1998). As such, one may expect that information featuring protection against losses may activate different cognitive mechanisms than information portrayed as achievement of gains (Holler et al. 2008).

However, as most empirical studies to date utilise hypothetical scenarios in which participants make choices on abstract dilemmas, little is known about how framing impacts people's decision making in a real-life situation, and in particular in the context of financial decision-making that may present an ambiguous (e.g. unknown) and possibly emotional (e.g. fear of loss) scenario (Hasseldine & Hite, 2003; Holler et al., 2008). Indeed, empirical findings relevant to 'achieve' versus 'protect' scenarios are not only scarce and not very recent, but inconclusive at best (Reber et al., 1998; Spiegel et al., 2004; Holler et al., 2008). For example, Ganzach & Karsahi (1995) find that loss avoidance framing has a stronger effect on individuals' behaviours related to credit cards use, compared to gain behaviour, while Levy (1996) finds people get more upset when buying a stock that subsequently drops in price then whey failing to buy a stock that subsequently increases in value.

Conceptual frameworks and research questions

The effects of our framing conditions related to time-horizon and investment goal are exposed to empirical testing in two stages in this study, based on two proposed conceptual frameworks and associated research questions. The first conceptual framework explores specifically the impact that our two framing conditions have on RI assessment of product information and RI intention to engage with products, in a classic 2x2 ANOVA analysis of an experimental design. The second conceptual framework includes the analysis of a number of associated predictor variables as well as a number of control variables, and as such contains more explanatory text and conceptualisation below, before presenting a regression-type model with RI intention to engage as ultimate outcome variable of interest in Stage 2 of this study.

Conceptual framework 1

Our conceptual framework 1 builds on the discussion of our two framing conditions time-horizon and investment goal above and investigates in a classic 2x2 experimental design study the impact that both variables have on assessment of product information and intention to engage with the investment.

Research question 1: Do the 2x2 framing conditions (time-horizon short/long; investment goal framing achieve/protect) show main and/or interaction effects on two dependent variables: RI assessment of product information and intention to engage with the product?

[Insert Figure 1 about here]

Conceptual framework 2

Our conceptual framework 2 includes a number of predictor variables as well as control variables to more fully understand RI intention to engage with financial products under various framing conditions, and as such requires a brief exploration of the conceptual background of these variables.

While literature on variables that predict RI investment behaviour is generally scarce, a few scholars have suggested to differentiate between variables that relate to the investment context and variables that relate to personality factors (see for example Grable, 2000; Lerner & Keltner 2000; Perry & Morris 2005; Grable et al. 2008; Grable & Roszkowski 2008; Holler et al., 2008; Lerner et al. 2015). This is maybe most prominently expressed by Weber et al. (2002), Grable & Jo (2004) and Grable et al. (2008) who, while using slightly different terminology, all differentiate between person-related factors (such as personality variables and general life factors) and context-related factors (such as finance and investment related attitudes of RIs).

Scholars exploring person-related factors in RI decision-making (including Hirshleifer & Shumway, 2003; Kamstra et al., 2003; Lerner et al. 2015;), suggest factors such as self-esteem (Arch, 1993; Krueger & Dickson, 1994; Judge et al., 1999; Grable & Joo, 2004; Grable et al., 2008), sensation seeking (Wong & Carducci, 1991; Grable & Joo, 2004) and general positive and negative emotions towards life as relevant factors (Loewenstein et al., 2001; Lerner et al., 2015). Likewise, the importance of context-related factors, i.e. factors that relate particularly to the financial/investment context of RI behaviour, has been suggested to include attitude towards financial risk (ATFR), (MacCrimmon et al., 1988; MacCrimmon & Wehrung, 1990; Sung & Hanna, 1996; Weber et al., 2002; Yao et al., 2004), financial satisfaction (Porter & Garman, 1993; Hira & Mugenda, 1998; Grable et al. 2008; Robb & Woodyard, 2011), and the positively or negatively felt emotion towards finance and investment (Lerner et al. 2015). In this study we include an assessment of all the above mentioned variables under various experimental conditions, as well as the role that control variables related to age, gender, income, home-ownership, financial knowledge, and financial expertise play in that context. It is important to note that we also include assessment of product information as a further explanatory variable in our conceptual framework 2[4].

Importantly, we explore whether the suggested relevance of these variables may be impacted by different framing conditions, i.e. do time-horizon and investment-goal framing set the context in which certain person-related factors, context-related factors or product assessment matter more or less to RIs? As such, we apply our four framing conditions (time-horizon short/long x investment goal achieve/protect) to an investigation of the predictive relevance of person-related factors, context-related factors and product assessment for RI intention to engage with financial products, see Figure 2 for graphical representation of our research framework 2, summarised in the two research questions below.

[Insert Figure 2 about here]

Research question 2: Does the role and importance of person-related factors, context-related factors and product assessment in predicting RI intention to engage with the product vary depending on the 2x2 framing conditions?

Research question 3: What is the impact of control variables related to age, gender, income, home-ownership, financial knowledge and financial expertise on the relationships between variables in research question 2?

Method

Following the development of our two conceptual frameworks and associated research questions above, we follow a two-stage strategy to analyse them. In stage 1, we conduct a classic 2x2 ANOVA analysis to explore research question 1, before applying a series of regression analysis in PLS-SEM to investigate research questions 2 and 3.

Experimental Design We developed four investment products, where we deliberately manipulate time-horizon framing (short vs long) and investment goal framing (achieve vs protect)[5]: (1) long term/ achieve frame (LA); (2) short term/ achieve frame (SA); (3) long term/protect frame (LP); and (4) short term/protect frame (SP). See appendix 1 for a graphical display of all four manipulation scenarios, including text and graphical imagery. The short and long terms were implemented in the leaflet as bar graphs for 3 month–6 month–12 months and 1 year–3year–10 years period respectively. The achieve investment goal condition '*Dream it. Achieve it*' described the offered financial product – Growth Portfolio – as a portfolio that would ensure *exciting growth* and provide *lucrative returns*. The protect investment goal condition '*Own it. Protect it*' described the offered financial product – Income Portfolio – as a product that is focused on *secure income growth* and it will provide *stable returns*.

Procedure. Respondents were recruited by Qualtrics who hosted the 15-minute survey on their online platform, recruiting and screening all participants from their established panel providers. Participants were recruited to represent an equal spread in key demographics RI experience, gender, age, and income. Data was collected in June 2017 and respondents were randomly assigned to one of four experimental conditions. Respondents were informed at the beginning of the survey that they would be shown a leaflet about a financial product and asked a series of questions before and after. The leaflet as well as the name of the financial advisory firm (DeltaInvest) were invented for the purpose of the study, and respondents were informed at the end of the study that this was the case. Before collecting data, the study went through standard university ethics procedures and was given green light to proceed.

Measures

Most variables in this study were measured using scale items derived from previously published and peer-reviewed research. Measures of positive and negative emotions in relation to product information, person-related factors and context-related factors were adapted from the widely-used PANAS scale developed by Watson et al. (1988). Measures for sensation seeking, self-esteem, financial satisfaction, and net worth measures were adapted from Grable and Joo (2004). Measures for evaluation and credibility of product information are based on Baker and Churchill (1977) and MacKenzie and Lutz (1989). Attitude towards financial risk is measured using an industry-relevant measure developed by Distribution Technology (DT), a UK-based provider of financial planning and front office wealth management systems, and included questions such as: "*Compared to the average person, I take lower financial risks" (reverse); "I do not feel comfortable with financial uncertainty" (reverse); "Taking financial risks is important to me"*. Measures for intention to engage with financial products were developed specifically for the purposes of this study, but developed in close relationship to how other intention measures in literature work, including whether individuals would be "*(...) interested to invest in the offered portfolio"*; "(…) *interested to book a session with an advisor from DeltaInvest regarding the offered portfolio"*; "(…) *recommend this portfolio to friends/family"*; "(…) *like to search for more information about the company DeltaInvest and the portfolio"*. All measures utilized five-point Likert-type scales and were pre-tested and piloted with RIs before the main study data collection.

Common method bias. To ensure that our data did not suffer from common method bias, both the Harman's single factor test (Harman, 1976) and the Lindell and Whitney's test (2001) were performed, both procedures suggesting that the collected data is not likely to suffer from common method bias.

Manipulation checks. To check whether investment goal and time-horizon framings were successfully manipulated, participants were asked a set of questions on a five-point scale to evaluate the goal and time period of each portfolio (i.e. "*the offered portfolio is aimed at lucrative returns/protecting money"; "(…) over short/long period of time"*), see results below.

Analysis

Data were initially entered in SPSS Statistics 24 in order to assess missing values[6] and outliers as well as normality. The initial stage of data preparation led to exclusion of 180 straight-liners and 15 outliers, which led to a final sample of 787. See appendix 2 for sample demographics.

Manipulation check. The evaluation of perceived time-horizon framings revealed a significant main effect of the *Short horizon* manipulation, $F(1, 786)=46.331$, $p<0.001$, $\eta^2_{partial}=0.056$ ($M_{short}=3.05$, $SD=0.768$) as well as the *Long horizon* manipulation, $F(1, 786)=25.809$, $p<0.001$, $\eta^2_{partial}=0.032$ ($M_{long}=3.49$, $SD=0.634$). Similarly, the analysis of perceived investment goal framings revealed a significant main effect of the *Achieve* manipulation, $F(1, 786)=10.516$, $p<0.001$, $\eta^2_{partial}=0.013$ ($M_{achieve}=3.22$, $SD=0.612$) as well as the *Protect* manipulation, $F(1, 786)=28.632$, $p<0.001$, $\eta^2_{partial}=0.035$ ($M_{protect}=3.21$, $SD=0.667$).

The data analysis was conducted in two stages. Stage 1 involved 2 (time-horizon: short versus long) x 2 (investment goal: achieve versus protect) ANOVAs conducted separately for each of the developed scenarios. Stage 2 contained evaluations model proposed in framework 2 via regression analysis in all four conditions as well as 2x2 group comparisons and group analysis of the control groups. Due to the complexity of the conceptual model and a few occurrences of non-normal data distribution properties, we adopted partial least squares structural equation modelling (PLS-SEM) (Ringle et al., 2012; Hair et al., 2013; 2016, 2017; Hillenbrand et al., 2013; West et al., 2016). PLS is similar to regression analysis but is considered as more flexible in dealing with non-parametric estimations within complex structural models (Sarstedt et al., 2014; Vinzi et al., 2010; Hair et al., 2013; 2017). For this study PLS-SEM was operationalised within the software SmartPLS 3.2.7 (Hair et al., 2017). Finally, to test for group differences we applied Multi Group Analysis (MGA) within PLS-SEM (Sarstedt et al., 2011).

