

To invest or not to invest? The roles of product information, attitudes towards finance and life variables in retail investor propensity to engage with financial products

Article

Accepted Version

Hillenbrand, C. ORCID: <https://orcid.org/0000-0002-2929-5098>, Saraeva, A. ORCID: <https://orcid.org/0000-0003-2223-4310>, Money, K. and Brooks, C. ORCID: <https://orcid.org/0000-0002-2668-1153> (2020) To invest or not to invest? The roles of product information, attitudes towards finance and life variables in retail investor propensity to engage with financial products. *British Journal of Management*, 31 (4). pp. 688-708. ISSN 1467-8551 doi: <https://doi.org/10.1111/1467-8551.12348> Available at <https://centaur.reading.ac.uk/81755/>

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To link to this article DOI: <http://dx.doi.org/10.1111/1467-8551.12348>

Publisher: Wiley

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TO INVEST OR NOT TO INVEST?

The roles of product information, attitudes towards finance and life variables in retail investor propensity to engage with financial products

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ABSTRACT

Little is known in the current literature about the factors affecting retail investor (RI) propensity to engage with financial products other than their attitude towards financial risk (ATFR). This study explores the role of a number of variables, thematically grouped into domain-specific (product information and attitudes towards finance) and general impact factors (life variables). Data from 970 UK-based RIs, collected in 2017 across a variant of products, suggest that when analysed thematically, variables related to product information emerge as the most important group of influence factors. While the relevance of ATFR is also vindicated in the findings of this study, the results bring a dose of life-context to situations of financial decision-making by illustrating that information about the product as well as life variables matter significantly, in particular negative emotions and sensation seeking – thereby highlighting a duty of care towards potentially vulnerable people. The study discusses implications arising from the findings in relation to research, practice and policy.

Key words: Retail investors, attitude towards risk, product information, emotions

BACKGROUND

Financial decision-making by retail investors¹ (RIs) in the UK is said to have become more important recently. For example, pensioners in the UK have options since 2014 to self-invest or spend in entirety their pensions. Yet the financial environment has also become ever more complex with an increasing array of potential investments to choose from (Bluethgen *et al.*, 2008a, b; Hunt, Stewart and Zaliauskas, 2015). Financial advisors and institutions in the UK typically invite RIs to fill in a risk profiling questionnaire when inquiring about products. While this common practice is considered useful (Glenister 2014a, b; Simon 2016), far less is known to date about the relevance of other factors when RIs decide whether or not to engage with financial products.² This is surprising given the significant role that choices concerning financial products can exert on citizens' lives, and has led to calls by the UK Financial Conduct Authority (FCA) to investigate the impact of other factors on RI behaviour such as product information and life variables³ (FCA, 2017).

Addressing such calls, this study aims to advance the current literature in two areas. First it builds on earlier scholarly work to specify and empirically test domain-specific impact factors relating to the investment context of RI decision-making as well as more general life-related impact factors (see for example, Grable, Britt and Webb, 2008; Weber, Blais and Betz, 2002). Second it includes cognitive and emotional aspects of these factors, as research in other contexts has highlighted the importance of both of these elements for human decision-making. However, studies combining them in the context of behavioural finance are scarce (Grable, 2017; Hoffmann and Ketteler, 2015; Kahneman and Tversky, 2013; Lerner *et al.* 2015; Lucey and Dowling, 2005; Weber, Blais and Betz, 2002).

Indeed, behavioural finance has gained a rapidly increasing prominence in recent years following the global financial crisis and related criticisms of existing paradigms based on

unrealistic assumptions of rational investors. Recent research has highlighted the important role that emotions play in financial decision-making and that frameworks that explain behaviour must incorporate emotional and motivational effects (e.g., Loewenstein *et al.*, 2001; Newell *et al.*, 2007; Staddon, 2017).

We address this lacuna and explore the impact of both cognitive and emotional variables in the same study. We group variables thematically into two types of domain-specific impact factors: product information (including cognitive evaluations and judgements of credibility as well as positive and negative emotions towards product information) and attitudes towards finance/investment (including positive and negative emotions towards finance, attitudes towards financial risk and financial satisfaction). We also include more general life variables (including positive and negative emotions towards life, self-esteem and sensation-seeking), alongside a number of demographic variables such as income, net-worth, home-ownership, financial expertise and knowledge, gender and age.

Data from 970 UK-based RIs, collected in the summer of 2017 across a variant of products, suggest a vindication of ATFR measures as important predictors of RI intentions. Even when placed alongside other financial variables, the ATFR measure utilised emerges as the most important financially-based indicator.

Beyond ATFR, however, all four variables related to product information appear as significant impact factors. When analysed thematically, product information emerges as the most important group of indicators above and beyond attitudes towards finance/investment and life variables. While the other variables investigated in this study including ATFR may depend on unique personality characteristics and circumstances, product information contains a set of variables that can be influenced by service providers and regulated by industry bodies – and as such can provide an important tool for policy makers and practitioners to guide RIs responsibly.

Perhaps most interestingly, however, negative emotions towards life and sensation-seeking are also found to impact upon RI decision-making. What is striking is that negative rather than positive emotions, as well as a predisposition for sensation-seeking – i.e., a tendency to search for intense sensations and a readiness to take extensive risks – be they physical, legal or financial, in the pursuit of such sensations – drive RIs to engage more readily with financial products. This finding highlights a duty of care among product providers and financial advisors towards potentially vulnerable people in relation to financial products and the communication thereof.

Overall, our findings support the usefulness of differentiating between variables relating to domain-specific and general impact factors, collaborate the importance of including both cognitive and emotional elements, and extend previous work by specifying and testing a number of such variables empirically. Methodologically, our approach outlines how predictor variables can be treated independently or can be systematically grouped into a hierarchical component model to analyse groups of impact factors thematically, and as such provide alternative avenues for future research. Furthermore, our findings lead to a number of managerial and policy implications, strongly linked to contemporary concerns around ethical banking, ongoing attempts by regulators to guide the investment industry responsibly and the work of many aiming to contribute to the sustainable financial lives of citizens (Cheah *et al.*, 2011).

HYPOTHESES DEVELOPMENT AND CONCEPTUAL MODEL

Our hypotheses development builds on calls to research ATFR alongside other factors when aiming to understand RI intentions, most importantly calls to specify domain-specific and general impact factors and to include both cognitive and emotional elements (see for example FCA, 2017; Grable, 2000; Grable and Roszkowski, 2008; Grable, Britt, and Webb, 2008;

Holler *et al.*, 2008; Lerner and Keltner 2000; Lerner *et al.*, 2015; Perry and Morris 2005; Zhou and Pham 2004).

Building on early work (see Irwin and Millstein 1986), Grable and Joo (2004) were among the first to argue that predisposing factors influencing investment behaviour can usefully be grouped into two sets: a person-related factor (referred to as a ‘biopsychosocial’ factor in their research) and a context factor (referred to as an ‘environmental’ factor in their research). Grable, Britt, and Webb (2008, p.6) then emphasise in particular the importance of the former group of factors which they believe “may hold the key to unlocking the triggers to financial risk-taking”. Other scholars also stress the importance of personal characteristics and circumstances linked to individual propensities to take risks to explain why some individuals are more willing to do so than others (Adams and Jiang, 2017; Fagley and Miller, 1997; Weber and Milliman, 1997). Weber, Blais and Betz (2002) build on these advances and suggest that risk-taking behaviour may be driven by two groups of influences – general factors (i.e., linked to people’s circumstances) and domain-specific factors (i.e., related to the risk-domain such as investment), both of which may include cognitive and emotional elements. While there is therefore a line of support for the conceptual separation of domain-specific and general impact factors, there is a lacuna of empirical work specifying and researching specific variables belonging to these two categories. The sections that follow first review the literature about relevant impact variables, before explicitly discussing the importance of emotional elements alongside cognitive elements and proposing a conceptual framework.

Domain-specific impact factors

In this study, we specify two domain-specific impact factors: product information and attitudes towards finance/investment. The latter factor builds and extends the use of ATFR as the primary indicator of RI behaviour, while with the former we follow increasing interest in

understanding the role of information about financial products on RI intentions (FCA, 2017), with pioneering academic work by scholars such as Kahneman and Tversky (1979, 2013) illustrating that the framing of information and cognitive as well as emotional understanding thereof may significantly impact investment behaviour.

