Do Perfectionism and Financial literacy Affect Individual Financial Risk Tolerance and Wealth Accumulation? An Exploratory Study Using a Web Survey

Di Wang
Student in Mphil/PhD Program in Management
Room 3051, Business School, University of Southampton, Southampton, UK
dw2n13@soton.ac.uk

Abstract

This study investigates the interrelationships among perfectionism, tolerance of financial risk, and financial literacy. Perfectionism encompasses two essential dimensions: perfectionistic strivings and perfectionistic concerns. The former (latter) dimensions are associated with positive (negative) facets of perfectionism. Financial risk tolerance is a subjective function of the financial risk that an investor is willing to accept. Financial literacy is a specialized type of consumer expertise that involves adeptly conducting one's financial affairs. We develop a partial least squares structural equation model (PLS-SEM) to test the hypothesized relationships among perfectionism, financial risk tolerance and financial literacy using data from 661 respondents randomly selected from the US general population via web survey. First, the results indicate that perfectionistic strivings – but not perfectionist concerns – have a significant and positive effect on financial risk tolerance. Second, the magnitude of strivings' effect on financial risk tolerance differs significantly between individuals living alone and those living with a partner and between individuals with religious faith and those without religious faith. Third, we reveal that perfectionistic strivings are positively correlated with both fixed and liquid assets through financial risk tolerance. Finally, financial literacy neither influences financial risk tolerance nor interacts with the relationship between perfectionistic strivings and financial risk tolerance. This study extends knowledge regarding the positive aspects of perfectionism improving individual financial wellbeing.

EFM Classification codes: 720

Keywords: Perfectionism; Striving; Evaluative Concerns; Financial Risk Tolerance; Financial Literacy

1. Introduction

Traditionally, perfectionism has been understood to lead to many psychopathologies (Frost et al., 1990). For example, Pacht (1984) believes that perfectionism is a widespread and crippling issue that is associated with many psychological and physical disorders. In the clinical psychology literature, perfectionism has also been more recently associated with the etiology and continuation of eating and anxiety disorders and depression (Shafran & Mansell, 2001). However, Hamachek (1978) earlier argued that there are two distinctive types of perfectionists and dimensions of perfectionism, normal and neurotic. Hamachek (1978) proposed that normal perfectionists seek to achieve adaptively based on their high standards, whereas neurotic perfectionists are overly concerned about mistakes and overly worried about failure – which leads to adverse outcomes. Hence, this view indicates that there are both active and passive dimensions of perfectionism. Frost et al. (1990) and then Hewitt and Flett (1991) suggested that perfectionism has multiple dimensions. Stoeber and Ottto (2006) further generalized that striving for high standards and worrying about mistakes are the two core aspects of positive and negative perfectionism, respectively.

Empirically, striving perfectionists exhibit higher academic, musical, and athletic performance (Stoeber et al. 2008) with positive affect and endurance (Bieling et al. 2003). Hence, perfectionistic striving spurs individuals to fight for what they want, to set higher standards than others and to exert their best efforts to realize goals (Murphy, 2012). By contrast, perfectionists' evaluative concerns are negatively associated with negative emotions, low self-esteem and low self-efficacy (Dunkley et al. 2003), leading to goal orientation avoidance and self-defeatism (Stoeber and Becker, 2008; Stoeber et al., 2008; Sagar and Stoeber, 2009).

Although the effects of the two dimensions of perfectionism have been extensively examined in multiple fields (academic, music, athletics, etc.), their role in individual attitudes toward risk in investment or wealth accumulation has been largely ignored. In more related studies, Brand and Altstötter-Gleich (2008) found that when encountering risk, as expressed in neuroticism, perfectionism can affect decision-making but that other Big Five personality traits do not, which implies that there is a relationship between perfectionism and risk attitude. As financial risk tolerance is the extent of financial risk an individual is willing to accept (Van de Venter et al. 2012), it makes sense to explore the potential relationship between perfectionism and financial risk tolerance as the latter is firmly and positively correlated with wealth (Finke and Huston, 2003). Moreover, financial literacy is a measure of the extent to which individuals comprehend essential financial knowledge and have acquired the capability and confidence to effectively run their personal financial affairs via correct short-run decision-making and appropriate long-term financial planning aimed at improving their economic well-being (Remund, 2010). Hence, whether financial literacy interacts with the relationship between perfectionist striving and financial risk tolerance and whether financial literacy influences financial risk tolerance merits further study.

The present paper thus studies interrelationships among perfectionism, financial risk tolerance, and financial literacy. We use partial least squares structural equation modeling (PLS-SEM) to test the relationships hypothesized to exist among them, using answers from 661 respondents, randomly selected from the US general population via web survey. Specifically, we make four findings. First, the results indicate that perfectionistic strivings have a significant and positive effect on financial risk tolerance, but there is no suggestion of any effects of perfectionist evaluative concerns on financial risk tolerance. Second, the magnitude of the effects of striving on financial risk tolerance is significantly different depending on whether an individual lives alone or with a partner or whether an individual has or does not have religious faith. Third, we find that perfectionistic strivings are positively correlated with both fixed assets and liquid assets via financial risk tolerance. Finally, financial literacy neither influences financial risk tolerance nor interacts with the relationship between perfectionist striving and financial risk tolerance. This study extends knowledge about the positive effects of perfectionism on improving individual financial wellbeing.

The remainder of this paper proceeds as follows. Section 2 reviews the relevant literature to provide a background for development of hypotheses. Section 3 describes the methodology, including sampling and data measurement, as well as model specification. We provide results and discuss them in Sections 4 and 5. We conclude the paper in section 6.

2. Literature Review

This section will introduce the definition of, relevant research regarding and conventional metrics for perfectionism, financial risk tolerance, and financial literacy. Then, we will enumerate the specific research questions and corresponding hypotheses with the conceptual models. Although each is well studied in its own right, scant research has focused on the interrelationships among them, although these may provide more sophisticated and comprehensive knowledge regarding the effects of perfectionism on financial decision-making and wealth accumulation via financial risk tolerance or via interaction with financial literacy.

2.1 Perfectionism

Perfectionism is commonly known as a set of personality traits characterized by striving for flawlessness and establishing high standards for performance followed with tendencies

toward striving to exceed the applicable criteria (Frost et al. 1990; Hewitt and Flett, 1991; Stoeber and Otto, 2006).

Traditionally, perfectionism has been linked with psychopathology and with psychodynamic theory, which emphasizes that perfectionism is a symptomatic correlation with a neurotic and disordered personality (Honey, 1951; Missildine, 1963). Hamachek (1978) distinguished two dimensions of perfectionism – normal perfectionism and neurotic perfectionism – and was the first to propose the positive form of perfectionism. Studies in the 1980s still supported the notion that perfectionism was associated with high levels of depression, eating disorders, and obsessive-compulsive disorder in both clinical and non-clinical populations (Rosen et al. 1989; Hewitt et al. 1989). Until the beginning of the 1990s, Frost et al. (1990) and Hewitt and Flett, 1991) verified that perfectionism encompassed multiple dimensions and proposed a multi-scale measurement for perfectionism. Refining all facets of the definition, Frost et al. (1993) suggested two core dimensions of perfectionism – *positive strivings* and *negative evaluation concerns*. These authors showed that the evaluative concerns dimension is correlated with negative characteristics, whereas the strivings dimension is correlated with positive characteristics, providing the first empirical evidence that there is a positive dimension for perfectionism. Then, papers that followed Frost et al. (1993) also presented evidence that positive strivings are connected with positive characteristics. For example, perfectionistic strivings are positively associated with positive affect, effort, academic achievement and performance, in addition to self-efficacy (Strumpf and Parker, 2000; Smith and Antony, 2003; Stoeber and Kersting 2007; Stoeber et al 2008).