Results

Stage 1: 2x2 ANOVAS

Main effect of time-horizon framing

There are no main effects RI intention to engage with financial product; evaluation, credibility or emotions towards product information (see Tables 1-4). However, there is a main effect for time-horizon framing in the credibility scale, specifically the 'believability of product information' item, $F(1, 786)= 5.713$, $p< 0.05$ (0.017), $\eta^2_{partial}=0.07$: RIs who are exposed to the short time-horizon framing condition evaluate product information as significantly more believable than individuals in the long time framing condition ($M_{short}=3.51$ versus $M_{long}=3.34$, SD 0.989 and 0.967) (see Table 5).

[Insert Table 5 about here]

Main effect investment goal framing

– *RI intention to engage with financial product*

There is no main effect for RI intention to engage with financial product. However, we find a significant main effect for the item 'recommend to friends and family' (see Table 1) under investment goal framing, $F(1, 786)= 4.791$, $p< 0.05$ (0.038), $\eta^2_{partial}=0.05$: RIs who are exposed to protect investment goal framing indicate a significantly stronger intention to recommend the financial product to friends and family than individuals who are exposed to achieve investment goal framing ($M_{protect}=2.51$ versus $M_{achieve}=2.36$, SD 1.02 and 1.08, respectively).

[Insert Table 1 about here]

– *RI evaluation of credibility of product information*

ANOVA tests reveal that 'credibility of product information' has a main effect for investment goal framing, $F(1, 786)= 4.655$, $p< 0.05$ (0.031), $\eta^2_{partial}=0.06$: RIs who are exposed to protect investment goal framing find product information significantly more credible than individuals who are exposed to achieve investment goal framing ($M_{protect}=3.40$ versus $M_{achieve}=3.29$, SD 0.753 and 0.40, respectively) (see Table 2). Within that, the items 'not trustworthy/trustworthy' and 'biased/not biased' show main effects under investment goal framing: RI who were exposed to protect investment frame find the information significantly more trustworthy than those who are exposed to achieve framing $F(1, 786)= 6.334$, $p<0.05$ (0.012), $\eta^2_{partial}=0.08$; $M_{protect}=3.47$ versus $M_{achieve}=3.30$, SD 0.946 and 0.910, respectively. A similar effect is found for the item 'biased/not biased': $F(1, 786)= 3.144$, $p<0.1$ (0.077), $\eta^2_{partial}=0.04$; $M_{protect}=3.10$ versus $M_{achieve}=2.97$, SD 0.994 and 1.036, respectively.

[Insert Table 2 about here]

– *RI evaluation of product information*

There is no main effect for the scale 'RI evaluation of product information'. However, we find a significant main effect for the item 'not eye-catching/eye-catching' (see Table 3). A 2x2 ANOVA on the 'eye-catching' score reveals a main effect for *investment goal framing*, $F(1, 786)= 4.195$, $p< 0.05$ (0.041), $\eta^2_{partial}=0.05$: RIs who are exposed to achieve investment goal framing evaluate product information as significantly more eye-catching than individuals who are exposed to protect investment goal framing ($M_{achieve}=3.40$ versus $M_{protect}=3.24$, SD 1.053 and 1.089, respectively).

[Insert Table 3 about here]

– *RI negative emotions towards product information*

A 2x2 ANOVA on the 'negative emotions towards product information' scale reveals a main effect for *investment goal framing*, $F(1, 786)= 7.281$, $p< 0.01$ (0.007), $\eta^2_{partial}=0.09$: RIs who are exposed to achieve investment goal framing indicate significantly stronger negative emotions towards product information than individuals who are exposed to protect investment goal framing ($M_{achieve}=1.96$ versus $M_{protect}=1.79$, SD 0.962 and 0.859, respectively) (see Table 4). Moreover, exploring individual items within the scale, we find that both 'fearful' and

'nervous' emotions towards product information are always significantly stronger for RIs who are exposed to achieve investment goal framing. For 'fearful' $F(1, 786)= 4.954$, $p< 0.05$ (0.026), $\eta^2_{partial}=0.06$, $M_{achieve}=1.89$ versus $M_{protect}=1.73$, SD 1.052 and 0.935, respectively; for 'nervous' $F(1, 786)= 6.401$, $p< 0.05$ (0.012), $\eta^2_{partial}=0.08$, $M_{achieve}=2.03$ versus $M_{protect}=1.84$, SD 1.121 and 1.017, respectively.

[Insert Table 4 about here]

Interaction Effects Time-horizon x Investment goal framings

A 2x2 ANOVA reveals no interaction effects for the dependent variables. However, we identify a significant interaction effect under 'evaluation of product information', specifically for the 'dull/interesting' item, $F(1, 786)= 4.503$, $p< 0.05$ (0.034), $\eta^2_{partial}=0.06$: RIs who are exposed to SP and LA frames evaluate product information as significantly more interesting than individuals who are exposed to LP or SA (see Table 6 and Figure 3).

[Insert Table 6 and Figure 3 about here]

Stage 2: PLS-SEM (regressions) and MGA of predictor variables and control variables

Regression analysis (analysis of RQ2) in all four conditions

To understand whether the role and importance of person-related factors, context-related factors and product assessment in predicting RI intention to engage with the product varies in depending on the 2x2 framing conditions, four separate regression analyse were conducted, see Table 7 for "basic table of effects".

[Insert Table 7 about here]

The analysis suggests three independent variables that significantly increase RI intention to engage with financial products across all four investigated experimental conditions: positive evaluations and positive emotions towards product information (where the former predictor is (descriptively) higher for the SP condition ($\beta=0.443$, $p=0.000$), while the latter is higher for LP condition ($\beta=0.537$, $p=0.000$)), as well as ATFR, which falls under context-related factors, which is found particularly influential for RIs who were exposed to the SA frame ($\beta=0.287$, $p=0.000$).

Apart from shared predictor effects, the findings reveal a number of specific effects in relation to the four manipulation groups. As such, sensation seeking, which is embedded in the person-related group of factors, is found to be most influential for RIs who were exposed to LA conditions ($\beta=0.176$, $p=0.003$). Financial satisfaction as a context-related factor is found to be negatively related to RI propensity to engage with financial products in the SA frame ($\beta= -0.109$, $p=0.015$). Finally, from the context related factors, positive emotions towards finance/investment appear to have a significant *negative* impact on RIs intentions for both LP and SP fames, $\beta= -0.220$, $p=0.027$ and $\beta= -0.228$, $p=0.006$ respectively.

PLS-SEM multi-group analysis was performed to test for group differences between LA vs SA and LP vs SP, as well as to test for the impact of control variables.

SA vs LA. There are four significant differences when comparing SA and LA across three main drivers. Specifically, the path from financial satisfaction to RI intentions to engage with

financial product has a significantly stronger *negative* impact on those respondents who received the SA leaflet compared to LA (β_{SA}=-0.109, β_{LA}=0.017, p<0.1). The path between positive emotions towards product information and RI intentions is found to be significantly stronger for the LA compared to the SA group (β_{LA}=0.457, β_{SA}=0.264, p<0.05). Sensation seeking is found to be a stronger predictor of RI intentions for the LA compared to SA (β_{LA}=0.176, β_{SA}=0.055, p<0.05). Finally, positive emotions towards life are found to be a significantly stronger, but negative, predictor for RI intentions for LA rather than SA conditions (β_{LA}= -0.145, β_{SA}=0.051, p<0.05) (see Table 8).

[Insert Table 8 about here]

SP vs LP. When comparing SP to LP, we identify three significant differences in paths within the product assessment predictors. Specifically, the impact of evaluations of product information are significantly stronger for the SP condition than for LP (β_{SP}=0.443, β_{LP}=0.169, p<0.05). A second significant difference is found in the path between positive emotions towards product information and RI indented behaviour; this path is significantly weaker for the SP compared to the LP condition (β_{SP}=0.268, β_{LP}=0.537, p<0.01). The third path between negative emotions towards product information and RI intentions to engage with financial product is significantly stronger, but negative, for the LP compared to the SP condition (β_{LP}=-0.135, β_{SP}=-0.004, p<0.1) (see Table 8 above).

LA vs LP. We identify a significant difference between the two groups, in that sensation seeking has a significantly stronger effect on RI intentions for the LA than for the LP condition (β_{LA}=0.181, β_{LP}=-0.016, p<0.1).

[Insert Table 9 about here]

SA vs SP. There are two significant differences in the model when comparing SA versus SP. The first path is related to the impact of positive emotions towards finance/investment as a predictor variable. In particular, positive emotions towards finance/investment are significantly stronger, but negative, for the group SP than for SA (β_{SP}=-0.228, β_{SA}=0.220, p<0.01. Finally, the impact of evaluations of product information is found to be significantly different for the two groups, such that it is significantly stronger for SP than for SA (β_{SP}=0.443, β_{SA}=0.169, p<0.01) (see Table 9 above).

MGA analysis of control groups

Testing for control variables reveals a number of significant differences within each manipulation group. Please note, in the text below we only describe paths that were found significant in simple regressions in Table 7 presented earlier.

Long time-horizon and achieve frames: The path between positive evaluation of product information and RIs propensity to engage with financial products is significantly stronger for **younger** respondents (18-39 y.o.), than older participants (40+y.o.). Similar results are found for respondents who possess **higher levels of financial knowledge,** while the impact of evaluations of product information on RI intentions is not significant for those with lower level of financial knowledge. The path between positive emotions towards life and RI intended behaviour is significantly stronger, but negative, for **less knowledgeable, female, and low income** (<£50k) respondents (while this path is not significant for more knowledgeable, male, and high income (>£50k) RIs) (see Table 10).

[Insert Table 10 about here]

Short time-horizon and Achieve frames: The relationship between ATFR and RI intentions is found to be significantly stronger for **female** and **unexperienced** participants, than for male and experienced respondents respectively. Similarly, this path is significantly stronger for **house owners** (while it is not significant for those who do not own a house). Next, the path between financial satisfaction and RI intentions is stronger, but negative, for **more knowledgeable** RIs (while this path is not significant for less knowledgeable respondents) (see Table 11).