Product Information: The literature suggests that positive cognitive evaluation (such as finding it appealing or informative) of product information (e.g., a leaflet or ad) will positively influence intentions to engage with that product (Chaiken, 1980; Goldsmith, Lafferty and Newell, 2000; Kozup, Creyer and Burton, 2003; Lu, Chang and Chang, 2014; Petty, Cacioppo and Schumann, 1983). This effect has been confirmed across ads for familiar and unfamiliar products (Cox and Locander, 1987; Levin and Levin, 2010; Schuitema and Groot, 2015) as well as across different types of products (Hwang, Yoon and Park, 2011; Mehta and Purvis, 1997, 2006). Following MacKenzie and Lutz (1989, p. 49) we define product evaluation as “a disposition to respond in a favourable or unfavourable manner to particular product information during a particular exposure occasion”. It seems reasonable to assume that positive evaluation of a financial product information will positively impact RI intention; however, the presence and extent of such an effect has to the best of our knowledge not been researched in the context of RIs, leading to hypothesis 1a.

Further to such evaluations, the credibility of product information, reflecting “the extent to which people believe the information” (Roberts, 2010, p. 45) is included as a relevant attribute of product information. The literature suggests a number of elements that are included in credibility assessments such as bias, believability and power to convince (Cotte, Coulter and Moore, 2005; Kim, Ratneshwar and Thorson, 2017; MacKenzie and Lutz, 1989). In terms of evaluating online message credibility, scholars such as Metzger *et al.* (2003) and Lowery (2004) include characteristics such as structure, intensity and evidence. Despite little

verification from RI contexts, again it seems reasonable to assume that credibility judgements will also contribute to RI propensity to engage with financial products, leading to hypothesis 1b.

H1a: Positive evaluation of product information is positively associated with RI intention to engage with that product.

H1b: Credibility of product information is positively associated with RI intention to engage with that product.

Attitude towards finance/investment: As previously signalled, attitude towards financial risk (ATFR) is widely understood as a useful tool in the context of RI decision-making and is conceptually based on risk tolerance measures (e.g., MacCrimmon and Wehrung, 1984; Sung and Hanna, 1996; Weber, Blais and Betz, 2002; Yao, Hanna and Lindamood, 2004). Grable (2000, p. 625) defines financial risk tolerance as “the maximum amount of uncertainty that someone is willing to accept when making a financial decision” and proposes that risk tolerance affects almost every aspect of economic and social life. While the stark reliance on ATFR measures by the financial industry has recently been debated (Grable and Roszkowski, 2008; Slovic *et al.*, 2004), it is commonly assumed that more risk-tolerant individuals are more likely to engage in a wide range of financial products than people with low risk tolerance scores (Grable, 2000; Grable and Joo, 2004; Grable, Britt, and Webb, 2008; Pålsson, 1996) – see hypothesis 2a.

We include financial satisfaction as a further indicator of attitude towards finance/investment, based on empirical work by authors such as Grable and Roszkowski (2008) as well as Grable and Joo (2004) who call for further testing before clarity concerning its impact on RI can be reached. Financial satisfaction is defined as “a subjective evaluation of the degree to which one’s financial resources are adequate versus inadequate, or satisfactory versus unsatisfactory”

(Hira and Mugenda, 1998, p. 76). Financial satisfaction has received attention in studies related to individual well-being as well as in studies on financial risk taking (Grable, Britt, and Webb, 2008; Netemeyer *et al.*, 2017; Porter and Garman, 1993; Robb and Woodyard, 2011; Sahi, 2017), based on which the authors argue that financial satisfaction will lead RIs to engage more readily with financial products, see hypothesis 2b.

H2a: A highly tolerant ATFR score is positively associated with RI intention to engage with financial products.

H2b: Financial satisfaction is positively associated with RI intention to engage with financial products.

General impact factor

The general impact factor included in this study is labelled ‘life variables’ to signal that the variables chosen relate to personality influences and personal circumstances of RIs. This builds on, and further tests, the pioneering work of Grable *et al.* (2008) and also responds to calls by bodies such as the FCA to better understand what factors unrelated to the financial context may impact RIs most strongly. We focus on two such variables that emerge from the current literature as very important in this context, namely self-esteem and sensation-seeking, while acknowledging that future work could usefully include a wider range of life variables.

Life variables: Self-esteem is suggested as a life variable that can play an important role in financial situations (Farrell, Fry and Risse, 2016; Grable and Joo, 2004; Krueger and Dickson, 1994; Tang and Baker, 2016). Following Grable, Britt, and Webb (2008, p. 8), self-esteem is defined as “a subjective evaluation based on feedback received from others concerning behaviour, appearance, and other personal traits”. Overall, self-esteem is found to be positively related to risk perceptions (see Arch, 1993; Grable and Joo, 2004; Judge *et al.*, 1999; Montford

and Goldsmith, 2016). However, Krueger and Dickson (1994) argue that the effects of self-esteem significantly depend on whether individuals view a situation as an opportunity or a threat (having a positive and negative relationship with self-esteem respectively). As financial products are typically portrayed as opportunities rather than threats, we propose that high self-esteem will lead RIs to engage with financial products more readily – see hypothesis 3a.

A further life-variable that is particularly relevant to the context of this study is sensation seeking (Mishra and Novakowski, 2016; Wong and Carducci, 1991, 2016), defined as “the need for varied, novel, and complex sensation and experiences and the willingness to take physical and social risks for the sake of such experiences” (Zuckerman, 1979, p. 10). While there is ample evidence for a link between sensation-seeking and risk-taking, driven by a need for arousal and stimulation (Grable and Joo, 2004; Wong and Carducci, 1991), studies are typically situated in gambling and game of chance scenarios (Wong and Carducci, 1991; Lauriola *et al.*, 2014). To our knowledge, studies linking sensation-seeking with RI are missing. However, one may expect that sensation seekers are more likely to take risks in financial matters and as such may be more likely to engage with investment products generally, see hypothesis 3b.

H3a: Self-esteem is positively associated with RI intention to engage with financial products.

H3b: Sensation seeking is positively associated with RI intention to engage with financial products.

The importance of emotions

Within the behavioural finance literature, there is already evidence that people often deviate from rational models of decision-making, particularly in situations of ambiguity such as investment scenarios (Epstein, 1994; Kahneman and Tversky, 2013; Slovic *et al.*, 2004;

Schunk and Betsch 2006; Wang, 2006). Importantly, the impact of emotions has been identified as one possible explanation for this well-established effect (Chou, Lee, and Ho, 2007; Fehr *et al.*, 2007; Lerner *et al.*, 2015; Williams 2004; Yuen and Lee, 2003). For example, Wright and Bower (1992) suggest that happy and optimistic individuals are more likely to engage in risky events than sad people. Interestingly, Sizer (2000) proposes that positive emotional states are associated with wider information search, and as a consequence people are less likely to concentrate on the details of a risky event. Being of a nervous disposition may lead to the selection of lower risk investments and withdrawal from the markets when faced with a downturn (Smith and Ellsworth, 1985). Relatedly, it has been shown that fear prevents people from taking risks while anger encourages it (Ellsworth and Scherer, 2003; Gambetti and Giusberti, 2012; Habib *et al.*, 2015; Kuppens *et al.*, 2003). According to Loomes and Sugden (1982) and Michenaud and Solnik (2008), regret, and in particular the anticipation of future regret, can also have a profound impact on financial decision-making, leading to sub-optimal outcomes and to investors refusing to invest in stocks despite their superior risk-adjusted performance (Barberis, Huang and Thaler, 2006).

The impact of emotions can also potentially explain other apparently anomalous results in investing behaviour. For example, older people are often less financially risk tolerant than the young (Brooks *et al.*, 2018), and this may be related to a decline in cognitive abilities leading emotional states to have an enhanced role in financial choices (Rypma *et al.*, 2001). A diminished emotional robustness leads older people to be more likely to take fright and sell risky assets at the worst point in the financial market cycle (Browning and Finke, 2015; Friesen and Sapp, 2007). Similarly, women are less likely to make risky investments than men (Brooks *et al.*, 2017) and there is a voluminous literature suggesting that the former worry more (e.g., McCann, Stewin and Short, 1991; Ricciardi, 2008), are more fearful of negative outcomes

(Fujita, Diener and Sandvik, 1991), and are more likely to have an internal locus of control – blaming themselves when things go wrong (Craske, 2003).