Stoeber and Otto (2006) systematically reviewed the papers containing empirical evidence of positive strivings and negative evaluation concerns and stressed that perfectionistic strivings prevail when perfectionism is not overly concerned with mistakes. They also proposed a conceptual framework combining striving and evaluative concerns as well as groups of perfectionists (healthy perfectionists, non-healthy perfectionists and non-perfectionists), as shown in Figure 1. These authors challenged the widespread conception that perfectionism is only destructive. Perfectionism is prevalent and requires deeper understanding of its impact on individual well-being (Antony et al. 1998; Sassaroli et al. 2008).

The measurements for multi-dimensional perfectionism to date vary. The main two measurements utilized are the Frost Multidimensional Perfectionism Scale (F-MPS) proposed by Frost et al. (1990) and the Hewitt Multidimensional Perfectionism Scale (H-MPS) introduced by Hewitt and Flett (1991). The former consists of a 35-item scale with six subscales (concerns regarding mistakes, personal standards, parental expectations, parental criticism, doubts regarding actions and organization) whereas the latter consists of 45 items measuring three dimensions (self-oriented perfectionism, socially-prescribed perfectionism, and other-oriented perfectionism). Since following papers empirically showed that active striving and negative evaluation concerns are the most common central dimensions of perfectionism, Burgess et al. (2016) recently proposed a short version of the F-MPS, the F-MPS-Brief, that effectively captures these two dimensions and is thus used in this study.

2.2 Financial Risk Tolerance

Van de Venter et al. (2012) defined financial risk tolerance as the amount of financial risk an individual is willing to accept. In other words, it refers to an individual's feelings regarding financial risk. Traditionally, economists consider financial risk tolerance as an objective function of real individual financial behavior that involves measuring the risk in the assets held by an individual relative to that individual's total wealth . Hanna and Chen (1997) argue that financial risk tolerance might be a personality trait derived from genetic predisposition. Cesarini et al. (2009) confirmed this argument by providing evidence that almost 20% of the

observed variance regarding an individual's willingness to tolerate financial risk might be the result of genetic differences. Van de Venter et al. (2012) further consolidates this view by presenting financial risk tolerance as a time-invariant personality trait that is unlikely to change extensively throughout an individual's life.

There are three main approaches for measuring individual financial risk tolerance. The first is a multidimensional risk measure (the GL-RTS) with a 13-item measure that involves the constructs of investment risk, risk comfort and experience, and speculative risk (Grable and Lytton, 1999). Gable and Lytton (2003) approved this measure`s validity by comparing a summated score of its 13-item scale with asset allocation choice. The second approach is a single-item measure from the Survey of Consumer Finance (SCF) that is used in most surveys. Gilliam et al. (2010) reported that the GL-RTS and the single-item question from SCF are both valid but that the GL-RTS yields higher explanatory power. The third approach is a 25-item measure developed by an Australian company, FinaMetrica Pty Limited, and the Applied Psychology Unit of the University of New South Wales School of Psychology. Van de Venter et al. (2012) used this measure to support their findings. After balancing the explanatory power and the number of items, we choose to use the GL-RTS because long and complicated questions might lead to comprehension problems and mental fatigue for respondents (Sarstedt et al. 2009).

2.3 Financial Literacy

Financial literacy is a measure of the extent to which individuals comprehend essential financial knowledge and acquire the capabilities and confidence to effectively run their personal financial affairs via correct short-run decision-making and appropriate long-term financial planning to improve their general financial condition (Remund, 2010). The previous literature focuses on researching financial literacy's effect on economic outcomes. First, financial literacy is more likely to lead an individual to participate in the financial markets (van Rooij et al. 2011; Christelis et al., 2010), as those with higher financially literacy are more likely to commence retirement planning, which leads to wealth accumulation (Lusardi and Olivia, 2007; Lusardi and Olivia, 2008). Second, lower levels of financial literacy lead to costly mortgages. Stage and Zinman (2009) discovered that those individuals who cannot calculate interest rates correctly typically borrow more and accumulate less wealth. Third, self-reported and objective financial literacy have been shown to influence credit card behavior throughout life (Allgood and Walstad, 2013). Gerardi et al. (2013) demonstrated that mathematical ability was strongly associated with mortgage defaults. Financial literacy is a more specialized knowledge than general knowledge (education) and focuses more on informed financial decision making (Lusardi and Mitchell, 2014).

To our best knowledge, there are two types of valid and reliable measures of financial literacy. The first is constructed by three independent questions, as proposed by Lusardi and Mitchell (2011). These authors built this measure using four principles, i.e., simplicity, relevance, brevity and capacity to differentiate. Further, they believe that this measure captures three concepts well: 1) numeracy and interest rate calculations; 2) comprehending inflation; 3) understanding risk diversification (Lusardi and Mitchell, 2014). The sum score of the three questions yields an individual's financial literacy. The second is a 13-item scale proposed by Fernandes et al. (2014). These authors refined their measure from 26 items used in previous studies in a meta-analysis, and they report that this measure has high psychometric properties. The answers to the 13 questions determine a respondent's financial literacy. We use this 13-item measure, as it is believed to yield more explanatory power.

2.4 Hypothesis Development with Conceptual Models

In the remaining subsections, we review the definitions, related studies and common measures for perfectionism, financial risk tolerance, and financial literacy. In the next subsection, we propose the specific research questions and the corresponding hypotheses with the conceptual models.

2.4.1 Research Question One

Do perfectionism and financial literacy play a role in affecting individual financial risk tolerance? If so, how? We explore this matter using three hypotheses: H1, H2, and H3.

Hypothesis 1: Perfectionist striving (evaluative concerns) increases (lowers) individual financial risk tolerance.

In the literature, Stoeber et al. (2008a) proposed that the two core dimensions of perfectionism are striving (positive dimension) and evaluative concerns (negative dimension). The former involves having high standards and making extra efforts to elevate one's performance in multiple aspects. Conversely, the latter is captured with negative features. Empirically, striving is found to be consistently positively correlated with positive psychological features, such as endurance, positive affect, athletic performance, musical performance, and educational performance, expectations and hopes regarding success, etc. (Stoeber et al. 2008b; Bieling et al. 2003; Murphy, 2012). Alternatively, evaluative concerns are typically associated with negative emotions, low self-esteem, low self-efficacy, and fear of failure (Dunkley et al., 2003; Stoeber and Otto, 2006).

We expect that individuals with perfectionistic striving are more likely to take financial risk in aiming to achieve financial wealth because financial risk tolerance is correlated with a significantly larger wealth accumulations (Finke and Huston, 2003). We also expect that individuals with perfectionistic evaluative concerns may try to reduce or avoid financial risk as they have lower self-efficacy and a fear of failure.

Hypothesis 2: Financial literacy is positively associated with financial risk tolerance.

As defined above, financial literacy means that individuals have the capability and confidence to effectively conduct their personal financial affairs by making correct short-run decisions and appropriate long-term financial planning in improving their economic conditions. As a result, it is sensible that financial literacy would be associated with good strategies for handling risky assets by relying on sufficient information with the final goal of improved economic conditions (i.e., wealth accumulation). Therefore, we expect that more financially literate individuals are more likely to tolerate financial risk and to achieve higher returns and accumulate more wealth, as a result.