[Insert Table 11 about here]

Long time-horizon and Protect frames: We find that ATFR is a significantly stronger predictor of RIs intentions among **younger** people (18-39 y.o), than older RIs (40+y.o). The path between positive emotions towards finance and RI intentions is significantly stronger, but negative, for **male** participants (while the path is not significant for female RIs). Finally, the relationship between negative emotions towards product information and RIS intentions is stronger, but negative, for **female** and **unexperienced** RIs (while this path is not significant for either male or experienced RIs) (see Table 12).

[Insert Table 12 about here]

Short time-horizon and Protect frames: The path between evaluation of product information and RI intentions is significantly stronger for **female** and **younger** participants, compared to male and older RIs. Moreover, this path is significantly stronger for RIs with **higher income** (while it is not significant for participants with lower income). Credibility of product information is stronger for **males** and those with **higher income** (>£50k) (while this path is not significant for female and low income (<£50k) RIs). Positive emotions towards product information are stronger for **lower income** and **older** participants (40+y.o) (and not significant for younger and high income RIs). We find that ATFR impact on RIs intentions to engage with financial product is stronger for **women**, while the path is not significant for male. Finally, the path is also significantly stronger for **unexperienced** RIs compared to experienced RIs (see Table 13).

[Insert Table 13 about here]

Discussion

To aid the discussion of our findings, Figure 4 summarises key findings in the format of a graphical display, following our 2x2 experimental study design, in which each quadrant summarises findings relevant for this specific experimental condition (i.e. labelled as 'short-term protect' (SP); 'short-term achieve' (SA); 'long-term protect' (LP); and 'long-term achieve' (LA)). At the same time, figure 4 captures insights relevant to all four quadrants in the text box in the middle of the figure, overlapping with all four quadrants; and insights relevant to two quadrants at a time through the text boxes that sit at the interface between two quadrants.

[Insert Figure 4 about here]

Our study identifies three predictor variables that significantly impact RI intention to engage with financial products across all four investigated experimental conditions (with varied time-horizon and investment-goal framing – see middle box in figure 4), and as such are core elements to consider by researchers as well as managers when informing RIs about possible

investments. Specifically, two of these predictor variables relate to assessments of product information, i.e. whether RI evaluate the information positively (such as being informative, appealing, clear etc.) and whether the product information elicits positive emotions (such as feelings of inspiration, pride, alertness). The third predictor variable relates to RI attitudes towards financial risk (ATFR), suggesting that RIs with higher risk attitude scores are more likely to engage with any of the suggested investment products. These findings are resonant of the importance that has been placed on risk attitude measures among practitioners (Corter and Chen, 2006; Grable et al., 2008), as well as resonant of calls by regulators such as the FCA to communicate and advertise financial products in a way that is understood and positively evaluated by RIs (FCA, 2017). However, these findings also highlight potential risks with product advertisement in that marketing and branding tools (such as making investment leaflets eye-catching or visually appealing) may attract RI intention regardless of whether the product actually fits RIs needs and financial capacity, and that higher risk attitude scores may also lead RIs to more engagement with investment products, again regardless of the actual suitability of the product to their financial, emotional and social circumstances.

Beyond these shared findings across quadrants, our study identifies a number of novel effects that relate specifically to different experimental conditions. Products with 'protect' investment goal framing are overall more likely to be recommended to family and friends, possibly because they also emerge from our findings to be seen as more trustworthy and less biased. As people typically have the best interest of family and friends in mind, it seems that a 'protect' framing may be seen as a safe and trusted choice to not put family members and friends at risk. At the same time however, products with 'achieve' framing are perceived as more eye-catching, while also eliciting more negative emotions of fearfulness and nervousness than 'protect' framed product. Hence, in terms of attracting attention and eliciting emotions, even if mixed positive and negative emotions, the 'achieve' framing seems more compelling and exciting to RIs.

In terms of time-horizon, 'short-term' framed products are seen more interesting (specifically for the protect goal frame) and more believable than 'long-term' framed products in our study overall[7]. However, in that context, 'short-term' products with an 'achieve' investment goal emerges as less engaging for RIs who describe themselves as high on financial satisfaction, and this is particularly true for RIs who are also high on financial knowledge. It seems, therefore, that financial satisfaction alongside financial knowledge adversely impacts RI intention to engage specifically with 'short-term achieve' investments. One may speculate that this group of RIs may not feel the need to 'make money in the short term' and may have levels of financial knowledge that let them see beyond the otherwise appealing notion of quick returns. However, our analysis of control variables further suggests that 'short-term achieve' products are particularly attractive to women and less financially experienced RIs when combined with high attitudes towards financial risk scores (ATFR). Interestingly, the same subgroup of women and less financially experienced RIs who simultaneously exhibit high ATFR scores are also more engaged in 'short-term protect' framed investments. In other words, a female and/or financial unexperienced RI who nevertheless carries a high risk appetite is particularly attracted by 'short-term achieve and/or protect' products, which poses questions of corporate responsibility for financial institutions and firms as to whether 'short-term' framed products may in parts attract RIs who are tempted by potential quick returns due to a personal risk appetite rather than experience, and/or who may due to their personal risk appetite not be as receptive to a longer-term financial planning process, despite the potential usefulness of such an approach.

Our findings furthermore reveal an interesting insight in relation to 'achieve' but 'long-term' framed products in that RIs high in sensation-seeking scores are more likely to engage with that specific type of investment. Sensation-seekers, as they are typically called in psychology literature, are classically described as having a higher need for "varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences" (Zuckerman, 1979: p.10), and as such it sounds in-character that this group of RIs is more attracted by a more risky 'achieve' investment goal. It is interesting, however, that this is combined with a 'long-term' framed investment choice, possibly due to the higher returns that can be achieve over a longer time period, compared to the somewhat less dramatic returns to be achieved in the short-term. This finding illustrates how personality characteristics such as a need for stimulation and excitement may actually impact investment choices beyond a rational assessment of risks and benefits, which again poses interesting challenges to regulators and firms.

Finally, our study suggests a number of control effects that complement the emerging picture of synergy and differences between RI exposure to different experimental conditions: High-income RIs can be engaged in 'short-term protect' products particularly through product information that they evaluate positively as well as credible – suggesting an expectations by high income individuals to be well informed and a need to be convinced before taking action. This may reflect that high-income individuals tend to work in employment situations in which the need for thorough investigation and formal assessment of situations is perceived as important. Other than income, male RIs are particularly interested in the credibility of 'short-term protect' products, while women and younger participants score their evaluation of product information as particularly important for their engagement with such investments.

With regard to control-effects of 'long-term' framed products, two final findings are worth discussing: First, among RIs with positive emotions towards life generally, participants who are female, low-income and less knowledgeable stand out as being significantly less likely to engage in 'long-term achieve' products than their counterparts. This finding can be seen to reinforce our earlier finding that 'achieve' products, while eye-catching, can elicit emotions of fearfulness and nervousness which may not easily co-exist with a desire and expression for overall positive life emotions and such a discrepancy may be felt particularly strongly in these three groups. At the same time, it needs to be noted that 'long-term achieve' products emerge as particularly engaging for younger respondents and respondents with high levels of financial knowledge, if they evaluate the product information positively. Second, control findings on 'long-term protect' products reveal that high attitude towards financial risk (ATFR) drives younger participants stronger than older participants, possibly reflecting the impact of life-experience on general risk appetite, while negative emotions towards product information impact women and less experienced participants stronger, reinforcing earlier findings that female participants may be stronger impacted by the extent to which the product elicits strong emotional reactions in them. Interestingly, the one area in which emotions impact stronger on male respondents is positive emotions towards finance, which engages male participants stronger in 'long-term protect' investment products. Hence, for male participants emotions that are specifically channelled towards the financial context are the only emotional impact factor that we could find in our control variables, while female participants were impacted on a number of the control investigations in terms of the emotions (positive and negative) that they felt towards the product and/or life in general.

References

Agnew, J. and Szykman, L. 2005. Asset allocation and information overload: The influence of information display, asset choice, and investor experience. *The Journal of Behavioural Finance*, 6(2), 57–70.

Albrecht, P., Maurer, R., and Ruckpaul, U. 2001. Shortfall-risks of stocks in the long run. *Financial Markets and Portfolio Management*, 15, 481–499.

Anderson, B.F. and Settle, J.W. 1996. The influence of portfolio characteristics and investment period on investment choice. *Journal of Economic Psychology*, 17(3), 343–358.

Arch, E. C. 1993. A motivational basis for sex- differences. *Psychological Reports*, 73(1), 3–11.

Baker, M.J. and Churchill Jr, G.A., 1977. The impact of physically attractive models on advertising evaluations. *Journal of Marketing Research*, 14(4), 538–555.

Benartzi, S. and Thaler, R.H., 1999. Risk aversion or myopia? Choices in repeated gambles and retirement investments. *Management Science*, 45(3), 364–381.

Bluethgen R, Meyer S, and Hackethal A. 2008b. High-quality advice wanted. Working paper.

Bluethgen, R., Gintschel, A., Hackethal, A. and Mueller, A. 2008a. Financial Advice and Individual Investors' Portfolios. Working paper series. Social Science Research Network.

Brewer, M. B., and Kramer, R. M. 1986. Choice behaviour in social dilemmas: Effects of social identity, group size, and decision framing. *Journal of Personality and Social Psychology*, 50(3), 543–549.

Corter, J.E. and Chen, Y.J., 2006. Do investment risk tolerance attitudes predict portfolio risk? *Journal of Business and Psychology*, 20(3), 369–381.

Clark-Murphy, M., & Soutar, G. 2004. What individual investors value: Some Australian evidence. *Journal of Economic Psychology*, 25(4), 539–555.

Diacon, S. and Hasseldine, J., 2007. Framing effects and risk perception: The effect of prior performance presentation format on investment fund choice. *Journal of Economic Psychology*, 28(1), 31–52.

FCA. 2017. *FCA reveals findings from its first Financial Lives Survey*. [online] Available at: https://www.fca.org.uk/news/press-releases/fca-reveals-findings-from-first-financial-lives-survey [Accessed 2 Feb. 2018].

Ganzach, Y. and Karsahi, N. 1995. Message framing and buying behaviour: A field experiment. *Journal of Business Research*. 32(1), 11–17.

Grable, J. and Roszkowski, M.J. 2008. The influence of mood on the willingness to take financial risks. *Journal of Risk Research*, 11(7), 905–923.

Grable, J., Britt, S. and Webb, F. 2008. Environmental and Biopsychosocial Profiling as a Means for Describing Financial Risk-Taking Behaviour. *Journal of Financial Counselling and Planning*, 19(2): 3–18.