As the examples above demonstrate, scholars seem to focus on risk tolerance and its link with general life emotions (such as happy, sad, fearful), whereas little is known about how these findings may relate to RI intention to engage with financial products and how emotions specifically felt in the context of finance/investment and/or specifically towards financial product information complement emotions towards life more generally. Furthermore, while there is merit in investigating the role of specific emotions, such as anger, fear or happiness, as often achieved in the studies above, emotions can also usefully be understood as “the felt tendency toward anything intuitively appraised as good (beneficial), or away from anything intuitively appraised as bad (harmful)” (Arnold, 1960, p. 182 – see also Nguyen and Noussair, 2014; Schulreich, Gerhardt and Heekeren, 2016; Wang *et al.*, 2014). In fact, scholars such as Izard (1977; 2013) and Watson and Tellegen (1985) suggest that emotions may fall into two broad categories: positive and negative, and that much can be learned by investigating and comparing the impact of positive and negative emotions across situations (Ashkanasy, Humphrey and Huy, 2017; Cooper *et al.*, 1995; Fredrickson, 1998; Griffiths, 2008; Henle and Gross, 2014). As a means to research positive and negative emotions across a number of contexts, we draw on Watson, Clark and Tellegen (1988) (later Watson and Clark 1994; Watson *et al.*, 1999), who suggest positive and negative affect as two dominant, independent dimensions of individual moods and offer the Positive and Negative Affect Scale (PANAS) as means of measurement.

Taking account of this widely utilised notion of emotions as broadly positive or negative, we acknowledge the suggested importance of positive/negative emotions as impacting human decision-making across contexts and in relation to specific as well as general life situations

(Lerner *et al.*, 2015). We thus include the role of both positive and negative emotions in our hypotheses development, but separately, in relation to all three themes in this study – i.e., product information (see H1c, H1d), attitude to finance (see H2c, H2d) and life (see H3c, H3d):

H1c: Positive emotions towards product information are positively associated with RI intention to engage with financial products.

H1d: Negative emotions towards product information are negatively associated with RI intention to engage with financial products.

H2c: Positive emotions towards finance are positively associated with RI intention to engage with financial products.

H2d: Negative emotions towards finance are negatively associated with RI intention to engage with financial products.

H3c: Positive emotions towards life are positively associated with RI intention to engage with financial products.

H3d: Negative emotions towards life are negatively associated with RI intention to engage with financial products.

CONCEPTUAL FRAMEWORK

We present a conceptual framework that incorporates the relationships proposed in H1a-d, H2a-d and H3a-d, before discussing how the framework can be analysed in two related ways, given the early stage of theory in this arena and the need for more exploratory-type research: by examining the role and impact of each individual variable (i.e. to investigate separately the

impact of emotional and cognitive elements), as well as by looking at the joint impact of variables grouped into the three themes analysed in a hierarchical component model (in order to look at the broader impact of domain-specific and general factors at their summary level). See figure 1 below for a graphical summary of the conceptual relationships proposed in our research hypotheses.

[INSERT FIGURE 1 ABOUT HERE]

Table 1 illustrates that for the hierarchical component model, all individual variables are considered first order constructs, while their themes are considered second-order constructs.

[INSERT TABLE 1 HERE]

Scholars suggest that the use of higher-order constructs (HOCs) can provide a robust way to increase theoretical parsimony and reduce model complexity (Edwards, 2001; Law, Wong and Mobley, 1998; MacKenzie, Podsakoff and Jarvis, 2005) but they require conceptual as well as methodological/empirical justification (Hair *et al.*, 2016, 2018). While a detailed methodological/empirical justification is provided below, a brief discussion of our conceptual positioning follows here.

As previously outlined, scholars hint at the existence of HOCs in relation to RI intention, but do not empirically test such claims. However, Sivaramakrishnan, Srivastava and Rastogi, (2017) operationalise a HOC ‘attitude toward investment behaviour’, including three lower-order constructs (LOCs): risk avoidance; hassle factor, and the perception of regulators. In the area of emotions. Tronvoll (2011) expands the notion of a higher-order emotional construct by Watson and Clark (1994) and models negative emotions towards life as a HOC consisting of five first-order emotions. Hence the existing evidence on the use of HOCs in the related literature indicates the usefulness of such a conceptual approach and the use of HOCs in

management and business studies is increasingly popular for conceptual coherence and structure (Doll, Xia and Torkzadeh, 1994; Edwards, 2001; Hair *et al.*, 2012; Jarvis, MacKenzie and Podsakoff, 2003; Kuppelwieser and Sarstedt, 2014; Wetzels, Odekerken-Schröder and van Oppen, 2009).

METHODOLOGY

Study context, procedure and sampling

The context of this study is retail investors (RIs) and their propensity to engage with financial products. UK RIs were recruited in June 2017 to take part in an online survey that lasted 10 minutes. The survey was hosted on Qualtrics online platform, and they recruited participants in line with their standard remuneration practices according to a defined set of sampling criteria that was *a priori* decided by the researchers. The sampling frame was based on a random sampling procedure of UK residents and involved a number of quotas to ensure an appropriate split between gender, age, income and RI investment experience. Participants were informed that they would be asked a range of questions, that they would be exposed to a leaflet about a new financial product and that they were encouraged to carefully study the leaflet as they would be asked about it later (an example leaflet can be found in Appendix 1). To avoid any bias towards existing financial firms, advisors or products, all information was created specifically for this study.

The content and design of the leaflet was based on extensive research on how investment firms advertise their products. Typically, a leaflet contains a single page with detailed specifications of a financial product. In consulting with experts in the field of investment, we developed a leaflet which advertised an investment portfolio with a range of actual market specifications (i.e., selection of investments, time horizon, terms and conditions). The product information was varied systematically to ensure that the data collected was relevant irrespective of the

specific product, and that any findings and conclusions held across different types of product information. The variation of information related to the length of time for investment in a product, the level of return, and whether the product could be described as an income or growth portfolio. The financial service company offering the products was fictitious (named 'DeltaInvest'), and this was revealed to participants at the end of the survey. The study was subjected to standard University ethics screening and given the green light to proceed.

Measures

Measures of attitudes towards finance/investment and life variables were mostly placed in the first part of the survey to ensure that answers were not informed by the specific information respondents later received about the product. Measures of product information were situated after the product leaflet had been shown as these questions required an actual product to assess. In addition, a set of questions relating to RIs' propensity to engage with the financial product that they had seen were asked post-product leaflet. These items act as dependent measures in our study.⁴ To ensure that participants were able to understand all questions and to fill them in confidently, all measures were pre-tested and piloted with RIs. A list of items that was included in the analysis after reliability and validity procedures were performed can be found in Appendix 5.

All independent constructs are measured using scale items derived from previously published and peer-reviewed research, with the exception of the AFTR, which is not currently published but is an industry-relevant measure widely in use in the UK, developed by Distribution Technology. It includes questions such as: "*Compared to the average person, I take lower financial risks*"; "*Taking financial risks is important to me*". Measures of positive and negative emotions towards variables in all three themes were adapted from the PANAS scale developed by Watson, Clark and Tellegen (1988). Measures of sensation seeking (Arnett, 1994), self-

esteem (Rosenberg, 1965), and financial satisfaction measures were adapted from Grable and Joo (2004). Evaluations and judgments of the credibility of the leaflet are based on Baker and Churchill (1977) and Flanagin and Metzger (2000). The dependent variable (intention to engage) was developed specifically for the purposes of this study, based on how similar intention measures are operationalised in the literature (see, for example, Boulding *et al.*, 1993; Helm, 2007; Sen, Bhattacharya and Korschun, 2006), including whether individuals would be “(...) *interested to invest in the portfolio offered*” and would “(...) *recommend this portfolio to friends/family*”. Both independent and dependent constructs utilised five-point Likert-type scales.