Hypothesis 3: Financial literacy moderates the relationship between perfectionism (striving/evaluative concern) and financial risk tolerance.

On one hand, recalling that perfectionism is a personality trait that typically compels individuals to strive for higher standards and also leads to critical self-evaluations. It has been empirically shown to be sustainable and relatively stable (Rice and Aldea, 2006). On the other hand, financial risk tolerance is also a stable trait, which is less likely to alter as time passes (Van de Venter and Michayluk, 2009). Thus, both have certain features and are relatively stable, which means that the relationship should also be relatively solid. Nevertheless, Fernandes (2014) reports that the effects of education on increasing financial literacy decay over time, which indirectly implies that financial literacy is changeable over time. In addition to its rational features (i.e., increasing the ability and confidence to make good decisions, in

both the short and long runs), we expect that financial literacy is likely to interact with the relationship between perfectionism and financial risk tolerance.

In summary, Figure 1 depicts the conceptual model for the hypotheses test.

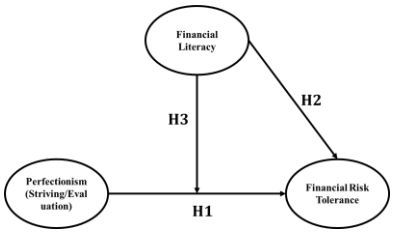

Figure 1 describes the conceptual model for Hypotheses 1, 2, and 3. The direction of the arrow shows the hypothesized causal effect.

2.4.2 Research Question Two (Multi-Group)

Are the effects of perfectionism (striving/evaluation concerns) on financial risk tolerance significantly different among different characterized groups (i.e., male vs. female, single vs. non-single, religious vs. non-religious, aging and older vs. younger and middle-aged)? We investigate four hypotheses: H4, H5, H6, and H7.

Hypothesis 4: The effects of perfectionism (striving and evaluation concerns) on financial risk tolerance are stronger for males than for females.

Hypothesis 5: The effects of perfectionism (striving and evaluation concerns) on financial risk tolerance are stronger for those who live alone than for those who live with a partner.

Hypothesis 6: The effects of perfectionism (striving and evaluation concerns) on financial risk tolerance are more powerful for the aging and older and retired than for the young and middle-aged.

*Hypothesis 7***:** The positive effects of perfectionism on financial risk tolerance (striving and evaluation concerns) are stronger for individuals with religious faith than for individuals without religious faith.

Notably, we just indicated that we expect perfectionism (striving and evaluation concerns) would impact individual financial risk tolerance across the entire sample. However, if we are going to describe or hypothesize one relationship or behavior of people, we typically must take into account individual heterogeneity in generating formal conclusions because different individuals act differently (Blundell and Stoker, 2005). In other words, will the hypothesized relationship differ for different groups? There are two main benefits that we gain from heterogeneity. First, we can consolidate our conclusions regarding one hypothesis tested. Second, we have additional information about the significant differences between different groups in one hypothesized relationship, and we can use the technique known as multi-groups analysis to treat heterogeneity in the data.

In our case, in particular, we can take into account the demographic factors that have been empirically proven to contribute to the difference in financial risk tolerance in the population, as segmentation approaches. For example, we can divide the entire sample into aging and older individuals (over 55 years old) and younger and middle-aged individuals because Donker and Van Soest (1999) report that financial risk tolerance is negatively correlated with age. We can also segment the sample by whether individuals live alone or with a partner (Grable and Joo, 2004), by male and female, and by those who profess religious faith and those who do not.

2.4.3 Research Question Three (Mediation) and Research Question Four (Moderation)

Does financial risk tolerance mediate the effects of perfectionism (striving and evaluative concerns) on fixed assets and liquid assets?

*Hypothesis 8***:** Financial risk tolerance mediates the effects of perfectionism (striving and evaluation concerns) on the value of liquid assets and fixed assets.

Does financial literacy moderate the effects of financial risk tolerance on fixed assets and liquid assets?

*Hypothesis 9***:** Financial literacy moderates the effects of financial risk tolerance on liquid assets and fixed assets.

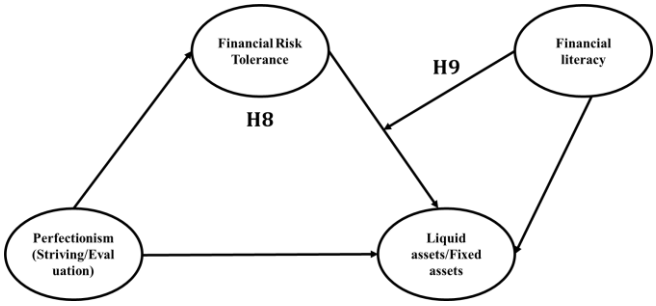

Figure 2 describes the conceptual model for Hypotheses 8 and 9. The direction of the arrows show the expected causal effects.

For H8, as we discussed previously in subsection 2.4.1, we believe that perfectionistic striving is in theory more likely to encourage individuals to aspire to financial wealth because wealth accumulation is an indicator of good performance or achievement, which yields self-satisfaction in realizing financial freedom. By contrast, we also reasoned that perfectionistic evaluative concerns are more likely to discourage individuals to accumulate financial wealth because it lower self-efficacy and increases fear of failure. Therefore, we hypothesize that financial risk tolerance is such a channel for two dimensions of perfectionism to influence individual wealth accumulation (See H8), as financial risk tolerance has been empirically found to be positively associated with accumulated wealth (Finke and Huston, 2003).

For H9, financial literacy is substantially positively associated with wealth and investment, and relying on financial literacy can impact wealth outcomes (Behrman et al. 2012). In addition, since we know that there is a positive relationship between financial risk tolerance and wealth, we expect that financial literacy interacts with (more likely, strengthens) the relationship between financial risk tolerance and wealth.

3. Methodology

In this section, we introduce sampling, data validity, and data description, in addition to statistical modeling. Moreover, we implement the quantitative study primarily because current measures of perfectionism, financial risk tolerance, and financial literacy are all quantitative. In addition, based on our research questions, we aim to investigate the potentially complex relationships among them in the general population at a single point in time (more or less) and hence cross-sectional design (also called a social survey) is appropriate (Bryman and Bell, 2015). Following data collection, we will use the data collected from the survey for statistical analysis not only to infer causality but also to develop theory (Lowry and Gaskin, 2014).

3.1 Sampling

In general, we use a web survey integrating one email invitation to a potential respondent that contains basic information about this survey, its web link, and the incentives offered to collect data. In particular, we purchased the online commercial sampling service software from

Qualtrics, an existing online environment. Qualtrics panel team supports survey construction in terms of quickly putting together complicated electronic questionnaires, distributing a survey to their solid panel group and recording the results, all of which a survey builder can download in the CSV format (Barnhoorn et al. 2016) for statistical analysis.