Grable, J.E. 2000. Financial risk tolerance and additional factors that affect risk taking in everyday money matters. *Journal of Business and Psychology*, 14(4), 625–630.

Grable, J.E. and Joo, S-H. 2004. Environmental and biophysical factors associated with financial risk tolerance. *Journal of Financial Counselling and Planning*, 15(1), 73–82.

Green, L. and Myerson, J., 2004. A discounting framework for choice with delayed and probabilistic rewards. *Psychological Bulletin*, 130(5), 769–792.

Hair Jr, J.F., Hult, G.T.M., Ringle, C. and Sarstedt, M., 2016. *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.

Hair Jr, J.F., Sarstedt, M., Ringle, C.M. and Gudergan, S.P., 2017. *Advanced issues in partial least squares structural equation modeling*. SAGE Publications.

Hair, J.F., Ringle, C.M. and Sarstedt, M., 2013. Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning,* 46(1-2), 1–12.

Harman, H.H., 1976. *Modern factor analysis*. University of Chicago Press.

Hasseldine J. and Hite, PA. 2003. Framing, gender and tax compliance. *Journal of Economic Psychology*. 24(4), 517–533.

Hillenbrand, C., Money, K. and Ghobadian, A., 2013. Unpacking the mechanism by which corporate responsibility impacts stakeholder relationships. *British Journal of Management*, 24(1), 127–146.

Hira, T.K. and Mugenda, O.M., 1998. Predictors of financial satisfaction: Differences between retirees and non-retirees. *Journal of Financial Counselling and Planning*, *9*(2), 75–84.

Hirshleifer, D. and Shumway, T., 2003. Good day sunshine: Stock returns and the weather. *The Journal of Finance*, 58(3), 1009–1032.

Holler, M., Hoelzl, E., Kirchler, E., Leder, S. and Mannetti, L., 2008. Framing of information on the use of public finances, regulatory fit of recipients and tax compliance. *Journal of Economic Psychology*, 29(4), 597–611.

Judge, T. A., Thoresen, C. J., Pucik, V., & Welbourne, T. M. (1999) Managerial coping with organizational change: a dispositional perspective. *Journal of Applied Psychology*, 84(1), 107–122.

Kahneman, D., 2011. *Thinking, fast and slow*. Macmillan.

Kamstra, M.J., Kramer, L.A. and Levi, M.D., 2003. Winter blues: A SAD stock market cycle. *American Economic Review*, 93(1), 324–343.

Klos, A., Weber, E.U. and Weber, M., 2005. Investment decisions and time horizon: Risk perception and risk behaviour in repeated gambles. *Management Science*, 51(12), 1777–1790.

Krueger, N. and Dickson, P.R. 1994. How believing in ourselves increases risk taking: Perceived self-efficacy and opportunity recognition. *Decision Sciences*, 25(3), 385–400.

Kühberger, A., 1998. The influence of framing on risky decisions: A meta-analysis. *Organizational Behaviour and Human Decision Processes*, 75(1), 23–55.

Lerner, J.S. and Keltner, D. 2000. Beyond valence: Toward a model of emotion-specific influences on judgement and choice. *Cognition & Emotion*, 14(4), 473–493.

Lerner, J.S., Li, Y., Valdesolo, P. and Kassam, K.S. 2015. Emotion and decision making. *Annual Review of Psychology*, 66, 799–823

Levin, I., Schneider, S., and Gaeth, G. 1998. All frames are not created equal: A typology and critical analysis of framing effects. *Organizational Behaviour and Human Decision Processes*, 76(2), 149–188.

Levin, I.P., Gaeth, G.J., Schreiber, J. and Lauriola, M., 2002. A new look at framing effects: Distribution of effect sizes, individual differences, and independence of types of effects. *Organizational Behaviour and Human Decision Processes*, 88(1), 411–429.

Levy, J.S., 1996. Loss aversion, framing, and bargaining: The implications of prospect theory for international conflict. *International Political Science Review*, 17(2), 179–195.

Lindell, M.K. and Whitney, D.J., 2001. Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, 86(1), 114–121.

Loewenstein, G., 1996. Out of control: Visceral influences on behaviour. *Organizational Behaviour and Human Decision Processes*, 65(3), 272–292.

Loewenstein, G.F., Weber, E.U., Hsee, C.K. and Welch, N., 2001. Risk as feelings. *Psychological Bulletin*, 127(2), 267–286.

MacCrimmon, K.R. and Wehrung, D.A., 1990. Characteristics of risk taking executives. *Management Science*, 36(4), 422–435.

MacCrimmon, K.R., Wehrung, D. and Stanbury, W.T., 1988. *Taking risks*. Simon and Schuster.

MacKenzie, S.B. and Lutz, R.J., 1989. An empirical examination of the structural antecedents of attitude toward the ad in an advertising pretesting context. *The Journal of Marketing*, 53(2), 48–65.

Malkoc, S.A. and Zauberman, G., 2006. Deferring versus expediting consumption: The effect of outcome concreteness on sensitivity to time horizon. *Journal of Marketing Research*, 43(4), 618–627.

Meyerowitz BE, Chaiken S. 1987. The effect of message framing on breast self-examination attitudes, intentions, and behaviour. *Journal of Personality and Social Psychology*, 52(3), 500–510.

Perry, V.G. and Morris, M.D., 2005. Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behaviour. *Journal of Consumer Affairs*, 39(2), 299–313.

Porter, N. M., and Garman, E. T. 1993. Testing a conceptual model of financial wellbeing. *Financial Counselling and Planning*, 4, 135–164.

Read, D., 2004. Intertemporal choice. In: Koehler, D, Harvey, N (Eds.), *Blackwell Handbook of Judgment and Decision Making*. Blackwell, Oxford, pp. 424–443.

Reber, R., Winkielman, P., and Schwarz, N. 1998. Effects of perceptual fluency on affective judgments. *Psychological Science*, 9(1), 45–48.

Ringle, C.M., Sarstedt, M. and Straub, D.W., 2012. Editor's Comments: A Critical Look at the Use of PLS-SEM in "MIS Quarterly". *MIS Quarterly*, iii-xiv.

Robb, C.A. and Woodyard, A., 2011. Financial knowledge and best practice behaviour. *Journal of Financial Counselling and Planning*, 22(1), 60–70.

Rozin, P., 1986. One-trial acquired likes and dislikes in humans: Disgust as a US, food predominance, and negative learning predominance. *Learning and Motivation*, 17(2), 180–189.

Sarstedt, M., Henseler, J. and Ringle, C.M., 2011. Multigroup analysis in partial least squares (PLS) path modeling: Alternative methods and empirical results. In *Measurement and Research Methods in International Marketing*. Emerald Group Publishing Limited.

Sarstedt, M., Ringle, C.M., Smith, D., Reams, R. and Hair Jr, J.F., 2014. Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, 5(1), 105–115.

Schooley, D.K. and Worden, D.D., 1999. Investors' asset allocations versus life-cycle funds. *Financial Analysts Journal*, 55(5), 37–43.

Shafi, H., Akram, M., Hussain, M., Sajjad, S.I. and Rehman, K.U., 2011. Relationship between risk perception and employee investment behaviour. *Journal of Economics and Behavioural Studies*, 3(6), pp. 345-351,

Shapira, Z. and Venezia, I., 2001. Patterns of behaviour of professionally managed and independent investors. *Journal of Banking & Finance*, 25(8), 1573–1587.

Siebenmorgen, N. and Weber, M., 2004. The influence of different investment horizons on risk behaviour. *The Journal of Behavioural Finance*, 5(2), 75–90.

Sitkin, S.B. and Weingart, L.R., 1995. Determinants of risky decision-making behaviour: A test of the mediating role of risk perceptions and propensity. *Academy of Management Journal*, 38(6), 1573–1592.

Sitkin, S.B. and Weingart, L.R., 1995. Determinants of risky decision-making behaviour: A test of the mediating role of risk perceptions and propensity. *Academy of Management Journal*, 38(6), 1573–1592.

Soman, D., Ainslie, G., Frederick, S., Li, X., Lynch, J., Moreau, P., Mitchell, A., Read, D., Sawyer, A., Trope, Y. and Wertenbroch, K., 2005. The psychology of intertemporal discounting: Why are distant events valued differently from proximal ones? *Marketing Letters*, 16(3-4), 347–360.

Spiegel, S., Grant-Pillow, H., and Higgins, E.T. 2004. How regulatory fit enhances motivational strength during goal pursuit. *European Journal of Social Psychology*, 34(1), 39–54.

Stathopoulos, K. and Voulgaris, G., 2016. The impact of investor horizon on say-on-pay voting. *British Journal of Management*, 27(4), 796–818.

Sung, J. and Hanna, S., 1996. Factors related to risk tolerance. *Journal of Financial Counselling and Planning*, 7, 11–19.

Takahashi, T., Ohmura, Y., Oono, H. and Radford, M., 2009. Alcohol use and discounting of delayed and probabilistic gain and loss. *Neuroendocrinology Letters*, 30(6), 749–752.

Tegarden, D.P., 1999. Business information visualization. *Communications of the AIS*, 1(1es), 4.

Tversky, A. and Kahneman, D., 1985. The framing of decisions and the psychology of choice. In *Environmental Impact assessment, technology assessment, and risk analysis*. Springer, Berlin, Heidelberg.

Vinzi, V.E., Chin, W.W., Henseler, J. and Wang, H., 2010. Perspectives on partial least squares. In *Handbook of partial least squares*. Springer, Berlin, Heidelberg.

Watson, D., Clark, L.A. and Tellegen, A., 1988. Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, 54(6), p.1063–1070.

Weber, E. U., Blais, A.-R., Betz, E. 2002. A Domain-specific risk-attitude scale: Measuring risk perceptions and risk behaviours. *Journal of Behavioural Decision Making,* 15(4), 263–290.

West, B., Hillenbrand, C., Money, K., Ghobadian, A. and Ireland, R.D., 2016. Exploring the impact of social axioms on firm reputation: A stakeholder perspective. *British Journal of Management*, 27(2), 249–270.

Wong, A. and Carducci, B.J., 1991. Sensation seeking and financial risk taking in everyday money matters. *Journal of Business and Psychology*, 5(4), 525–530.

Yao, R., Hanna, S. and Lindamood, S., 2004. Changes in financial risk tolerance, 1983-2001. *Financial Services Review*, 13, 249–266.

Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Erlbaum.