Common method bias

Two statistical procedures suggest the likelihood of common method bias to be low. Harman’s single factor test shows that, in an un-rotated factor analysis, 19.4% of variance is explained by one factor (Harman, 1976). The Lindell and Whitney (2001) test was applied using one manipulation check item as a marker, showing no significant correlation between the marker item and model constructs.

First- and second-order constructs

Methodologically, it is advisable to reduce the number of established path relationships in structural equation modelling (Hair *et al.*, 2016). Our conceptual framework involves twelve LOCs, indicating high model complexity (Hair *et al.*, 2018). Thus, HOCs can allow the development of a more parsimonious model. In addition to establishing the relationships between LOCs and HOCs, it is critical to specify the type of hierarchical component model (Jarvis, MacKenzie and Podsakoff, 2003; Hair *et al.*, 2018). Following Hair *et al.* (2018), a Type II Reflective-Formative model appears to fit the purpose of the present study particularly well.⁵

Data preparation and analysis

The data were entered into SPSS Statistics 24 in order to assess missing values⁶ and outliers as well as distributional properties. This initial stage of data preparation led to the exclusion of 180 straight-liners⁷ and 15 outliers, which led to a final sample of 970 – see Table 2 for sample demographics.⁸ A small proportion of data was found to violate the assumption of normality. Due to this and the high complexity of the model proposed, we adopted a partial least squares structural equation modelling (PLS-SEM) approach for the initial assessment of the conceptual model with all 12 indicator variables (Chin, 2010; Hair *et al.*, 2012),⁹ in line with other recent business and management literature (Ahammad *et al.*, 2017; Braun *et al.*, 2018; Nair *et al.*, 2018; West *et al.*, 2016) and finance-related studies (Hegner-Kakar, Richter and Ringle, 2018; Moneva and Ortas, 2010; Nitzl, 2016; Pew Tan, Plowman and Hancock, 2006; Ramli, Latan and Nartea, 2018).

[INSERT TABLE 2 ABOUT HERE]

Data analysis is structured in three stages.

Stage 1: A two-stage analysis of the full conceptual model was performed (Hair *et al.*, 2016). The first step involves an assessment of reliability and validity of the measurement model.¹⁰ The second step involves an assessment of the structural model, including estimation of the paths within the model (sign, magnitude and significance, obtained through bootstrapping procedure); the coefficient of determination R^2 ; the effect size f^2 of predictor variables; cross-validated redundancy Q^2 (predictive relevance) and the effect size q^2 (using a blindfolding procedure) (Henseler and Sarstedt, 2013; Hair *et al.*, 2014). To test for differences in control variables, we used Multi Group Analysis (MGA) within PLS-SEM (Sarstedt, Henseler and Ringle, 2011).

Stage 2: The analysis controls for the impact of demographic variables such as income, net-worth, home-ownership, financial expertise and knowledge, gender and age on the full conceptual model.

Stage 3: Finally, we use the repeated indicator approach by Lohmöller (1989), which is most suitable for the analysis of the Type II hierarchical component model. To assess the model, we then use a factor weighting scheme with Mode B (Becker, Klein and Wetzels, 2012; Hair *et al.*, 2018), and evaluate collinearity statistics using the VIF scores of the higher-order constructs (Hair *et al.*, 2016, 2018).

RESULTS

Stage 1: Assessment of the conceptual model with 12 predictor variables

Composite reliability scores reveal satisfactory levels for all constructs from 0.750 to 0.956 (Hair *et al.*, 2016). AVE scores are all above the suggested threshold of 0.5 and discriminant validity is deemed satisfactory as the Fornell-Larcker criterion confirms that the square root of the AVE for each endogenous variable is higher than the variance shared by any other construct (see Appendix 2). Likewise, an assessment of cross-loadings demonstrates that loadings for indicators associated with a specific construct are higher than for any other construct within the model.

Bootstrapping of the full structural model reveals seven of twelve hypothesized paths to be significant at the level of $p < 0.01$, with varying magnitude: All paths related to product information are significant. In particular, positive and negative emotions towards product information predict RIs' intentions with $\beta = 0.378$ ($p < 0.001$), and $\beta = -0.079$ ($p < 0.003$) respectively. Product information credibility has a positive impact on intentions ($\beta = 0.089$, $p < 0.04$) as well as RI evaluation of product information ($\beta = 0.252$, $p < 0.001$). Furthermore,

ATFR is positively related to RIs intentions with a path of $\beta=0.234$, $p<0.001$. In terms of life variables, two paths are found to significantly predict RI intentions: negative emotions towards life ($\beta=0.097$, $p<0.02$) and sensation seeking ($\beta=0.083$, $p<0.01$).

The coefficient of determination for the dependent variable is moderate to large ($R^2=0.564$; $R^2_{adj}=0.559$), effect sizes f^2 for predictor variables of endogenous constructs range between small to moderate (0.002 to 0.116) (Chin, 1998). Blindfolding is applied to evaluate Stone-Geisser's Q^2 value (Geisser, 1974; Stone, 1974). The results confirm the predictive relevance of all exogenous constructs on their related endogenous construct ($Q^2=0.373$). Table 3 summarises the results in relation to all hypotheses.

[INSERT TABLE 3 ABOUT HERE]

Stage 2: Control variables

The analysis of control variables considers demographic information such as gender, age, income, net-worth and home-ownership first (see Appendix 3), before examining finance-related control variables measuring financial expertise and knowledge (see Appendix 4). Only differences relating to significant paths within the full conceptual model are summarised for parsimony in Table 4 below.

[INSERT TABLE 4 ABOUT HERE]

Stage 3: Hierarchical component modelling

The measurement model for LOCs was found to be generally consistent with the above analysis of the assessment of individual variables in stage 1 (see analysis of hypotheses 1a-d, 2a-d, 3a-d) and is thus not reported again. The assessment of the HOC measurement model demonstrates VIF estimates not exceeding the suggested threshold of 5 (see Hair *et al.*, 2018).

Table 5 presents the structural model evaluation, utilizing standard bootstrapping to evaluate significance of LOCs weights in relation to HOCs as well as path relationships between HOCs and the outcome construct. The assessment shows that eleven weights between LOCs and HOCs as well as all path relationships between HOCs and the outcome variable are significant, with varying magnitude: for product information (HOC), the LOCs positive emotions and evaluation of product information have the largest weights of 0.414 and 0.384, $p < 0.001$. Within attitudes towards finance/investment (HOC), the LOC's positive emotions towards finance and ATFR are found to have the largest relevance of 0.420 and 0.417, $p < 0.001$. Within life variables, all LOCs have significant relevance, while self-esteem and positive emotions towards life have the largest individual weights of 0.383 and 0.372, $p < 0.001$, respectively.

[INSERT TABLE 5 ABOUT HERE]

In summary, the three HOCs are found to all significantly predict RI intentions. In particular, HOC product information holds the strongest single impact on RI engagement with the financial product ($\beta = 0.616$, $p < 0.001$), followed by attitudes towards finance/investment ($\beta = 0.219$, $p < 0.001$), and life variables ($\beta = -0.081$, $p < 0.05$). The coefficient of determination of the dependent variable is moderate to large ($R^2 = 0.519$; $R^2_{adj} = 0.517$), the effect sizes f^2 of HOCs on the endogenous construct ranges between small (for life variables and attitudes towards finance/investment), and large (product information): 0.01, 0.06, and 0.575 respectively.

DISCUSSION

Product information emerges from the findings of this study as exerting a strong impact on RIs. As product information can be controlled by investment firms, its role and impact need to be considered when communicating information about products with varying degrees of

complexity, risk and attraction. Interestingly, the ATFR measure emerges as the only financially-based indicator with a significant result in Table 3 and is also found in the subsequent thematic analysis to have among the largest relevance in forming its respective higher-order construct. As such, the importance of risk attitude, which is discussed extensively in the literature and widely measured in practice, is confirmed in the empirical results of this study¹¹ (Grable, Britt, and Webb, 2008). Our findings suggest that beyond product information and ATFR, negative emotions towards life and sensation-seeking also impact RI propensity to engage with financial products. Both of these life variables highlight a duty of care towards potentially vulnerable people in relation to financial products and communication thereof, i.e. in cases in which investors with strong negative emotions or a high tendency for sensation seeking may engage with products and levels of risks that are not beneficial or appropriate given their financial circumstances (Delgado-García *et al.*, 2010; Kooij-de Bode *et al.* 2010).