We designed one questionnaire that mainly consists of five parts, including demographic information (12 questions), perfectionism (8 questions), financial literacy (13 questions), financial risk tolerance (11 questions) and financial behaviors (5 items). Between July and August 2016, we officially launched our survey twice successively, once for group A, whose respondents are aged between 18 and 54 years old, and once for group B, whose respondents are over 55. For group A, we distributed 524 questionnaires and received 365 completed surveys back. The remaining 159 were marked as non-response, mainly due to four reasons,

i.e., not eligible (82), being screened out by filter attention (37), unwilling to take part in (38) and removed from excessive time duration (2). Subsequently, we further excluded 64 answers because of outliers, straight-liners or unreasonable responses (e.g., an answer unrelated to the open question). Therefore, there are 301 valid questionnaires (57.4%) for group A. In addition, no questionnaires contained any missing values, as we set 'force response' (i.e., respondents must answer all questions) in the web survey, and we compensated respondents financially. For group B, we distributed 461 questionnaires and received 378 completed responses. There were 83 questionnaires remarked as non-response, generally because of unwillingness to take part (71) and filter attention (12). Moreover, we excluded additional 18 responses due to outliers. Hence, we have 360 valid questionnaires (78.1%), which are also all without missing data because we set 'Force response' and offered respondents financial incentives to complete the questionnaire. In summary, we have 661 individual samples covering the younger, middle-aged, aging and older groups.

3.2 Data Validity

In general, there are certain advantages to collecting data by web survey but also some drawbacks (Bryman and Bell, 2015). The following will highlight the corresponding benefits, and give details regarding how drawbacks can be overcome.

On the one hand, with respect to advantages, the cost of data collection by web surveys is lower than collecting data by paper-and-pencil surveys (Couper, 2000; Llieva et al., 2002). In particular, Qualtrics utilizes multiple sample sources to best favor customer needs. As a panel accumulator, they leverage third-party panels. They warrant that all group partners apply regular monitoring and quality control checks. After working in a wide range of industries for many years, Qualtrics has established and maintains stable relationships with the largest and most well-known panel providers in the world (ESMOR 28 from Qualtrics, 2014). Second, web survey responses are much faster than traditional face-to-face or postal surveys, which helps researchers save time (Bachmann & Elfrink, 1996; Taylor, 2000; Yun & Trumbo, 2000). In our case, the panel team of Qualtrics helped ensure this faster response by distributing our survey to their solid and targeted group in the panel with an email invitation. Furthermore, Qualtrics supports multiple digital platforms to grant access to web surveys without geographical and time restrictions. Moreover, web surveys typically have fewer unanswered questions than a traditional paper-and-pencil surveys (de Rada and Dominquez, 2013).

On the other hand, there are certain risks associated with the disadvantages of web surveys and the solutions that we use to overcome them. To begin with, there is a response rate issue (Thompson, Surface, Martin, Sanders, 2003). In our case, we address it by offering respondents financial incentives. The second is self-selection bias, which is the main restriction of web survey research (Stanton, 1998). To diminish the risk of self-selection bias,

Qualtrics sends one email invitation to potential respondents with the internet link to the survey and basic information related to the survey, such as that this survey is for research purpose only, how much time this survey is expected to take and what incentives are offered. No particular details regarding the survey are disclosed in the invitation. The third drawback is fraudulent respondent concern. Qualtrics panel team confirms respondent identity using TrueSample, Verity, SmartSample, USPS verification, and digital fingerprinting (ESMOR 28 from Qualtrics, 2014). Further, the panel team authenticates respondent addresses, demographic details, and email addresses.

In addition to overcoming particular obstacles regarding the web survey, there are other concerns with regard to ensuring data quality checks, such as sample representativeness and sample validity. To achieve sample representativeness, simple random sampling is necessary, which will clear away bias from sampling (Gravetter and Forzano, 2011). In our case, Qualtrics panel team selects highly qualified respondents on the basis of simple random sampling. Each respondent from the panel is proportional in a general proportion and randomized before the survey is deployed. Therefore, we can reasonably believe that the sample in our survey is representative. To achieve data validity, Qualtrics exclude duplication by checking every IP address and applying an advanced digital fingerprinting technology. Furthermore, each strategic panel partner employs deduplication techniques to offer the most reliable data and to maintain the integrity of the survey data. Finally, we add an extra screen-out setting within the questionnaires involving filter attention and time duration.

By relying on advantages and overcoming disadvantages of web surveys – and by providing a representative sample – we believe that our survey data are of sufficient quality for further analysis.

3.3 Data Measurement and Description

Broadly speaking, we take perfectionism, financial risk tolerance, financial literacy and financial behaviors, in addition to certain control variables into the statistical model. In the following, we introduce measurements for each variable and provide consistent abbreviations and references in subsequent sections. Table I shows the summary statistics of all variables.

First, we use multi-item scales to measure the constructs of perfectionism. Each item is an indicator for creating the reflective model. In the reflective model, indicators are a representative number of items that entirely reflect the latent variable they are measuring (Anderson and Gerbing, 1988; Garson, 2016). As a practical matter, we use an eight-item perfectionism scale (F-MPS-Brief) proposed by Burgess et al. (2016) that contains two core subscales of perfectionism (i.e., striving and evaluation concerns) for each subscale with four items each that use a 5-point Likert-type scale ranging from 1=strongly disagree to 5=strongly agree. The details of these measurements are fully depicted in the **Appendix**. In particular, we denote PS1, PS2, PS3 and PS4 in constructing striving, we denote PEC1, PEC2, PEC3 and PEC4 in creating evaluation concerns. In general, the higher the score, the more likely that the respondent is a perfectionist. The short version of the F-MPS provides one concise tool for measuring *Perfectionism* and it is approved to be valid and reliable in terms of internal consistency, measurement equivalence across ethnicities and concurrency, in addition to convergence (Burgess et al., 2016).

Second, financial risk tolerance is also latent terminology, which indicates the extent of financial risk that an individual can tolerate in making financial decisions (Grable and Lytton, 1999). We take the sum of a 13-item instrument (see details in **Appendix**) to construct one

index, with a higher score indicating a higher level of risk tolerance, as proposed by Grable and Lytton (1999). We use their sum to measure financial risk tolerance (*FRT*), with scores ranging from 13 to 47.

Third, financial literacy is the knowledge that individuals have who are equipped to make optimal financial decisions given limited information (Van Rooij et al. 2011). There are quantitative scales for measuring financial literacy, such as those developed by Lusardi and Mitchell (2008) and Fernandes et al. (2014). The latter offers a 13-item measure (see details in Appendix) that is unidimensional, reliable and valid to structure one summed index indicating the extent of financial literacy. Each item has one correct option coded by 1 and other choice coded as 0. Consequently, this index ranges from 0 to 13, in which higher scores means a higher level of financial literacy. We can use it to measure financial literacy (*FL*).

Afterward, we engage a logging transformation of liquid assets (e.g., money in savings and checking accounts, stocks and bonds, etc.) and fixed assets (e.g., real estate, vehicles, collections, furniture, equipment, etc.) to test the effect of *Perfectionism, FRT,* and *FL* on them. In particular, they are non-negative and continuous and are referred to as *Liq_asset* and *Fixed_asset* in subsequent analysis.

In addition to these, following Grable (2000), there are control variables for risk tolerance related to gender, age, marriage status, income, education and financial knowledge as well as economic expectation. In particular, *Age* measures the age/10 of individual when he takes part in our survey. *Education* measures the educational level that an individual has attained, ranging from 1 (less than high school) to 7 (doctorate). *Male* is a dichotomous variable coded 1 for male and 0 otherwise. *Martwo* is a binary variable coded 1 for living with a partner and 0 otherwise. Religion is a binary variable coded 1 for a respondent who indicates he/she belongs to a religion and 0 otherwise. *Old* is also a binary variable coded 1 if respondent`s age is higher than or equal to 55 and 0 otherwise. *White_race* is a dichotomous variable coded 1 if the respondent is Caucasian and 0 otherwise. *No_dep* represents the number of dependents and is non-negative and discrete. *Age* and *Annual_hincome* indicate the age of respondent and the annual income of a household before tax, respectively. *Invest_know* is a 5-scale variable measuring the level of self-report investment knowledge from 0 to 5. *Invest_year* is a continuous variable representing the years that respondent has been investing. *Religion* is a binary variable coded 1 if the respondent believes he is belonging to one religion.