Footnotes

[1] A retail investor is an individual who purchases securities for his or her own personal account rather than for an organization. (Investinganswers.com, 2018).

[2] For example, through requests for accompanying statements to graphs indicating that past performance is not an indicator for future performance.

[3] In this study, we only examine situations in which RIs encounter an investment product for the first time and from a provider they have not dealt with before. As such, we do not study existing relationships that RIs may hold with financial advisors or institutions or the relevance of brand or institutional names on RIs.

[4] Please note that 'assessment of product information' was used as a dependent measure in conceptual framework 1, as it was measured post product exposure, and as such lends itself for dependent measurement in a classic 2x2 ANOVA design. At the same time, the ultimate goal of this study is to understand factors that predict RI intention to engage with financial products, and RI assessment of product information is one of the key potential factors achieving this. As such, 'assessment of product information' is analysed alongside person-related factors and context-related factors as independent variables in our regression-type conceptualisation and analysis of framework 2.

[5] Searching through adverts and leaflets for financial products that were available on the UK market when this study was conducted in spring 2017, showed that timing and framing information are two key pieces of information almost always displayed with financial investment products. It also became apparent that such information is typically portrayed through a mix of descriptions, graphics, headlines and pictures. Hence, we followed this current practice and also portrayed the financial product information of interest in this study through a mixture of words and pictures.

[6] Since respondents were recruited by Qualtrics, the company ensured full completion of the survey.

[7] This finding may in parts reflect the study context of summer 2017 which can be characterised as containing high levels of uncertainty in the UK investment market, with BREXIT negotiations ongoing and high levels of ambiguity particularly around the long-term financial investment situations for RIs.

Figure 1. Graphical presentation of research framework 1

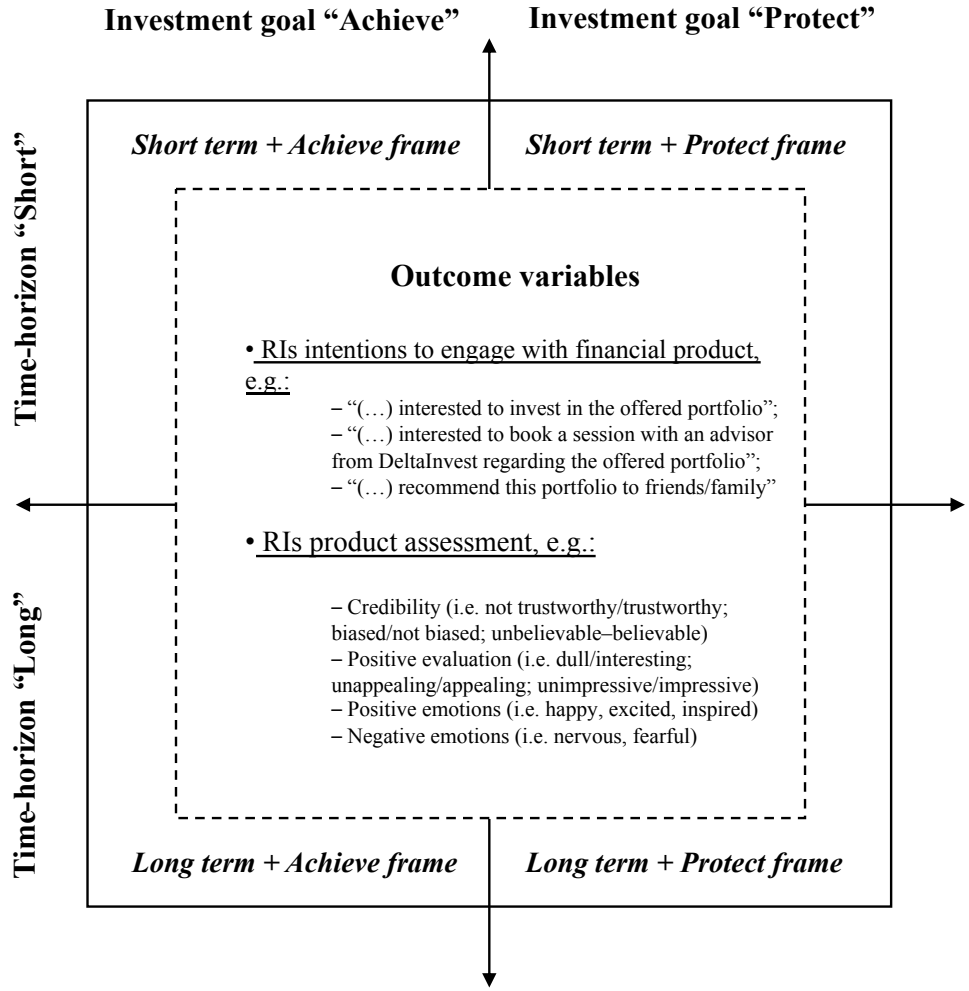


Figure 2. Graphical presentation of research framework 2

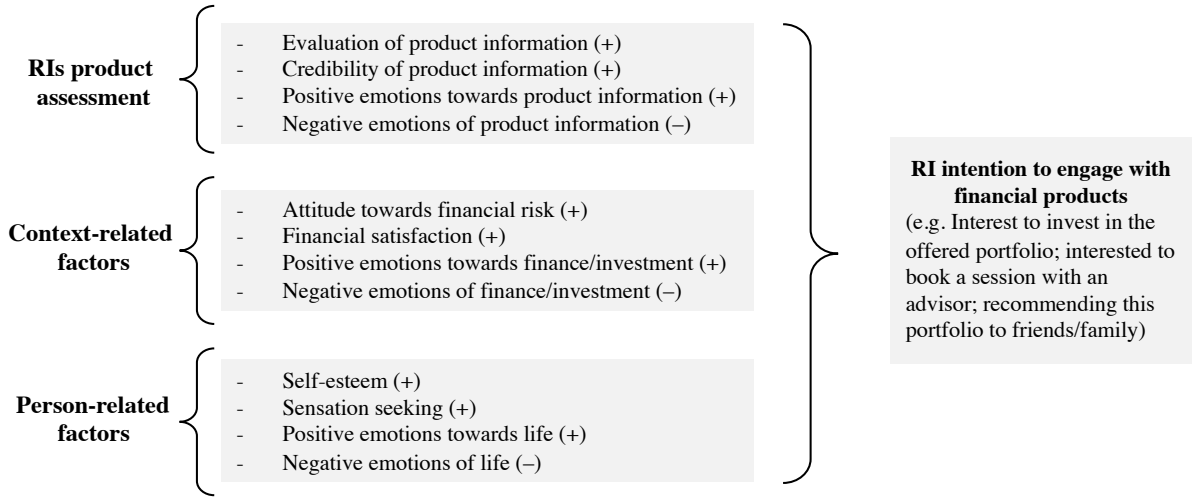


Table 1: Means and standard deviations of 'recommend to friends and family'.

Time Horizon	**Investment goal**		
	Achieve	*Protect*	*total*
Short	2.32 *(1.073)*	2.52 *(1.039)*	2.42 *(1.06)*
Long	2.4 *(1.089)*	2.51 *(1.005)*	2.45 *(1.049)*
total	2.36[1] *(1.081)*	2.51 *(1.021)*	

Table 2: Means and standard deviations of 'credibility of product information'.

	Credibility (scale)			**Trustworthy/not trustworthy** (item)			**Biased/not biased** (item)		
Time Horizon	Investment goal			Investment goal			Investment goal		
	Achieve	*Protect*	*total*	*Achieve*	*Protect*	*total*	*Achieve*	*Protect*	*total*
Short	3.31 *(0.763)*	3.46 *(0.702)*	3.38 *(0.737)*	3.31 *(0.968)*	3.52 *(0.895)*	3.41 *(0.937)*	2.99 *(1.047)*	3.19 *(0.964)*	3.09 *(1.010)*
Long	3.27 *(0.743)*	3.35 *(0.728)*	3.31 *(0.736)*	3.30 *(0.827)*	3.42 *(0.925)*	3.36 *(0.927)*	2.95 *(1.028)*	3.01 *(1.018)*	2.97 *(1.022)*
total	3.29 (0.753)	3.40 *(0.716)*		3.30 *(0.946)*	3.47 *(0.910)*		2.97 *(1.036)*	3.10 *(0.994)*	

Table 3: Means and standard deviations of 'evaluations of product information'.

	Evaluations of product information (scale)			**Eye-catching/ not eye-catching** (item)		
Time Horizon	Investment goal			Investment goal		
	Achieve	*Protect*	*total*	*Achieve*	*Protect*	*total*
Short	3.33 *(0.879)*	3.35 *(0.849)*	3.34 *(0.864)*	3.35 *(1.097)*	3.27 *(1.049)*	3.31 *(1.073)*
Long	3.39 *(0.759)*	3.28 *(0.832)*	3.34 *(0.796)*	3.45 *(1.007)*	3.21 *(1.129)*	3.34 *(1.073)*
total	3.36 (0.821)	3.32 *(0.840)*		3.40 *(1.053)*	3.24 *(1.089)*	

[1] Note: Entries are means on a five-point scale, with higher values indicating higher ratings of 'recommend to friends and family' scores. Standard deviations are within parentheses.

Table 4: Means and standard deviations of 'negative emotions towards product information'.

	Negative emotions towards product information (scale)			**Fearful** (item)			**Nervous** (item)		
Time Horizon	Investment goal			Investment goal			Investment goal		
	Achieve	*Protect*	*total*	*Achieve*	*Protect*	*total*	*Achieve*	*Protect*	*total*
Short	1.97 *(0.971)*	1.78 *(0.858)*	1.88 *(0.921)*	1.90 *(1.094)*	1.74 *(0.959)*	1.82 *(1.032)*	2.05 *(1.144)*	1.81 *(0.996)*	1.93 *(1.079)*
Long	1.95 *(0.956)*	1.80 *(0.863)*	1.87 *(0.914)*	1.88 *(1.012)*	1.72 *(0.913)*	1.80 *(0.967)*	2.02 *(1.099)*	1.87 *(1.041)*	1.95 *(1.073)*
total	1.96 *(0.962)*	*1.79 (0.859)*		1.89 *(1.052)*	1.73 *(0.935)*		2.03 *(1.121)*	1.84 *(1.017)*	

Table 5: Means and standard deviations of 'believability of product information'.