Insights from control variables

The analysis of control variables reveals a very consistent pattern: most differences between control groups related to age, gender, income, net-worth, home-ownership and financial expertise/knowledge emerge between RI positive and negative emotions towards the variables investigated: positive emotions in general seem to impact more on the intentions of male participants, high-income participants, high net-worth individuals and on participants with more knowledge or more experience. At the same time, the impact of negative emotions is stronger felt by female participants, non-home-owners and less knowledgeable or experienced individuals. This is particularly the case for emotions towards finance/investment and emotions towards product information but is also found in variables related to general emotions towards life.¹²

An interesting pattern of results emerges in relation to age: while older participants react strongly and negatively to negative emotions towards product information (i.e., if older participants do not like the product information they more significantly dis-engage), they also do not engage more readily as a function of positive emotions towards life generally (contrary to the findings reported above). Younger participants, on the other hand, react particularly strongly and positively as a function of sensation seeking and of low self-esteem, but positive emotions towards finance/investment do not make them engage more readily (contrary to the findings reported above). This suggests that product information needs to be tailored very specifically to an older age group and that younger participants feel the impact of self-confidence, or lack thereof, particularly strongly (resonant of Grable, Britt, and Webb, 2008).

Finally, the impact of ATFR on RI intention to engage differs significantly between investors with more and less investment experience: high ATFR scores impact less experienced investors more than experienced investors, perhaps suggesting that risk tolerance may not be a function of experience but of personality – a suggestion further supported by the finding that the impact of ATFR does not vary with financial knowledge as a control variable.

Conceptual implications

Our findings support calls for a conceptual *separation* (of domain-specific and general impact factors), and a conceptual *inclusion* (of emotional and cognitive elements) and suggest a range of useful variables to include in future work. In particular with regard to domain-specific factors, our findings suggest that the way in which financial information is portrayed matters to RIs, and as such characteristics of communications need conceptual attention in economic contexts (Ahlers *et al.*, 2017; Ewe *et al.*, 2018; Hauff *et al.*, 2016; Holler *et al.*, 2008; Lerner *et al.*, 2015; Meyerowitz & Chaiken, 1987).

Furthermore, our findings indicate there may be merit in studying a wider set of personality and life variables. While the role and importance of ATFR measures is vindicated in the findings of this study, it is unclear to what extent risk measures may correlate with life variables and personality factors such as sensation seeking and negative life emotions. Hence, encouraging individuals with high risk tolerance scores to take out more risky products, as may currently be seen as good practice (Corter and Chen, 2006; Croy, Gerrans and Speelman, 2010; Grable, Britt, and Webb, 2008; Seetharaman *et al.*, 2017), may be less appropriate than commonly thought and in need of research for confounding effects.

A further conceptual implication relates to the possibility of understanding predictor variables either as isolated factors and/or to conceptualise them as grouped into themes. While our choice of themes was strongly guided by suggestions in the literature (Farrell, Fry and Risse, 2016; Grable *et al.* 2008; Grable and Joo, 2004; Irwin and Millstein, 1986; Wang, 2006; Weber, Blais and Betz, 2002), we by no means suggest that we have identified a comprehensive list. However, we are confident that the idea of grouping variables into themes conceptually as well as methodologically may be useful: in particular, the HCM analysis applied in this study suggests that themes of influence factors may present a feasible and useful way forward – not only to understand the impact of individual elements within factors, but also the overriding importance of themes relative to each other.

Managerial implications

Managerially, our finding suggests the consideration of a range of variables in addition to ATFR for managers to handle relationships with clients meaningfully. Resonant of the marketing and advertisement literatures (Brown, Homer and Inman, 1998; Derbaix, 1995; Morris *et al.*, 2002), as well as the literature on customer (dis)engagement (Dubé and Menon, 2000; Liljander and Strandvik, 1997; Phillips and Baumgartner, 2002; Voorhees, Brady and

Horowitz, 2006), the extent to which information is understood, liked and believed is found here to predict engagement.

Currently, some financial service providers are looking to launch online investment advice services (so-called ‘robo-advisors’) (J.P.Morgan Investment Trust Team, 2017; Wright *et al.*, 2016), offering a cheaper wealth management service to those with lower savings (Simon, 2016). However, the results of this study suggest that there are complexities and person-specific variables that would usefully be considered when advising RIs individually, contrary to technology-enabled algorithms, requiring a more in-depth and personalized understanding of circumstances.

Furthermore, for financial advisors and institutions that want to operate responsibly, the results of this study offer suggestions on how to be mindful of the implications arising from the demographics of clients and their associated preferences and biases, as well as mindful of general life and personality factors. In particular, the findings suggest putting managerial measures in place to protect customers with negative life emotions (perhaps due to significant life events) and people who seem overly excited about risk (i.e., sensation seekers).

Policy implications

Policy makers, as well as service providers, have a duty of care towards RIs. Following the 2008 recession, the UK government, alongside those of other countries, has sought ways to regulate the financial services industry more and to protect consumer and societal interest going forward. UK-based figures, however, suggest that money advice services are having to deal with increasing numbers of personal financial crises, amid annual rises in consumer credit and escalating debt.¹³

Indeed, work conducted by the FCA reveals that about 50% of the UK population is potentially vulnerable due to low financial resilience, low financial capability or adverse life events. 24% of UK adults have little or no confidence in managing their money and 46% of UK adults report low knowledge about financial matters (FCA, 2017). Policy makers could use the findings of this study to advise financial service providers to routinely assess personal circumstances as well as the impact of product information on vulnerable consumer groups alongside ATFR assessments, with a view to tailoring products more appropriately to individual contexts and life variables.

From a policy perspective, it may also be noteworthy that the results of our study suggest combining insights from what the firm/product has to offer (summarised in product information) with characteristics of individual investors (such as attitude towards finance and life variables) (Corter and Chen, 2006; Croy, Gerrans and Speelman, 2011). Rather than working with financial service providers and RIs separately, policy makers could encourage both groups to share concerns and work on suitable solutions and the communication thereof jointly. Interestingly, only four in ten UK adults have confidence in the financial services industry, and at least 1.3 million UK adults claim to have experienced mis-selling from an advisor at some point (FCA, 2017). These figures highlight the need for trust-building exercises and better communication between both parties, a process that could be facilitated and encouraged by policy makers along the lines of the variables explored in this study.

LIMITATIONS AND FUTURE RESEARCH

A limitation of this study relates to the cross-sectional nature of data collection. As indicated earlier, data for this research were collected in the midst of Brexit negotiations and uncertainty, and it is not clear from the findings of this study how this ambiguity may impact RI intentions.

This could be usefully addressed through a longitudinal study that incorporates variables related to political and other externalities and their impact on RIs' behaviour (J.P.Morgan Investment Trust Team, 2017). Furthermore, it would be useful to compare our findings with the actual investment behaviour of RIs following their exposure of financial products, as well as the long-term satisfaction and implications derived from actual investment decisions.

Due to the exploratory nature of this study, we were not able to hypothesize and test a range of potential moderating effects. For example, some RIs may be willing to consider risky investment products for primarily emotional reasons (for example, the excitement of 'playing' the market and somehow beating other investors), while others may be considering financial products purely for cognitive reasons (such as a belief that they will generate higher returns in the long run and therefore the risk is worth them taking). There could also be a tension between the two – for example, objectively an RI can see the attraction of a risky investment but their sense of worry or fear – whether well founded or not – may prevent them from being willing to further consider it. Such interactions should be further investigated conceptually and empirically.

Finally, we limit our investigation to situations in which RIs encounter a new financial product from a provider whom they have not dealt with before. We do not, in this study, explore existing relationships that RIs may hold with financial advisors or institutions or the relevance of brand names on choice behaviour.

CONCLUSIONS

In summary, our study finds that variables related to product information as well as life variables influence RI intentions alongside the more established ATFR. Hence, the range of

domain-specific and general impact factors that apply and interact in the context of RI decision-making warrants further investigation. This may inform future research and practice on how financial products are usefully marketed and how to engage with RIs cognitively and emotionally when selling financial products.