The questions of these variables are found in Appendix.

Table I. Summary statistics for the analysis sample. The data source is web survey launched from Qualtrics online platform on August 2016. This table reports observations, means, standard errors, minimums and maximums of all variables in analysis. The key variables include Perfectionism striving denoted by *Perfectionism (S)*, Perfectionism evaluative concerns denoted by *Perfectionism (EC)*, financial risk tolerance denoted by *FRT*, financial literacy denoted by *FRT*, liquid assets denoted by *Liq_asset* and fixed assets denoted by *Fixed_asset*. The control variables show summary details about Age/10 (*Age*), Annual household income (*Annual_hincome*), Education attainment (*Education*), more 55 years old (*Old*), the knowledge about investment (*Invest_know*), the years that the individual has spent on investment (*Invest_year*), whether male (*Male*), whether married or living with partner (*Martwo*), whether individual is a Caucasian (*White_race*), the number of dependents (No_dep), whether one has religious belief (*Religio*n).

Variables		Mean	Standard Deviation	Min	Max
Key Variables					
Perfectionism (S)	PS1	2.472	1.076	1	5
	PS2	2.686	1.152	1	5
	PS3	2.711	1.013	1	5
	PS4	2.385	0.986	1	5
Perfectionism (EC)	PEC1	2.121	1.188	1	5
	PEC2	1.904	1.016	1	5

	PEC3	2.180	1.112	1	5
	PEC4	2.983	1.163	1	5
Control variabels					
Liq_asset		8.571	4.390	0	20.72
Fixed_asset		9.779	4.278	0	19.34
FRT		24.588	5.111	14	39
FL		8.726	2.481	2	13
Age		5.374	1.364	0.5	8.8
Annual_hincome		10.685	1.109	0	18.42
Education		3.845	1.402	1	7
Old		0.544	0.498	0	1
Invest_know		2.371	1.120	1	5
Invest_year		4.534	6.681	0	35
Male		0.334	0.472	0	1
Martwo		0.644	0.479	0	1
White_race		0.873	0.333	0	1
No_dep		1.099	1.358	0	10
Number of Observations		661			

3.3 Model Specification

In this section, we will provide reasons for employing partial least squares (PLS) for structural equation model (SEM), adopting statistical package *SmartPLS 3.2.4* (Ringle et al. 2014). We choose PLS-SEM, rather than covariance-based SEM and traditional regression, for the reasons discussed below. First, the purpose of this study is explorative, i.e., to develop a new theory (Barroso et al. 2010; Hair et al, 2011) by testing the effects of perfectionism on financial risk tolerance. Second, PLS is a nonparametric estimation that requires no data to be normally distributed (Santos-vijande et al, 2016). Third, two dimensions of perfectionism (Burgess et al. 2016) are unobservable variables, and PLS-SEM is advantageous for conducting casual inferences with latent variables (Lowry and Gaskin, 2014). Finally, SEM allows casual networks of effects to be modeled simultaneously (Lowry and Gaskin, 2014).

4. Results

As *Perfectionism* is a latent variable, the results in different models will report both Measurement Model fit and Structural Model fit (Chin, 1998; Hair et al., 2011; Marcoulides and Saunders, 2006). Measurement model fit requires reliability, convergent validity, and discriminant validity. With regard to checking reliability and convergent validity, we hold one conservative threshold 0.6 for factor loadings (Anderson and Gerbing, 1988; Hulland, 1999) and another liberal threshold, which is particularly dependent on the sample size required for significance (Hair et al. 1998) when, in one case, any factor loading is lower than 0.6. In addition, the thresholds of average variance extracted (AVE) and composite reliability (CR) and Cronbach`s alpha, respectively, are 0.5, 0.7 and 0.7. Discriminant validity is checked by relying on Fornell-Larcker in which we can identify whether there is discriminant validity by checking whether the absolute value term of the top number in the factor column is higher than the numbers below it in the factor correlation matrix (Garson, 2016).

For the Structural Model fit, we report the coefficient of determination (R^2) (Falk and Miller, 1992) and the path coefficients with their significance. We accept a threshold of R^2 that is not below 0.10 (Falk and Miller, 1992).

4.1. Tests for Hypotheses 1, 2 and 3

In this subsection, we will test hypotheses 1, 2 and 3 successively. We choose the consistent PLS Bootstrapping algorithm with 5,000 subsamples to estimate our model, as recommended by Henseler et al. (2016). Table II briefly shows the Measurement Model fit, the Structural Model fit and the path coefficients with the significance of the hypotheses and controls, as

well as certain observations. To begin with, it illustrates three hypotheses tested in this subsection.

Initially, we assigned PS1, PS2, PS3 and PS4 to striving and PEC1, PEC2, PEC3 and PEC 4 to evaluation concerns. Second, we evaluated the Measurement Model fit regarding all striving and evaluative concerns. We found that PEC1, PEC2, PEC3, and PEC4 have a weak factor loading, roughly around 0.3. After dropping PEC1 and PEC4, the factor loadings of PEC2 (0.716) and PEC3 (0.706) became acceptable. However, their composite reliability remained lower than 0.7, which means that we were only able to use PEC2 and PEC3 for measuring evaluative concerns, denoted as *Perfectionism (EC)*, and only for exploratory purposes (Chin, 1998; Hock and Ringle, 2006). Regarding the Measurement Model for striving, PS1 (0.895), PS2 (0.886) and PS3 (0.649) are all above acceptable levels, as described in Table 2. We kept PS3 because – according to Hair et al (1998) – if the sample size required for significance is more than 120 (our sample size is 661), factor loading should be above 0.5 (PS3=0.544). In addition, the AVE is 0.53 (>0.5) (Chin, 1998; Hock, R. and Christian. M, 2006); Cronbach`s alpha is acceptable at 0.748(>0.7); the CR is 0.766 (>0.70). Consequently, we included PS1, PS2, and PS3 to measure striving, denoted as *Perfectionism* (S). Furthermore, we confirmed that discriminate validity among variables was established, based on the correlation matrix, shown in the Appendix. We subsequently found that R^2 is 0.331>0.1, and the Structural Model fit is acceptable as well. As a consequence, we were able to test hypotheses 1, 2 and 3 based on their respective path coefficients in Table II.

In particular, the results indicate that the positive effects of *Perfectionism* (striving) on financial risk tolerance are significant (**H1**: path coefficient=0.191; t-statistics=5.644; p<0.01), while there is no significant adverse effect from *Perfectionism* (EC) on FRT. Concerning the path route from *FL* to *FRT*, the results did not support the second hypothesis (**H2**) because the effects of financial literacy on financial risk tolerance are not statistically significant (corresponding coefficient=0.034; t-statistics=0.857). With regard to H3, the results did not show that financial literacy moderates the positive effects of perfectionism on financial risk tolerance (**H3**: path coefficient=0.008; t-statistics=0.041). Therefore, the results partially supported H1 but did not confirm **H2** or **H3**.