Time Horizon	**Investment goal**		
	Achieve	*Protect*	*total*
Short	3.45 *(1.001)*	3.57 *(0.975)*	3.51 *(0.989)*
Long	3.31 *(0.985)*	3.38 *(0.948)*	2.34 *(0.967)*
total	3.38 *(0.994)*	3.48 *(0.966)*	

Table 6: Means and standard deviations of 'evaluations of product information'.

	'Interesting'		
Time Horizon	Investment goal		
	Achieve	*Protect*	*total*
Short	3.33 *(1.107)*	3.39 *(1.111)*	3.36 *(1.108)*
Long	3.47 *(0.973)*	3.21 *(1.070)*	3.34 *(1.028)*
total	3.40 *(1.043)*	3.30 *(1.093)*	

Figure 3. Investment goal x Time-horizon interaction effects for evaluations of product information as 'interesting/not interesting'

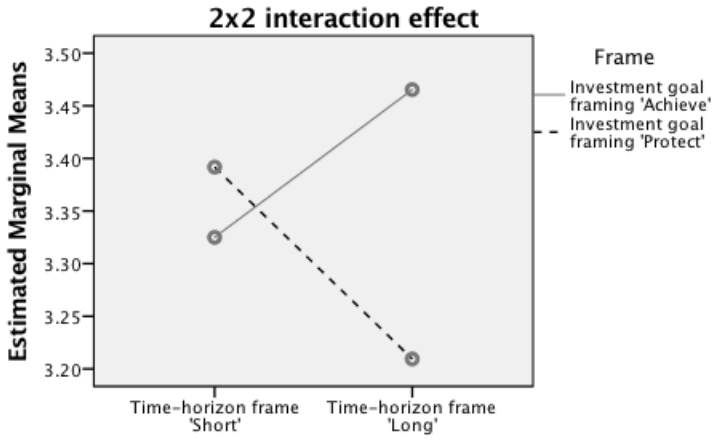


Table 7. 'Basic' table of effects: four models

Path relationships	Long time-horizon and Achieve frames				Short time-horizon and Achieve frames				Long time-horizon and Protect frames				Short time-horizon and Protect frames			
	Mean	*s.d.*	*Path*	*p-Value*	*Mean*	*s.d.*	*Path*	*p-Value*	*Mean*	*s.d.*	*Path*	*p-Value*	*Mean*	*s.d.*	*Path*	*p-Value*
Evaluation of product information -> RIs intentions	3.39	0.76	0.200	0.007	3.33	0.88	0.209	0.000	3.28	0.83	0.169	0.025	3.35	0.85	0.443	0.000
Credibility of product information -> RIs intentions	3.27	0.74	0.138	0.065	3.31	0.76	0.088	0.127	3.35	0.73	0.015	0.832	3.46	0.70	0.108	0.094
Positive emotions towards product information -> RIs intentions	2.33	1.07	0.457	0.000	2.36	1.06	0.264	0.000	2.27	1.05	0.537	0.000	2.36	1.03	0.268	0.000
Negative emotions towards product information -> RIs intentions	1.95	0.96	-0.050	0.385	1.97	0.97	-0.029	0.560	1.80	0.86	-0.135	0.063	1.78	0.86	0.004	0.952
Attitude towards financial risk -> RIs intentions	2.69	0.82	0.189	0.002	2.60	0.79	0.287	0.000	2.67	0.77	0.259	0.000	2.71	0.80	0.264	0.000
Financial Satisfaction -> RIs intentions	3.49	1.05	0.017	0.804	3.53	0.96	-0.109	0.015	3.49	1.05	0.030	0.548	3.46	1.11	0.010	0.876
Positive emotions towards finance -> RIs intentions	2.78	1.02	-0.035	0.702	2.70	1.01	0.076	0.351	2.64	1.00	-0.220	0.027	2.78	1.04	-0.228	0.006
Negative emotions towards finance -> RIs intentions	2.48	1.04	-0.002	0.977	2.56	1.09	-0.021	0.735	2.49	1.14	-0.053	0.561	2.49	1.09	-0.049	0.512
Self-esteem -> RIs intentions	3.74	0.72	-0.019	0.845	3.84	0.64	0.092	0.067	3.78	0.75	-0.008	0.930	3.76	0.71	-0.017	0.832
Sensation seeking -> RIs intentions	3.14	0.92	0.176	0.003	3.14	0.93	0.055	0.307	3.06	0.92	0.014	0.812	3.15	0.87	0.088	0.127
Positive emotions towards life -> RIs intentions	3.32	0.73	-0.145	0.093	3.32	0.75	0.051	0.382	3.36	0.75	0.006	0.949	3.36	0.73	0.031	0.656
Negative emotions towards life -> RIs intentions	1.68	0.65	0.099	0.191	1.66	0.59	0.057	0.488	1.63	0.67	0.205	0.118	1.69	0.65	0.114	0.208

Table 8. MGA between LA and SA; LP and SP

Path relationships	LA Path coefficients	SA Path coefficients	p-Value (LA vs SA)	LP Path coefficients	SP Path coefficients	p-Value (LP vs SP)
Evaluation of product information -> RIs intentions	0.200***	0.209***	0.537	0.169**	0.443***	0.996
Credibility of product information -> RIs intentions	0.138*	0.088	0.294	0.015	0.108	0.838
Positive emotions towards product information -> RIs intentions	0.457***	0.264***	0.040	0.537***	0.268***	0.006
Negative emotions towards product information -> RIs intentions	-0.050	-0.029	0.608	-0.135*	0.004	0.932
Attitude towards financial risk -> RIs intentions	0.189***	0.287***	0.884	0.259***	0.264***	0.525
Financial Satisfaction -> RIs intentions	0.017	-0.109**	0.062	0.030	0.010	0.394
Positive emotions towards finance -> RIs intentions	-0.035	0.076	0.821	-0.220**	-0.228***	0.472
Negative emotions towards finance -> RIs intentions	-0.002	-0.021	0.414	-0.053	-0.049	0.508
Self-esteem -> RIs intentions	-0.019	0.092*	0.849	-0.008	-0.017	0.474
Sensation seeking -> RIs intentions	0.176***	0.055	0.063	0.014	0.088	0.813
Positive emotions towards life -> RIs intentions	-0.145*	0.051	0.966	0.006	0.031	0.586
Negative emotions towards life -> RIs intentions	0.099	0.057	0.355	0.205	0.114	0.236

Table 9. MGA between LA and LP; SA and PS

Path relationships	LA Path coefficients	LP Path coefficients	p-Value (LA vs LP)	SA Path coefficients	SP Path coefficients	p-Value (SA vs SP)
Evaluation of product information -> RIs intentions	0.200***	0.209***	0.382	0.169**	0.443***	0.995
Credibility of product information -> RIs intentions	0.138*	0.088	0.115	0.015	0.108	0.592
Positive emotions towards product information -> RIs intentions	0.457***	0.264***	0.752	0.537***	0.268***	0.516
Negative emotions towards product information -> RIs intentions	-0.050	-0.029	0.183	-0.135*	0.004	0.665
Attitude towards financial risk -> RIs intentions	0.189***	0.287***	0.792	0.259***	0.264***	0.395
Financial Satisfaction -> RIs intentions	0.017	-0.109**	0.559	0.030	0.010	0.941
Positive emotions towards finance -> RIs intentions	-0.035	0.076	0.083	-0.220**	-0.228***	0.004
Negative emotions towards finance -> RIs intentions	-0.002	-0.021	0.318	-0.053	-0.049	0.376
Self-esteem -> RIs intentions	-0.019	0.092*	0.523	-0.008	-0.017	0.124
Sensation seeking -> RIs intentions	0.176***	0.055	0.027	0.014	0.088	0.664
Positive emotions towards life -> RIs intentions	-0.145*	0.051	0.882	0.006	0.031	0.416
Negative emotions towards life -> RIs intentions	0.099	0.057	0.796	0.205	0.114	0.683

Table 10. Long time-horizon and Achieve frames: Control variables analysis

Path relationships	Gender			Age			Income			Own a house		
	Male	*Female*	*p-Value*	*18-39y.o*	*40+ y.o*	*p-Value*	*<£50k*	*>£50k*	*p-Value*	*yes*	*no*	*p-Value*
Evaluation of product information -> RIs intentions	0.220**	0.159	0.646	0.452**	0.168**	0.079	0.221**	0.171	0.369	0.184**	0.194	0.489
Credibility of product information -> RIs intentions	0.226**	0.087	0.834	-0.016	0.177**	0.838	0.099	0.210*	0.764	0.148**	0.162	0.464
Positive emotions towards product information -> RIs intentions	0.415***	0.449***	0.430	0.378	0.427***	0.555	0.470***	0.474***	0.502	0.511***	0.298	0.805
Negative emotions towards product information -> RIs intentions	-0.007	-0.104	0.788	0.253	-0.109*	0.036	-0.026	-0.164	0.178	-0.115*	-0.103	0.447
Attitude towards financial risk -> RIs intentions	0.240***	0.122	0.798	0.471**	0.201***	0.107	0.210**	0.092	0.216	0.157**	0.173	0.458
Financial Satisfaction -> RIs intentions	-0.043	0.045	0.276	-0.073	0.018	0.670	0.033	-0.033	0.284	0.092	-0.037	0.776
Positive emotions towards finance -> RIs intentions	-0.163	0.064	0.121	-0.459*	0.010	0.957	0.034	-0.226*	0.079	-0.082	0.207	0.166
Negative emotions towards finance -> RIs intentions	-0.033	0.053	0.251	0.121	-0.011	0.233	0.003	0.050	0.636	-0.009	0.058	0.346
Self-esteem -> RIs intentions	-0.107	0.105	0.153	-0.016	-0.007	0.497	0.045	-0.051	0.295	-0.022	0.002	0.441
Sensation seeking -> RIs intentions	0.131	0.222**	0.288	0.218	0.115	0.249	0.197**	0.121	0.347	0.151***	0.272	0.264
Positive emotions towards life -> RIs intentions	0.053	-0.305**	0.955	0.097	-0.170*	0.197	-0.273**	0.176	0.982	-0.145*	-0.220	0.620
Negative emotions towards life -> RIs intentions	0.112	0.133	0.476	0.148	0.149	0.508	0.104	0.161	0.632	0.147	0.056	0.665