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Footnotes

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

² We employ the term ‘engage with financial products’ as a summary expression for a respondent’s interest in following up on the information contained in the leaflet that they were shown. We use a slightly broad term to cover all possible levels of interest including a potential willingness to invest in the portfolio, a desire to obtain more information before making a decision, an interest in speaking to a financial adviser about the product, and so on.

³ We employ the term ‘life variables’ as a summary expression for general impact factors relating to personality factors and/or life circumstances of RIs. This builds on previous literature by authors such as Grable and Joo (2004), Grable *et al.* (2008), Adams and Jian (2017) who use varying terms to express person-related factors.

⁴ General demographics (such as age, gender, income, financial knowledge and experience, house ownership) were mostly situated at the end of the survey, unless they were needed at the beginning for screening purposes. Grable and Joo’s (2004) measure of net-worth was adapted with a question ‘*Suppose you are to sell all of your major possessions (including your home), turn all of your investments and other assets into cash, and pay all of your debts. Would you be in debt, break even, or have something left over?*’ Financial knowledge was measured by adapting FINRA’s (2012) real knowledge quiz task. The quiz was then re-coded as a rank order measure on a 5-point Likert scale, where a score of 1 indicates poor knowledge and a score of 5 indicates excellent knowledge in the area of finance.

⁵ A type II model is able to accommodate LOCs, measured reflectively and HOCs, measured formatively. LOCs in our study do not share a common cause but form a thematic concept that can be seen to mediate the relationship between LOCs and the outcome variable (Barroso and Picón, 2012; Becker, Klein and Wetzels, 2012). Removing one LOC will not lead to differences in theoretical underpinning of the HOC (Nitti and Ciavolino, 2014).

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

⁷ A straight-liner is typically defined as a response pattern ‘when a respondent marks the same response for a high proportion of the questions’ (Hair *et al.*, 2016: p. 72).

⁸ In addition, the sample screening included ethnicity as a critical demographic variable. However, the analysis revealed that 88.5% of the sample fell into the category “White British”, while other ethnic groups comprised 11.5% of responses. Such an unequal spread of data across ethnic groups does not allow testing for specific sub-group differences.

⁹ PLS-SEM is considered appropriate in dealing with non-parametric estimations within complex structural models (Hair *et al.*, 2012; Henseler and Chin, 2010; Sarstedt *et al.*, 2014). For this study PLS-SEM was operationalised within the software SmartPLS 3.2.7 (Hair *et al.*, 2016, 2018).

¹⁰ Reliability assessment includes the analysis of composite reliability, indicator reliability, convergent validity (i.e., average variance extracted) and discriminant validity (i.e., the Fornell-Larcker criterion and cross loadings). A small number of outer loadings of the independent constructs (relating to evaluations and credibility of the leaflet, self-esteem and sensation seeking) were found to be very slightly above the suggested thresholds for indicator reliability. After conducting the test of relevance for outer loadings (through AVE comparisons), 11 items in total were removed from the model.

¹¹ It remains unclear from the results in this study, however, whether the relationship between ATFR and readiness to engage with financial products will indeed serve the individual client. The findings are merely indicative of a strong association while the directionality of this relationship (i.e., are investors who engage more in financial products more risk tolerant as a consequence or is risk tolerance leading to higher engagement), or indeed the foundation for risk tolerance (i.e., representing more capacity for risk or merely more appetite for risk), and hence the severity of potential consequences should investments fail to deliver the desired results, remain unclear in the context of RI ATFR.

¹² RIs with more experience and knowledge and also with more assets at their disposal are likely to feel positive about the product and are also more likely to engage if they feel more positive towards finance/investment generally, whereas the impact of negative emotions towards these variables is more heavily expressed by participants who may not have the same financial options and less experience and knowledge as well.

¹³ For example, the Bank of England Money and Credit Statistics team are looking for ways to improve the capability and understanding of individual decision-making processes (Bank of England, 2018).

Figure 1. Conceptual Framework

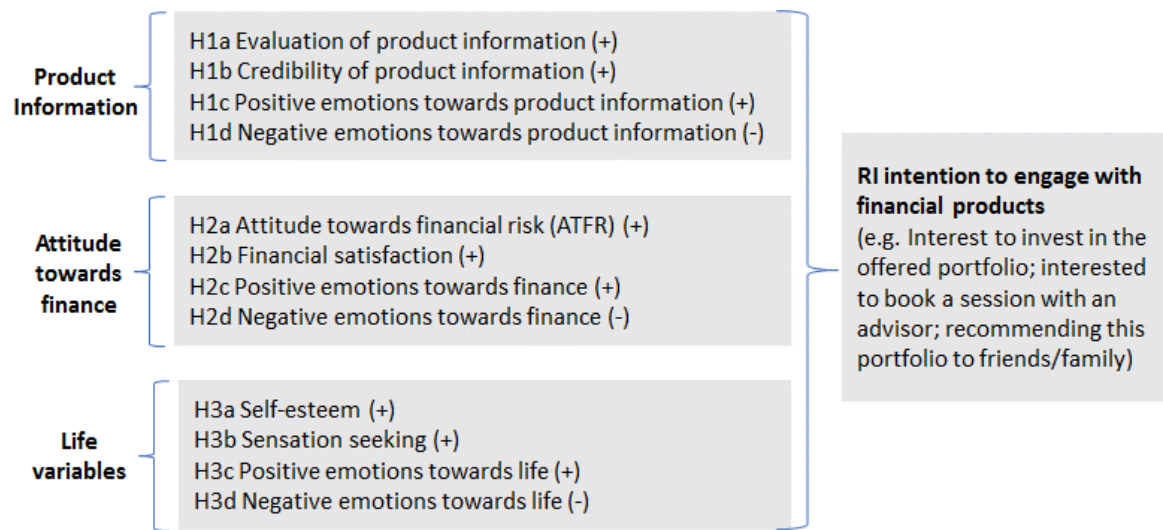


Table 1. First- and second-order constructs

Second-order constructs	Product Information	Attitude towards finance	Life variables
First order constructs			
Evaluation of product information	x		
Credibility of product information	x		
Positive emotions towards product information	x		
Negative emotions towards product information	x		
Attitude towards financial risk (ATFR)		x	
Financial satisfaction		x	
Positive emotions towards finance		x	
Negative emotions towards finance		x	
Self-esteem			x
Sensation seeking			x
Positive emotions towards life			x
Negative emotions towards life			x

Table 2: Sample demographics

Demographics		N	Percent
Gender	<i>Female</i>	486	50.1%
	<i>Male</i>	484	49.9%
Age	<i>Age (18-39 y.o.)</i>	242	24.9%
	<i>Age (40+ y.o.)</i>	728	75.1%
Income	<i>Income (<£50k)</i>	633	65.3%
	<i>Income (>£50k)</i>	337	34.7%
Experience	<i>Experienced</i>	559	57.6%
	<i>Not experienced</i>	411	42.4%
Own property	<i>Own property</i>	762	78.6%
	<i>Not own property</i>	208	21.4%
Net-worth	<i>High net-worth</i>	748	77.1%
	<i>Low net-worth</i>	222	22.9%
Knowledge	<i>High knowledge</i>	410	42.3%
	<i>Low knowledge</i>	560	57.7%
TOTAL SAMPLE		970	

Table 3. Test of hypotheses

Model paths	Path coefficients	t-value	p-value	Hypothesis	Support
Evaluation of product information → RIs intentions	0.252	7.46	0	Hypothesis 1a	supported
Credibility of product information → RIs intentions	0.089	2.866	0.004	Hypothesis 1b	supported
Positive emotions towards product information → RIs intentions	0.378	9.816	0	Hypothesis 1c	supported
Negative emotions towards product information → RIs intentions	-0.079	3.005	0.003	Hypothesis 1d	supported
Attitude towards financial risk → RIs intentions	0.234	8.609	0	Hypothesis 2a	supported
Financial Satisfaction → RIs intentions	0.005	0.185	0.854	Hypothesis 2a	<i>not supported</i>
Positive emotions towards finance → RIs intentions	-0.055	1.323	0.186	Hypothesis 2c	<i>not supported</i>
Negative emotions towards finance → RIs intentions	0.003	0.096	0.923	Hypothesis 2d	<i>not supported</i>
Self-esteem → RIs intentions	0.006	0.171	0.864	Hypothesis 3a	<i>not supported</i>
Sensation seeking → RIs intentions	0.083	3.227	0.001	Hypothesis 3b	supported
Positive emotions towards life → RIs intentions	-0.048	1.341	0.18	Hypothesis 3c	<i>not supported</i>
Negative emotions towards life → RIs intentions	0.097	3.074	0.002	Hypothesis 3d	supported