Table II shows the details of Measurement model and the Structural model of testing hypothesis H1a, H1b, H2 and H3. Significance levels of 1%, 5% and 10% are, respectively, indicated as ***,** and *. The significance is calculated by bootstrapping 5,000 subsamples (Henseler et al. 2016).

H1a: Perfectionism (S) increases financial risk tolerance (FRT) whereas Perfectionism (EC) reduces it				
H1b: Perfectionism (EC) increases financial risk tolerance (FRT) whereas Perfectionism (S) reduces it				
H2: Financial literacy (FL) increases financial risk tolerance				
H3: Financial literacy moderates the relationship between perfectionism and financial risk tolerance				
Measurement Model fit	Loadings	AVE	CR	Cronbach's alpha
Perfectionism (striving)		0.53	0.766	0.748
PS1	0.895	Item PS1 question: I set higher goals for myself than most people		
PS2	0.899	Item PS2 question: I have extremely high goals		
PS3	0.544	Item PS3 question: Other people seem to accept lower standards from themselves than I do		
Perfectionism (evaluation)		0.505	0.671	0.671
PEC2	0.716	Item PEC2 question: If someone does a task at work/school better than me, then I feel like I failed at the whole task		
PEC3	0.706	Item PEC3: If I do not do well all the time, people will not respect me		

Control Variables	Coefficients	Standard Deviation	t-statistics	P-value

Age→FRT	**-0.200*** **	0.048	4.178	0.000
Annual_hincome→FRT	0.019	0.044	0.439	0.661
Education→FRT	0.045	0.039	1.165	0.244
Old→FRT	**0.103** **	0.047	2.373	0.032
Invest_know→FRT	**0.159*** **	0.036	4.392	0.000
Invest_year→FRT	**0.138*** **	0.037	3.709	0.000
Male→FRT	**0.154*** **	0.034	4.605	0.000
Martwo→FRT	-0.003	0.035	0.090	0.929
Religion→FRT	-0.037	0.033	1.123	0.261
White_race→*FRT*	-0.036	0.034	1.114	0.265

Hypothesized relationships	Coefficients	Standard Deviation	t-statistics	P-value
H1a: *Perfectionism(S) →FRT*	**0.191*** **	0.033	5.732	0.000
H1b: *Perfectionism(EC) →FRT*	-0.004	0.034	0.110	0.931
H2: *FL → FRT*	0.036	0.039	0.924	0.356
H3: Moderation effect of FL on *Perfectionism* (S)→ *FRT*	0.002	0.001	0.055	0.956
Structural model fit (R^2)	0.333			
Number of observations	661			

4.2. Test for Hypothesis 4, 5, 6 and 7

Since the results did not indicate that Perfectionism (evaluation concerns) significantly affect financial risk tolerance, we excluded those results and kept only striving for measuring adaptive perfectionism. Subsequently, striving presents for *Perfectionism*.

Based on the approved H1, it merits discovering whether the corresponding path coefficients (*Perfectionism* to *FRT*) in our PLS path model significantly differ across different demographic groups, such as across the two age groupings, those living alone and those living with a partner, those with religious faith and those without this faith, males and females, etc. Hair et al. (2014) note that there is heterogeneity when respondents from two or more groups show remarkable discrepancies in their model relationship. Thus, it is particularly beneficial from practical and theoretical perspectives regarding making additional findings (Hair et al. 2014), by comparing multi-groups of respondents. Therefore, we conducted Partial Least Square multi-group analysis (PLS-MGA), as initially proposed by Kiel et al. (2000) and extended by Henseler et al. (2009), from parametric to non-parametric methods. By testing H4 to H7, we expect to enhance the conclusions regarding H1 and obtain additional findings.

In the following content, we successively tested hypotheses 4, 5, 6 and 7. We chose the consistent PLS Bootstrapping algorithm with 5,000 subsamples to estimate our model (Henseler et al. 2016). In general, Table 3 shows the measurement model fit, the structural model fit, the path coefficients with significances of the hypothesized relationships, and the number of observations, as well as multi-group comparison test results across demographic segments with regard to males vs. females, living with partner vs. living alone, the older vs. the young and middle-aged, those with religious faith vs. those who do not have this faith. Before hypotheses testing, we checked the measurement model fit and the structural model fit. The factor loadings for PS1, PS2 and PS3 for the Measurement Model fit are all above 0.6. The CR, AVE, and Cronbach`s alpha are all acceptable and are larger than 0.7, 0.5 and 0.7, respectively. Discriminate validity was established as well (see the correlation matrixes of

each subgroup in the **Appendix**). Thus, the Measurement Model fit was affirmed. Since all R^2 were above 0.1, the Structural Model fit was acceptable. For now, we were able to move forward to hypotheses testing for **H4, H5, H6 and H7** by analyzing the path coefficients and their significance.

First, the positive effects of perfectionism were consistently and statistically significant on financial risk tolerance across all segmentations at approximately 0.2. Second, the differences of the path coefficients (*Perfectionism→FRT*) in absolute terms between males (N=221) and females (N=440) was 0.02 non-significant (p>0.1). As a consequence, H4 was not supported. Third, the results indicated the positive effects of perfectionism on financial risk tolerance for those living alone (N=426) were larger than for those living with a partner (N=440) ($Diff_{Perfectionism \rightarrow FRT}|Livng\ alone - Living\ with\ partner| = 0.102$; p<0.1). Therefore, H5 was confirmed. Fourth, the results did not support that there was a significant difference, between the path coefficients from *Perfectionism* to *FRT* for the old (N=360) and the younger and middle-aged (N=301) ($Diff_{Perfectionism \rightarrow FRT}|Old - non\ Old| = 0.04$; p>0.1). Hence, H6 was not approved. Subsequently, we did find that H7 was supported because of the absolute difference between the path coefficients (*Perfectionism→FRT*) of those with religious faith (N=474) and those without religious faith (N=187) is 0.098 and significant at the 10% level. These findings provide additional information regarding the effects of perfectionism on financial risk tolerance among different segments of the general population.

4.3. Test for Hypothesis H8 and H9

We approved the hypothesis of causal links regarding *Perfectionism→FRT* in the above subsections. Therefore, conceptually, perfectionism plays a role as a psychological trait in explaining the variance of financial risk tolerance. To comprehend the mechanism through which the casual variable (*Perfectionism*) affects outcomes (owned value of liquid assets and fixed assets), we implemented the mediation test first proposed by Baron and Kenny (1986). Figures 3 and 4 are essential to understanding the mediation test. In this mediation model, FRT is the mediator. Figure 5 provides specific steps for the mediation test (Zhao et al. 2010) that we followed.

Figure 3

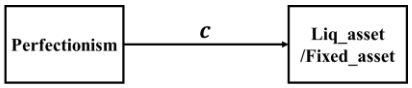

Figure 3 graphs the direct effect *c* of perfectionism on owned liquid assets or fixed assets, based on Baron and Kenny (1986).

Figure 4

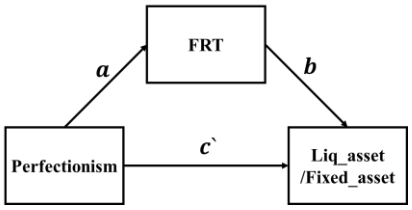

Figure 4 graphs the direct effect *c`* of perfectionism on owned liquid assets or fixed assets and the indirect effects *a* and *b* of perfectionism on liquid assets and fixed assets, respectively, based on Baron and Kenny (1986).