	RI experience			Financial knowledge		
	yes	*no*	*p-Value*	*high*	*low*	*p-Value*
Evaluation of product information -> RIs intentions	0.128	0.287**	0.150	0.311***	0.044	0.044
Credibility of product information -> RIs intentions	0.219**	0.096	0.791	0.110	0.199**	0.712
Positive emotions towards product information -> RIs intentions	0.499***	0.312**	0.857	0.466***	0.442***	0.424
Negative emotions towards product information -> RIs intentions	-0.038	-0.043	0.518	-0.004	-0.110	0.187
Attitude towards financial risk -> RIs intentions	0.175**	0.305***	0.156	0.111	0.264***	0.866
Financial Satisfaction -> RIs intentions	-0.078	0.109	0.083	-0.031	0.029	0.674
Positive emotions towards finance -> RIs intentions	-0.163	0.019	0.145	-0.185	0.047	0.899
Negative emotions towards finance -> RIs intentions	-0.020	0.050	0.283	-0.073	0.117	0.943
Self-esteem -> RIs intentions	0.043	-0.049	0.666	-0.107	0.086	0.858
Sensation seeking -> RIs intentions	0.108	0.231**	0.155	0.188*	0.213***	0.548
Positive emotions towards life -> RIs intentions	-0.012	-0.217	0.870	0.025	-0.241**	0.089
Negative emotions towards life -> RIs intentions	0.090	0.218	0.283	0.141	0.106	0.376

Table 11. Short time-horizon and Achieve frames: Control variables analysis

Path relationships	Gender			Age			Income			Own a house		
	Male	*Female*	*p-Value*	*18-39y.o*	*40+ y.o*	*p-Value*	*<£50k*	*>£50k*	*p-Value*	*yes*	*no*	*p-Value*
Evaluation of product information -> RIs intentions	0.188*	0.147	0.618	0.269	0.207***	0.350	0.201***	0.225*	0.574	0.179***	0.441	0.195
Credibility of product information -> RIs intentions	0.068	0.092	0.421	-0.141	0.161***	0.917	0.060	0.050	0.468	0.130**	-0.105	0.803
Positive emotions towards product information -> RIs intentions	0.357***	0.218*	0.809	0.331*	0.222***	0.309	0.284***	0.178	0.259	0.251***	0.232	0.530
Negative emotions towards product information -> RIs intentions	0.067	-0.098	0.951	-0.043	0.008	0.614	-0.072	-0.019	0.674	-0.029	-0.225	0.777
Attitude towards financial risk -> RIs intentions	0.237***	0.390***	0.080	0.274	0.353***	0.607	0.256***	0.396***	0.864	0.316***	-0.027	0.900
Financial Satisfaction -> RIs intentions	-0.141*	-0.120*	0.421	-0.078	-0.126**	0.346	-0.073	-0.192**	0.133	-0.106**	-0.011	0.296
Positive emotions towards finance -> RIs intentions	0.128	0.014	0.770	0.050	0.033	0.465	0.068	0.052	0.470	0.079	0.006	0.616
Negative emotions towards finance -> RIs intentions	-0.068	-0.037	0.398	-0.090	-0.049	0.598	-0.105	0.205**	0.985	0.034	-0.310	0.917
Self-esteem -> RIs intentions	0.132*	0.157**	0.415	0.150	0.057	0.303	0.075	0.222	0.824	0.084*	0.014	0.586
Sensation seeking -> RIs intentions	0.127*	-0.030	0.920	0.015	0.010	0.504	0.037	0.061	0.584	0.023	0.381	0.115
Positive emotions towards life -> RIs intentions	-0.032	0.076	0.186	0.056	0.083	0.563	0.045	-0.046	0.240	0.070	-0.017	0.646
Negative emotions towards life -> RIs intentions	-0.128	0.132	0.047	0.215	-0.078	0.089	0.052	0.024	0.427	0.072	0.103	0.468

	RI experience			Financial knowledge		
	yes	*no*	*p-Value*	*high*	*low*	*p-Value*
Evaluation of product information -> RIs intentions	0.174**	0.197**	0.424	0.206**	0.199***	0.478
Credibility of product information -> RIs intentions	0.203**	0.041	0.917	0.086	0.014	0.272
Positive emotions towards product information -> RIs intentions	0.227**	0.208*	0.549	0.242**	0.324***	0.706
Negative emotions towards product information -> RIs intentions	0.072	-0.114	0.967	0.036	-0.091	0.110
Attitude towards financial risk -> RIs intentions	0.194***	0.394***	0.045	0.292***	0.234***	0.306
Financial Satisfaction -> RIs intentions	-0.147***	-0.041	0.122	-0.313***	-0.035	0.997
Positive emotions towards finance -> RIs intentions	0.175**	-0.088	0.962	-0.007	0.061	0.667
Negative emotions towards finance -> RIs intentions	0.064	-0.125	0.945	0.020	-0.087	0.182
Self-esteem -> RIs intentions	0.113*	0.021	0.788	0.054	0.106	0.672
Sensation seeking -> RIs intentions	-0.044	0.082	0.126	0.049	0.049	0.506
Positive emotions towards life -> RIs intentions	0.092	0.056	0.620	0.281***	-0.025	0.013
Negative emotions towards life -> RIs intentions	0.032	0.147	0.267	0.099	0.083	0.470

Table 12. Long time-horizon and Protect frames: Control variables analysis

Path relationships	Gender			Age			Income			Own a house		
	Male	*Female*	*p-Value*	*18-39y.o*	*40+ y.o*	*p-Value*	*<£50k*	*>£50k*	*p-Value*	*yes*	*no*	*p-Value*
Evaluation of product information -> RIs intentions	0.143	0.153	0.470	0.139	0.205**	0.646	0.101	0.235*	0.802	0.190	0.029**	0.780
Credibility of product information -> RIs intentions	0.050	-0.030	0.714	0.241	-0.009	0.122	0.053	0.062	0.517	-0.039	0.257	0.077
Positive emotions towards product information -> RIs intentions	0.576***	0.389***	0.864	0.394	0.485***	0.605	0.525***	0.442***	0.333	0.523**	0.594***	0.395
Negative emotions towards product information -> RIs intentions	0.094	-0.304***	0.997	-0.150	-0.147	0.509	-0.161*	-0.007	0.848	-0.105*	-0.325	0.845
Attitude towards financial risk -> RIs intentions	0.366***	0.225***	0.876	0.502***	0.219***	0.084	0.323***	0.324*	0.550	0.291	0.298***	0.497
Financial Satisfaction -> RIs intentions	-0.003	0.075	0.260	0.148	0.008	0.189	0.008	0.068	0.684	0.027	-0.169	0.876
Positive emotions towards finance -> RIs intentions	-0.435***	-0.023	0.012	-0.487*	-0.209*	0.840	-0.174	-0.351**	0.195	-0.162	-0.407	0.814
Negative emotions towards finance -> RIs intentions	-0.159	0.110	0.048	-0.024	-0.100	0.354	-0.063	0.164	0.892	-0.007	0.024	0.442
Self-esteem -> RIs intentions	0.192	0.089	0.669	-0.210	0.077	0.849	0.012	-0.098	0.290	-0.098	-0.036	0.399
Sensation seeking -> RIs intentions	-0.031	0.066	0.226	0.006	0.021	0.542	-0.029	0.046	0.707	0.002	0.110	0.258
Positive emotions towards life -> RIs intentions	0.080	-0.097	0.836	0.348	-0.065	0.091	0.029	0.050	0.551	0.029	-0.023	0.555
Negative emotions towards life -> RIs intentions	0.306*	0.194	0.691	0.168	0.239*	0.629	0.209**	-0.294	0.094	-0.153	0.197	0.093

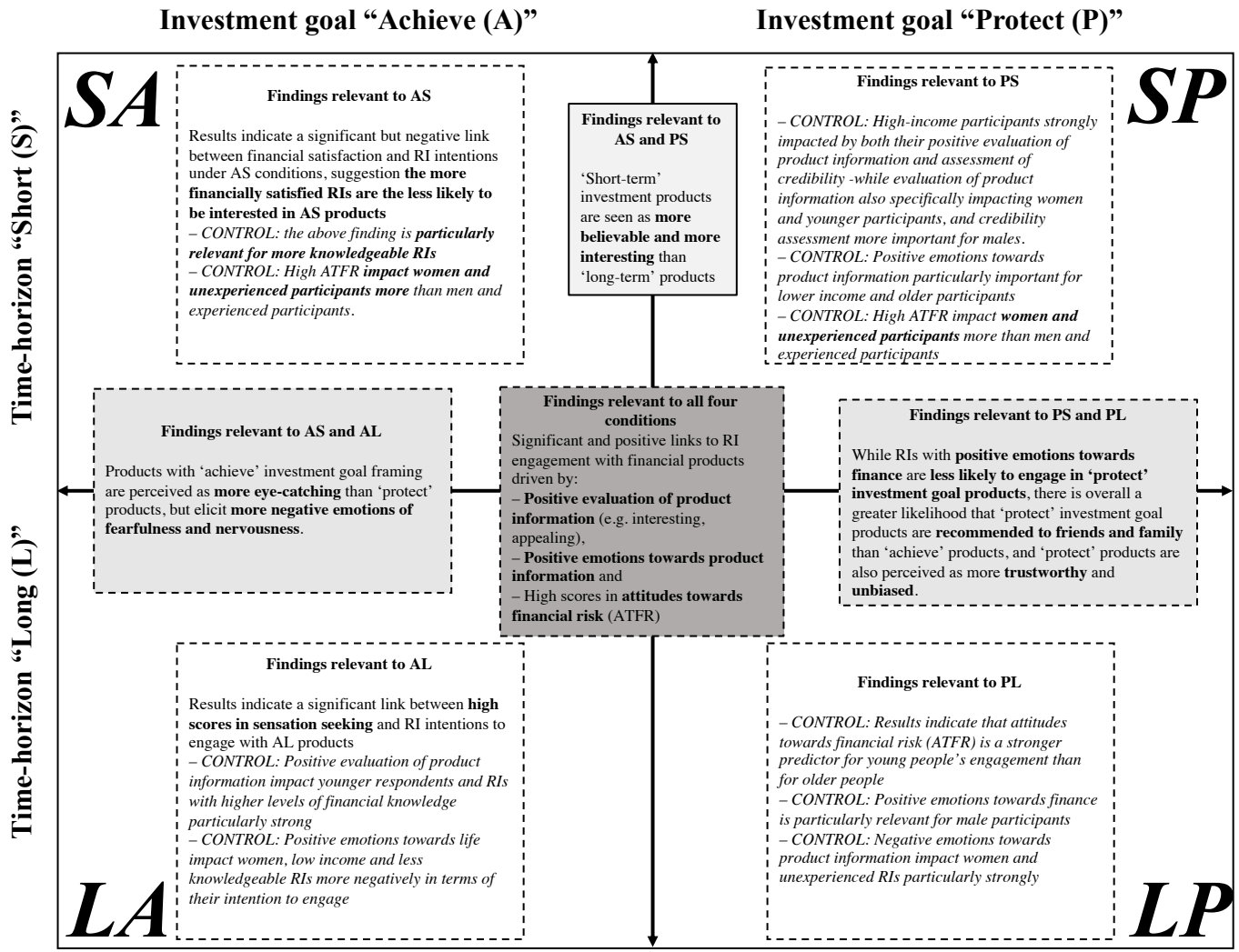
	RI experience			Financial knowledge		
	yes	*no*	*p-Value*	*high*	*low*	*p-Value*
Evaluation of product information -> RIs intentions	0.256**	0.087	0.865	0.101	0.118	0.545
Credibility of product information -> RIs intentions	0.123	0.025	0.739	0.070	0.095	0.546
Positive emotions towards product information -> RIs intentions	0.478***	0.486***	0.475	0.453***	0.445***	0.483
Negative emotions towards product information -> RIs intentions	0.031	-0.299**	0.974	0.077	-0.153**	0.073
Attitude towards financial risk -> RIs intentions	0.198**	0.313***	0.197	0.304	0.263***	0.305
Financial Satisfaction -> RIs intentions	0.055	-0.007	0.699	0.058	0.004	0.335
Positive emotions towards finance -> RIs intentions	-0.205	-0.283**	0.659	-0.380**	-0.118	0.896
Negative emotions towards finance -> RIs intentions	0.033	-0.002	0.575	0.028	-0.072	0.281
Self-esteem -> RIs intentions	-0.058	0.155	0.150	0.021	0.007	0.482
Sensation seeking -> RIs intentions	0.016	-0.083	0.776	0.058	-0.008	0.304
Positive emotions towards life -> RIs intentions	0.013	0.040	0.432	-0.033	0.017	0.598
Negative emotions towards life -> RIs intentions	0.152	0.277*	0.288	0.330	0.236*	0.380