Table 4. Results for control variables

Control Variable	Significant results
Gender	The path between positive emotions towards product information and intentions (H1c) is significantly stronger for male participants ($\beta_{\text{male}}=0.444$, $\beta_{\text{female}}=0.288$, $p<0.01$), while the path from negative emotions towards product information and intention (H1d) is significantly stronger for female participants ($\beta_{\text{female}}=-0.153$, $\beta_{\text{male}}=-0.005$, $p<0.01$). Also, the path from positive emotions towards finance to intentions (H2c) is significantly stronger for male participants ($\beta_{\text{male}}=-0.111$, $\beta_{\text{female}}=0.008$, $p<0.1$)
Age	<i>To control for age, we categorize participants into age group (1) between 18 and 39 years and group (2) of 40 and above.</i> The path between negative emotions towards product information and intentions (H1c) is stronger for older participants ($\beta_{\text{Age2}}=-0.104$; $\beta_{\text{Age1}}=0.014$, $p<0.05$). The path between negative emotions towards finance and intentions (H2d) is significantly stronger for younger participants ($\beta_{\text{Age1}}=-0.224$; $\beta_{\text{Age2}}=-0.026$, $p<0.05$). The path between positive emotions towards life and intentions (H3c) is significantly stronger for older participants ($\beta_{\text{Age2}}=-0.073$; $\beta_{\text{Age1}}=0.085$, $p<0.05$), while the link between self-esteem and intentions (H3a) is significantly stronger for younger participants ($\beta_{\text{Age1}}=0.127$; $\beta_{\text{Age2}}=0.043$, $p<0.05$).
Income	<i>To control for income, we categorize participants into income group (1) with an income up to £50k and income group (2) with an income above £50k.</i> The path between credibility of product information (H1b) and intentions is stronger for income group (2) ($\beta_{<£50k}=0.153$, $\beta_{>£50k}=0.059$, $p<0.1$), as is the path between negative emotions towards finance and intentions (H2d) and intentions ($\beta_{>£50k}=0.126$; $\beta_{<£50k}=-0.043$, $p<0.01$).
Net-worth	<i>To control for net-worth, the sample is split into low (group 1) and high (group 2) net-worth sub-samples using a central split.</i> Positive emotions towards product information (H1c) are found to have a stronger impact on intentions for group 2 net-worth individuals ($\beta_{\text{high}}=0.408$, $\beta_{\text{low}}=0.23$, $p<0.05$), as are positive emotions towards finance (H2c) ($\beta_{\text{high}}=-0.102$, $\beta_{\text{low}}=0.097$, $p<0.05$).
Home ownership	In terms of home ownership, the results suggest that negative emotions towards finance (H2d) impact intentions more amongst non-home-owners ($\beta_{\text{not own}}=-0.14$, $\beta_{\text{own}}=0.042$ $p<0.01$).
Investment experience	<i>To control for investment experience, the sample is split into experienced (group 1) and un-experienced investors (group 2).</i> Positive emotions towards product information (H1c) are found to have a stronger effect on intentions for the experienced group ($\beta_{\text{experienced}}=0.413$, $\beta_{\text{unexperienced}}=0.294$, $p<0.05$), and on credibility of product information and intentions (H1b) ($\beta_{\text{experienced}}=0.155$, $\beta_{\text{unexperienced}}=0.055$, $p<0.1$). Negative emotions towards product information are found to have a stronger impact on intentions for unexperienced group 2 ($\beta_{\text{unexperienced}}=-0.114$, $\beta_{\text{experienced}}=-0.026$, $p<0.05$). Similarly, the path between ATR and intentions is significantly stronger for the unexperienced group 2 ($\beta_{\text{unexperienced}}=0.33$, $\beta_{\text{experienced}}=0.183$, $p<0.01$).
Financial Knowledge	<i>To control for the impact of financial knowledge, the sample is split into knowledge group (1) who demonstrated low levels of financial knowledge and group (2) with high knowledge participants.</i> The path between positive emotions towards product information and intentions (H1c) is significantly stronger for knowledge group 2 ($\beta_{\text{high}}=0.447$, $\beta_{\text{low}}=0.308$, $p<0.05$), while the impact of negative emotions towards product information (H1d) is stronger for group 1 ($\beta_{\text{low}}=-0.127$, $\beta_{\text{high}}=0.010$, $p<0.05$). Finally, positive emotions towards finance (H2c) impact more strongly on group 2 intentions ($\beta_{\text{high}}=-0.180$, $\beta_{\text{low}}=0.021$, $p<0.01$).

Table 5. Hierarchical component modelling

First- and second-order constructs		Attitudes towards Finance	Product Information	Life Variables	RIs Intentions $R^2=0.519$
First-order constructs	<i>Evaluation of product information</i>		0.384***		
	<i>Credibility of product information</i>		0.331***		
	<i>Positive emotions towards product information</i>		0.414***		
	<i>Negative emotions towards product information</i>		-0.155n.s.		
	<i>Attitude towards financial risk</i>	0.417***			
	<i>Financial Satisfaction</i>	0.201***			
	<i>Positive emotions towards finance</i>	0.420***			
	<i>Negative emotions towards finance</i>	-0.297***			
	<i>Self-esteem</i>			0.383***	
	<i>Sensation seeking</i>			0.341***	
	<i>Positive emotions towards life</i>			0.372***	
	<i>Negative emotions towards life</i>			-0.214***	
Second-order constructs	Attitudes towards Finance	VIF=1.675			0.219***
	Product Information		VIF=1.37		0.616***
	Life Variables			VIF=1.401	-0.081***

*** indicates significance at the 0.01 level.

Appendix 1. Example of the leaflet

Appendix 2. Measurement model assessment

Constructs	Mean	S.D.	Cronbach's α	Composite α Reliability	AVE	Evaluation of product information	Credibility of product information	Positive emotions towards product information	Negative emotions towards product information	Attitude towards financial risk	Financial Satisfaction	Positive emotions towards finance	Negative emotions towards finance	Self- esteem	Sensation seeking	Positive emotions towards life	Negative emotions towards life	Intent
<i>Evaluation of product information</i>	3.300	0.845	0.914	0.93	0.626	0.791												
<i>Credibility of product information</i>	3.339	0.740	0.824	0.877	0.589	0.672	0.767											
<i>Positive emotions towards product information</i>	2.314	1.054	0.938	0.956	0.843	0.585	0.498	0.918										
<i>Negative emotions towards product information</i>	1.891	0.908	0.72	0.873	0.776	-0.197	-0.277	0.008	0.881									
<i>Attitude towards financial risk</i>	2.673	0.805	0.904	0.918	0.556	0.276	0.277	0.369	-0.348	0.745								
<i>Financial Satisfaction</i>	3.489	1.032	1	1	1	0.128	0.157	0.108	-0.127	0.196	1							
<i>Positive emotions towards finance</i>	2.737	1.024	0.91	0.937	0.787	0.375	0.357	0.684	-0.15	0.6	0.214	0.887						
<i>Negative emotions towards finance</i>	2.528	1.087	0.797	0.906	0.828	-0.164	-0.156	-0.091	0.521	-0.494	-0.324	-0.302	0.91					
<i>Self-esteem</i>	3.778	0.709	0.862	0.895	0.588	0.201	0.223	0.227	-0.166	0.246	0.385	0.347	-0.328	0.767				
<i>Sensation seeking</i>	3.137	0.905	0.507	0.75	0.501	0.193	0.245	0.331	-0.181	0.393	0.117	0.406	-0.223	0.379	0.708			
<i>Positive emotions towards life</i>	3.340	0.743	0.912	0.926	0.559	0.253	0.287	0.42	-0.117	0.265	0.316	0.537	-0.21	0.644	0.411	0.748		
<i>Negative emotions towards life</i>	1.672	0.644	0.892	0.904	0.511	-0.037	-0.048	0.13	0.243	-0.033	-0.27	0.052	0.36	-0.415	-0.081	-0.119	0.715	
<i>Intent</i>	2.860	0.981	0.922	0.939	0.72	0.593	0.517	0.639	-0.209	0.48	0.106	0.497	-0.204	0.175	0.337	0.269	0.1	0.848