Figure 5
Mediation Analysis Procedures

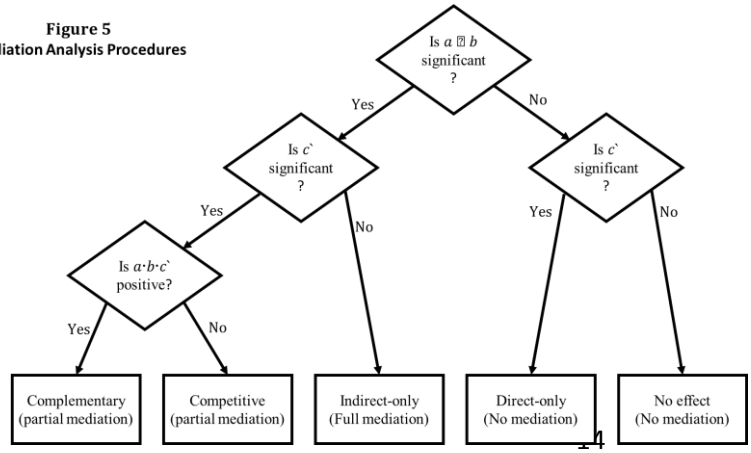

Figure 5 describes the procedures that we followed for the mediation test (Zhao et al. 2010).

Table III describes the measurement model fit, the structural model fit, the path coefficients with significances of the hypothesized relationships, and the number of observations for mediation tests that we discussed immediately above. We also report the moderation effect of financial literacy on *Perfectionism→Liq_asset/Fixed_asset* and *FRT→Liq_asset/Fixed_asset*, which we will analyze shortly.

Prior to the hypothesis test for **H8**, we checked the Measurement Model fit and the Structural Model fit. Regarding the Measurement Model fit, factor loadings of PS1, PS2 and PS3 are acceptable. CR, AVE, and Cronbach`s alpha are all acceptable at greater than 0.7, 0.5 and 0.7, respectively. Discriminate validity was established as well (See correlation matrixes of in **Appendix**). Thus, the Measurement Model fit was affirmed. Since almost all R^2 were above 0.1 (because the $R^2$for *Fixed_asset* in the model without the mediator *FRT* is 0.098, slightly lower than 0.1, whereas its R^2 is 11.4 higher than 0.1 in the model with mediator *FRT,* we use it), the Structural Model fit was acceptable. Therefore, we were able to move forward and test **H8** by following the procedures in Figure 3. In particular, the hypothesized relationships are that 1) FRT mediates the effects of perfectionism on owned fixed assets and 2) FRT mediates the effects of perfectionism on owned liquid assets. In the first step, in models with the mediator (*FRT*), there were significant indirect effects from perfectionism to fixed assets ($\boldsymbol{a}$: path coefficient=0.217; t-statistics=5.448; p<0.01 and $\boldsymbol{b1}$: path coefficient=0.137; t-statistics=3.569; p<0.01) and also to liquid assets ($\boldsymbol{a}$: path coefficient=0.217; t-statistics=5.448; p<0.01 and $\boldsymbol{b2}$: path coefficient=0.214; t-statistics=5.746; p<0.01). Second, the direct effect from perfectionism to fixed assets was not significant *(* $\boldsymbol{c1}$**`** : path coefficient=0.052; t-statistics=1.071; p>0.1), indicating that financial risk tolerance fully mediated the effects from perfectionism to the value owned of fixed assets. We verified the significance of this mediation effect following Sobet (1982), which was significant at the 1% level. Third, the direct effects from perfectionism to liquid assets were significant ($\boldsymbol{c2}$**`**: path coefficient=0.105; t-statistics=2.178; p<0.01) and furthermore $\boldsymbol{c2}$**`,** $\boldsymbol{b2}$ **and** $\boldsymbol{a}$ were positive**,** indicating that financial risk tolerance partially and complementarily mediated the effects of perfectionism on liquid assets. The total effect of perfectionism on liquid assets is 0.105+0.217*0.298=0.170, which is less than the effect of financial risk tolerance on liquid assets= 0.214. We verified the significance of these mediation effects following Sobet (1982), which are all significant at the 1% level as well. Therefore, H8 was supported.

Notably, in Table III, the effect of financial literacy on the owned value of fixed assets is positively significant (*FL→Fixed_asset*: path coefficient=0.291;t-statistics=7.594;p<0.01), and there is also such significant effect of financial literacy on owned value of liquid assets (*FL→Liq_asset*: path coefficient=0.298;t-statistics=8.635;p<0.01).

We tested whether financial literacy moderated the effects of perfectionism and financial risk tolerance on the owned value of fixed assets and liquid assets. Precisely, the results showed that there was no significance of moderation effects from financial literacy on the paths regarding *Perfectionism→Liq_asset, FRT→Fixed_asset* or *FRT→Liq_asset.* Consequently, H9 was not supported.

Finally, Table IV shows that there is an unelectable point that the path coefficients of *FL→Fixed_asset* (0.291) and *FL→Liq_asset* (0.298) are larger than the total effect from perfectionism to liquid assets (0.17), the direct effect of financial risk tolerance to fixed assets (0.137) and the direct effect from financial risk tolerance to liquid assets (0.214). This finding (To continuous at Page 18)

Table III reports the results of the Measurement Model and the Structural Model for testing H4, H5, H6, and H7. We test the significance of difference between the impact of perfectionism (striving) on financial risk tolerance on 1) the male and the female, 2) living with partner and living alone, 3) the old and the non-old, 4) faithful individuals and atheists. Significance levels of 1%, 5% and 10% are indicated as ***,** and *, respectively. The significance is calculated using 5,000 subsamples (Henseler et al. 2016).

Testing for segment difference	**Factor Loading**	**Male (Group 1)**	**Female (Group 2)**	**Living with partner (Group 1)**	**Living alone (Group 2)**	**Old (Group 1)**	**Not old (Group 2)**	**Religion (Group 1)**	**Non-Religion (Group 2)**
Measurement Fit									
Perfectionism (S)	PS1	0.876	0.908	0.902	0.886	0.882	0.903	0.896	0.895
	PS2	0.848	0.911	0.878	0.896	0.849	0.880	0.908	0.879
	PS3	0.671	0.621	0.654	0.644	0.878	0.724	0.649	0.646
CR		0.844	0.861	0.855	0.857	0.832	0.877	0.853	0.864
AVE		0.646	0.680	0.671	0.668	0.628	0.705	0.683	0.664
Cronbach`s alpha		0.722	0.761	0.748	0.749	0.696	0.786	0.766	0.741
Structure Fit									
R^2		0.290	0.327	0.338	0.334	0.253	0.180	0.364	0.256
Observations		221	440	235	426	360	301	474	187
Path coefficients									
Perfectionism (S)→FRT		**0.198 *** (0.059)**	**0.178 *** (0.040)**	**0.151 *** (0.037)**	**0.253 *** (0.058)**	**0.185 *** (0.048)**	**0.225 *** (0.049)**	**0.212 *** (0.038)**	**0.114 * (0.063)**
t-statistics		**3.016**	**4.977**	**4.058**	**4.337**	**4.563**	**3.882**	**5.643**	**1.798**
Diff (Group1-Group2)		-0.02		**-0.102***		-0.04		**0.098***	

Table IV reports the results of the Measurement Model and the Structural Model for testing H8 and H9. Significance levels of 1%, 5% and 10% are indicated as ***,** and *, respectively. The significance is calculated using 5,000 subsamples (Henseler et al. 2016).