Table 13. Short time-horizon and Protect frames: Control variables analysis

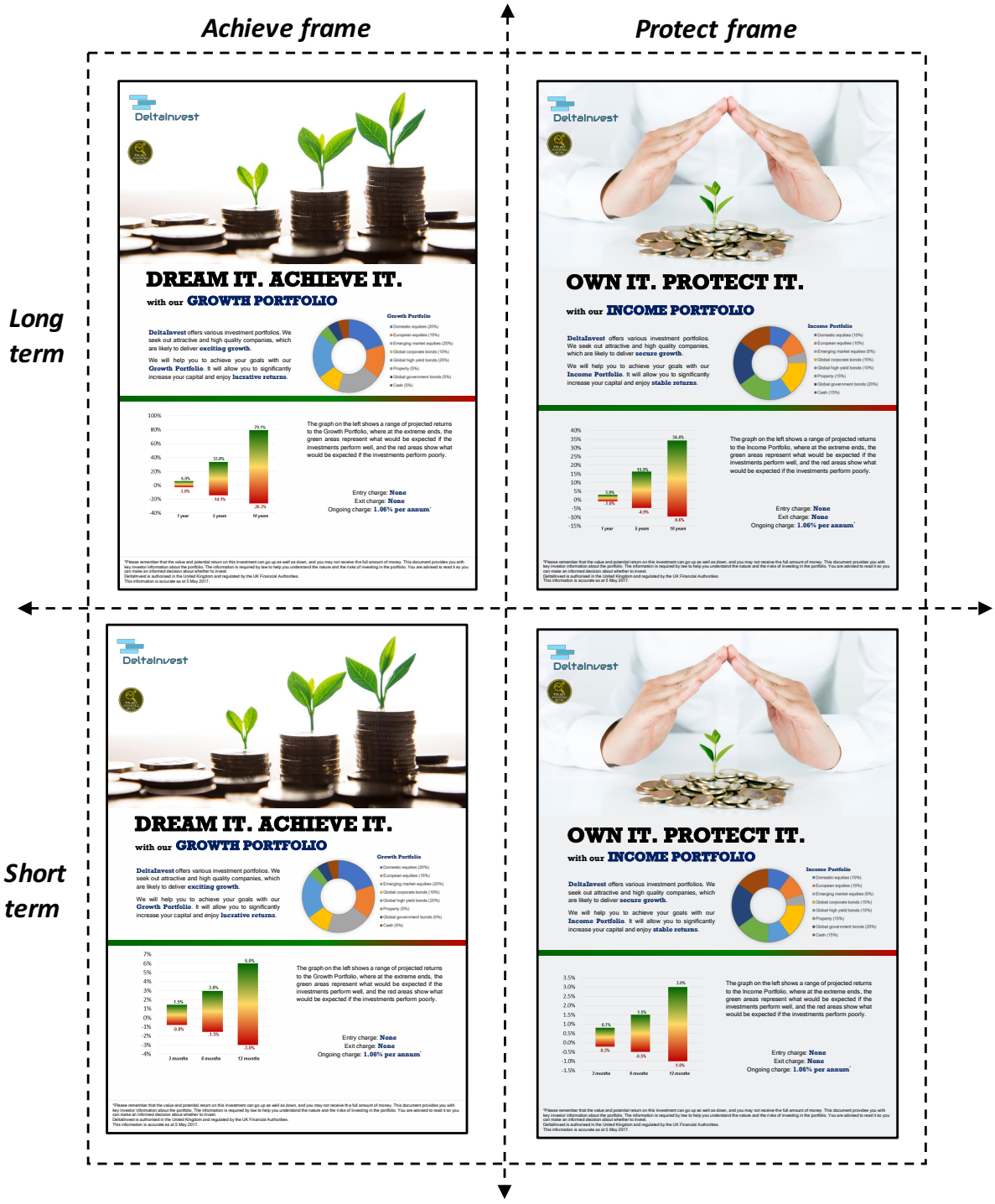
Path relationships	Gender			Age			Income			Own a house		
	Male	*Female*	*p-Value*	*18-39y.o*	*40+ y.o*	*p-Value*	*<£50k*	*>£50k*	*p-Value*	*yes*	*no*	*p-Value*
Evaluation of product information -> RIs intentions	0.334***	0.533***	0.083	0.866***	0.344***	0.007	0.101	0.380***	0.945	0.412***	0.461**	0.411
Credibility of product information -> RIs intentions	0.210**	0.004	0.920	0.023	0.151*	0.774	0.053	0.285**	0.914	0.147*	0.002	0.775
Positive emotions towards product information -> RIs intentions	0.380***	0.212**	0.860	-0.211	0.302***	0.975	0.525***	0.170	0.026	0.264***	0.244	0.542
Negative emotions towards product information -> RIs intentions	-0.087	0.075	0.119	0.140	-0.020	0.138	-0.161*	0.074	0.909	0.057	-0.029	0.704
Attitude towards financial risk -> RIs intentions	0.111	0.417***	0.009	0.201	0.255***	0.517	0.323***	0.244*	0.322	0.258***	0.370**	0.270
Financial Satisfaction -> RIs intentions	-0.062	0.105	0.104	0.254**	0.015	0.055	0.008	-0.052	0.321	-0.035	0.070	0.233
Positive emotions towards finance -> RIs intentions	-0.220*	-0.236*	0.524	0.171	-0.159*	0.125	-0.174	-0.118	0.622	-0.242**	-0.380**	0.745
Negative emotions towards finance -> RIs intentions	-0.106	-0.037	0.334	0.045	-0.010	0.365	-0.063	0.122	0.848	-0.072	-0.175	0.689
Self-esteem -> RIs intentions	0.066	-0.045	0.743	0.116	-0.034	0.257	0.012	0.132	0.734	0.054	-0.281	0.889
Sensation seeking -> RIs intentions	0.061	0.120	0.303	-0.130	0.136*	0.953	-0.029	0.010	0.602	0.100	0.018	0.659
Positive emotions towards life -> RIs intentions	-0.036	0.075	0.223	-0.232	0.009	0.867	0.029	-0.044	0.361	0.023	0.235	0.146
Negative emotions towards life -> RIs intentions	0.247*	0.042	0.878	0.248	0.051	0.215	0.209**	0.202	0.507	0.106	0.047	0.633

	RI experience			Financial knowledge		
	yes	*no*	*p-Value*	*high*	*low*	*p-Value*
Evaluation of product information -> RIs intentions	0.379***	0.437***	0.334	0.429***	0.418***	0.469
Credibility of product information -> RIs intentions	0.128	0.145	0.447	0.117	0.151	0.582
Positive emotions towards product information -> RIs intentions	0.313***	0.184*	0.811	0.261*	0.199*	0.366
Negative emotions towards product information -> RIs intentions	0.034	0.097	0.316	-0.001	0.017	0.546
Attitude towards financial risk -> RIs intentions	0.210**	0.494***	0.026	0.191*	0.304***	0.786
Financial Satisfaction -> RIs intentions	-0.077	0.038	0.160	-0.059	0.058	0.814
Positive emotions towards finance -> RIs intentions	-0.222**	-0.411***	0.868	-0.232*	-0.170	0.637
Negative emotions towards finance -> RIs intentions	0.084	-0.054	0.808	-0.106	-0.027	0.701
Self-esteem -> RIs intentions	0.104	-0.134	0.925	0.017	-0.017	0.430
Sensation seeking -> RIs intentions	0.129*	0.152	0.350	0.087	0.099	0.542
Positive emotions towards life -> RIs intentions	0.037	0.098	0.321	0.129	-0.047	0.125
Negative emotions towards life -> RIs intentions	0.163*	-0.005	0.859	0.203	0.028	0.163

Figure 4. Summary of research finings



Appendix 1. Experimental stimuli



Appendix 2. Demographics across manipulation groups

Manipulation subgroups	N=	Gender		Age		Income		RIs experience		Financial knowledge		House ownership	
		Female	*Male*	*18-39*	*40+*	*<£50k*	*>£50k*	*Yes*	*No*	*high*	*low*	*Yes*	*No*
Long horizon + Achieve frame	202	96	106	49	153	134	68	125	77	93	109	156	46
Short horizon + Achieve frame	200	101	99	47	153	133	67	118	82	76	124	169	31
Long horizon + Protect frame	191	105	86	48	143	118	73	105	86	72	119	146	45
Short horizon + Protect frame	194	88	106	50	144	130	64	107	87	90	104	147	47