Appendix 3. Demographic control variables

Path Relationships	GENDER			AGE			INCOME			NET-WORTH			OWN A HOUSE		
	Female	Male	p-value	Age 1 (18-39)	Age 2 (40+)	p-value	<£50k	>£50k	p-value	High	Low	p-value	Own	Not own	p-value
Evaluation of product information -> RIs intentions	0.246***	0.252***	0.529	0.296***	0.24***	0.234	0.241***	0.315***	0.841	0.233***	0.306***	0.838	0.316***	0.23***	0.156
Credibility of product information -> RIs intentions	0.056	0.118**	0.828	0.041	0.103***	0.789	0.059	0.153***	0.919	0.103***	0.024	0.108	0.085	0.099***	0.566
Positive emotions towards product information -> RIs intentions	0.288***	0.444***	0.981	0.434***	0.355***	0.193	0.372***	0.321***	0.268	0.408***	0.23***	0.016	0.287***	0.394***	0.894
Negative emotions towards product information -> RIs intentions	-0.153***	0.005	0.999	0.014	-0.104***	0.042	-0.08**	-0.09*	0.367	-0.065**	-0.112**	0.22	-0.02	-0.093***	0.132
Attitude towards financial risk -> RIs intentions	0.268***	0.219***	0.172	0.247***	0.254***	0.542	0.258***	0.205***	0.173	0.227***	0.259***	0.703	0.251***	0.239***	0.432
Financial Satisfaction -> RIs intentions	0.037	-0.039	0.072	-0.003	-0.003	0.496	0.024	-0.033	0.13	-0.007	0.024	0.702	0.021	0.013	0.454
Positive emotions towards finance -> RIs intentions	0.008	-0.111*	0.068	-0.224**	-0.026	0.97	-0.028	-0.127**	0.115	-0.102**	0.097	0.985	-0.076	-0.066	0.541
Negative emotions towards finance -> RIs intentions	0.061	-0.071	0.018	0.016	0.017	0.507	-0.043	0.126**	0.99	-0.014	0.024	0.738	-0.14**	0.042	0.991
Self-esteem -> RIs intentions	0.08	-0.013	0.092	-0.127*	0.043	0.975	0.017	0.02	0.526	0.029	-0.085	0.064	-0.072	0.035	0.829
Sensation seeking -> RIs intentions	0.104***	0.073*	0.28	0.169***	0.035	0.017	0.083***	0.066	0.378	0.073**	0.141***	0.881	0.136***	0.062**	0.103
Positive emotions towards life -> RIs intentions	-0.085*	-0.032	0.775	0.085	-0.073*	0.036	-0.069	-0.005	0.839	-0.06	0.005	0.786	-0.017	-0.045	0.372
Negative emotions towards life -> RIs intentions	0.124**	0.089**	0.278	-0.017	0.085	0.838	0.128***	0.041	0.133	0.12***	0.061	0.189	0.137*	0.098**	0.283

Appendix 4. Finance-related control variables

Path Relationships	EXPERIENCE			KNOWLEDGE		
	<i>Unexperienced</i>	<i>Experienced</i>	<i>p-value</i>	<i>High</i>	<i>Low</i>	<i>p-value</i>
Evaluation of product information -> RIs intentions	0.288***	0.223***	0.168	0.257***	0.228***	0.661
Credibility of product information -> RIs intentions	0.055	0.155***	0.947	0.094*	0.104***	0.443
Positive emotions towards product information -> RIs intentions	0.294***	0.413***	0.942	0.447***	0.308***	0.972
Negative emotions towards product information -> RIs intentions	-0.114***	-0.026	0.957	0.01	-0.127***	0.995
Attitude towards financial risk -> RIs intentions	0.330***	0.183***	0.003	0.229***	0.256***	0.317
Financial Satisfaction -> RIs intentions	0.015	-0.034	0.169	-0.028	0.015	0.215
Positive emotions towards finance -> RIs intentions	-0.093	-0.076	0.583	-0.180***	0.021	0.007
Negative emotions towards finance -> RIs intentions	-0.013	0.067	0.905	0.004	0.025	0.356
Self-esteem -> RIs intentions	0.033	0.008	0.345	0.01	0	0.563
Sensation seeking -> RIs intentions	0.066*	0.067**	0.507	0.082**	0.073**	0.569
Positive emotions towards life -> RIs intentions	-0.065	-0.01	0.79	0.013	-0.065	0.861
Negative emotions towards life -> RIs intentions	0.083	0.072**	0.389	0.078	0.101**	0.354

Appendix 5. Table of applied measures

Scale and Items

Watson, Clark and Tellegen (1988; 1994) PANAS – applied to all emotion scales (positive and negative)	
	<i>Interested (positive)</i>
	<i>Distressed (negative)</i>
	<i>Excited (positive)</i>
	<i>Upset (negative)</i>
	<i>Strong (positive)</i>
	<i>Guilty (negative)</i>
	<i>Scared (negative)</i>
	<i>Hostile (negative)</i>
	<i>Enthusiastic (positive)</i>
	<i>Proud (positive)</i>
	<i>Irritable (negative)</i>
	<i>Alert (positive)</i>
	<i>Ashamed (negative)</i>
	<i>Inspired (positive)</i>
	<i>Nervous (negative)</i>
	<i>Determined (positive)</i>
	<i>Attentive (positive)</i>
	<i>Jittery (negative)</i>
	<i>Active (positive)</i>
	<i>Afraid (negative)</i>
Rosenberg (1965) adapted by Grable and Joo (2004) Self-esteem	
	<i>I take a positive attitude toward myself.</i>
	<i>I feel that I'm a person of worth, at least on an equal basis with others.</i>
	<i>I feel that I have a number of good qualities.</i>
	<i>I certainly feel useless at times.</i>
	<i>I am able to do things as well as most other people.</i>
	<i>On the whole, I am satisfied with myself.</i>
Arnett (1994) adapted by Grable and Joo (2004) Sensation Seeking	
	<i>It's fun and exciting to perform or speak before a group.</i>
	<i>I would like to ride the roller coaster or other fast rides at an amusement park.</i>
	<i>I would like to travel to places that are strange and far away.</i>
Baker and Churchill (1977) Evaluation of product information	
	<i>Dull–Interesting</i>
	<i>Unappealing–Appealing</i>
	<i>Unimpressive–Impressive</i>
	<i>Unattractive–Attractive</i>
	<i>Uninformative–Informative</i>
	<i>Confusing–Clear</i>
	<i>Not eye catching–Eye catching</i>
	<i>Ordinary–Distinctive</i>
Flanagin and Metzger (2000) Credibility of product information	
	<i>Inaccurate–Accurate</i>
	<i>Not trustworthy–Trustworthy</i>
	<i>Biased–Not biased</i>
	<i>Unbelievable–Believable</i>
	<i>Incomplete–Complete</i>
Grable and Joo (2004) Financial Satisfaction	
	<i>Overall, how financially satisfied are you at this point of your life?</i>
Grable and Joo (2004)	
	<i>Suppose you are to sell all of your major possessions (including your home), turn all of your investments and other assets into cash, and pay all of your debts. Would you be in debt, break even, or have something left over?</i>

Intended behaviour

I would be interested to invest in the portfolio offered.

I would be interested to receive more information from DeltaInvest regarding the portfolio offered.

I would be interested to book a session with an advisor from DeltaInvest regarding the portfolio offered.

I would recommend this portfolio to friends/family.

I would be interested to talk to someone I trust about the portfolio.

I would like to search for more information about the company DeltaInvest and the portfolio.