Testing for mediation effect of Financial Risk Tolerance on Perfectionism → Financial behaviors						
Measurement and Structure Fit of Model without a mediator (*FRT*) (N=661)		Factor Loading	Composite Reliability	AVE	Cronbach`s alpha	R^2
Perfectionism (S)	PS1	0.715	0.764	0.526	0.748	
	PS2	0.869				
	PS3	0.561				
Path relationships		Coefficient	Standard Deviation	t-statistics	p-value	
*c*1: *Perfectionism (S)→Fixed_asset*		**0.099****	0.037	2.216	0.034	0.098
*c*2: *Perfectionism (S)→Liq_asset*		**0.176*****	0.044	4.001	0.000	0.124
Measurement and Structure Fit of the Model with a mediator (*FRT*) (N=661)		Factor Loading	Composite Reliability	AVE	Cronbach`s alpha	R^2
Perfectionism (S)	PS1	0.719	0.760	0.517	0.748	
	PS2	0.822				
	PS3	0.599				
Path relationships (N=661)		Coefficient	Standard Deviation	t-statistics	p-value	
*c*1`: *Perfectionism (S)→Fixed_asset*		0.052	0.048	1.071	0.284	0.114
*c*2`: *Perfectionism (S)→Liq_asset*		**0.105****	0.048	2.178	0.030	0.165
a: *Perfectionism (S)→FRT*		**0.217*****	0.040	5.448	0.000	0.340
*b*1: *FRT→Fixed_asset*		**0.137*****	0.038	3.569	0.000	0.114
*b*2: *FRT→Liq_asset*		**0.214*****	0.037	5.764	0.000	0.165
FL→Fixed_asset		**0.291*****	0.039	7.594	0.000	0.114
FL→Liq_asset		**0.298*****	0.035	8.635	0.000	0.165
FL moderates *Perfectionism (S)→Liq_asset*		-0.035	0.042	0.842	0.400	0.165
FL moderates *FRT→Fixed_asset*		0.004	0.042	0.101	0.919	0.114
FL moderates *FRT→Liq_asset*		-0.013	0.037	0.037	0.722	0.165

indicates that financial literacy positively influences individual financial wealth more than perfectionism and financial risk tolerance.

5. Discussion

In the last section, we investigated four research questions and tested nine hypotheses derived from these questions. In general, the results suggested four hypotheses. In this section, we will first review the specified research questions and the hypotheses supported by the results, compare our results with those of the previous literature, and highlight our contributions. Second, we discuss the limitation of this study.

5.1. Explanations of Findings.

Research Question One: Do perfectionism and financial literacy play a role in affecting individual financial risk tolerance? If so, how? We tested hypotheses H1a, H1b, H2, and H3.

The results suggested that perfectionism (striving) increases individual financial risk tolerance, but maladaptive perfectionism (evaluative concerns) did not lower financial risk tolerance .thus supporting H1a and not H1b.

The results indicated that financial literacy did not influence financial risk tolerance (H2) and did not moderate the relationship between perfectionism (striving) and financial risk tolerance (H3).

To begin with, we give reasons to explain these findings both theoretically and empirically. In particular, in the field of psychology, there are two primary forms of perfectionism commonly studied (Hewitt and Flett, 1991). The first type is socially prescribed perfectionism, which encompasses beliefs, including the high standards for oneself expected by others and acceptance by others (Enns and Cox, 2002). It is consistently agreed that socially prescribed perfectionism is maladaptive, neurotic and encourages negative affect (Molnar et al. 2006) as well as negative psychopathological symptoms such as anxiety, depression, somatization, etc. (Hewitt and Flett, 2004; Stoeber et al. 2009). Since Eisenberg et al. (1998) found that anxiety and depression are correlated with risk aversion, it is not difficult to infer that socially prescribed perfectionism is associated with higher risk aversion and lower risk tolerance. We tentatively put forward that the inner mechanisms are that socially prescribed perfectionism is positively related to the fear of failure (Hagtvet and Benson, 1997), worry (Liebert and Morris, 1967), and lack of confidence (Hodapp, 1991). However, our findings did not go in the direction as the inference above primarily because the scales that we applied in the present paper measure self-oriented perfectionism, which is the third form of perfectionism in Hewitt and Flett (1991).

Self-oriented perfectionism includes two ambivalent dimensions: striving and evaluative concerns. The former captures features of perfectionistic striving, having high standards and setting specific standards for one`s performance (Stoeber et al. 2008a). Empirically, it was found to be consistently positively correlated with positive psychological adjustment, including endurance, positive affect, athletic performance, music performance, and educational performance, all in the hope of success, etc. (Stoeber et al. 2008b; Bieling et al. 2003; Murphy, 2012). We conjecture that individuals with high levels of striving are more likely to take risks for improving their performance by implementing innovative and creative activities or achieving higher wellbeing. In the field of finance, it is reasonable to infer that individuals with perspective striving are more likely to aim for financial prosperity, regarding wealth accumulation as positive and therefore taking financial risks because expected returns are positively associated with risk (Merton, 1973; Ghysels et al. 2005). This deduction process results in the reasonable argument that *striving perfectionism positively affects wealth*

accumulation via raising an individual's financial risk tolerance, which was subsequently suggested by our results in testing the mediation effects of financial risk tolerance on the relationship between perfectionism (striving) and financial wellbeing (wealth accumulation).

On the other hand, the results did not indicate that evaluation concerns, the other dimension of self-oriented perfectionism, significantly lowers individual financial risk tolerance. Theoretically, this sub-form of perfectionism consists of critical self-assessments of one`s performance, feelings of disparity between expectations and results, high concerns about mistakes and external expectations, and fears about others` acceptance (Stoeber et al, 2008a). Empirically, perfectionism (evaluation concerns) is positively correlated with negative affect, low self-esteem (Stoeber and Otto, 2006), low self-efficacy (Stumpf and Parker, 2000), fear of failure (Stoeber and Becker, 2008b), and self-depreciating attributions (Stoeber and Becker, 2008b). Thus, we expected that perfectionism (evaluation concerns) would lower individual risk tolerance as it is reasonable to believe that a person who feared failure would delay or behave conservatively in financial activities. Nevertheless, the result was non-significant probably because the negative effects of perfectionism (evaluation concerns) are not as high as the positive effects (striving). Stoeber in Murphy (2012) mentioned that evaluative concerns were not consistently negatively correlated with performance (evaluation concerns).

Third, the results imply that there is neither no effect of financial literacy on financial risk tolerance, nor a moderating effect of financial literacy on the relationship between perfectionism (striving) and financial risk tolerance. The former is not consistent with Gustafsson and Omark (2015), who suggested that financial literacy could increase financial risk tolerance. We used the combined score with 13-item scale for measuring financial risk tolerance proposed by Grable and Lytton (1999), which is the same as that used by Gustafsson and Omark (2015), and used another 13-item scale to calculate the summary score for financial literacy proposed by Fernandes et al. (2014), which was different from their measurement for financial literacy. We launched an online survey to collect information from a sample representing the general US population (N=661) while questionnaires were also distributed on one Swiss university campus to students (N=221). As the demographic group of samples (general vs. students) and data collection approaches (online survey vs. traditional survey) are different, we do not exclude the possibility that our results are affected by measurement error or sampling error bias, which calls for further empirical analysis regarding the relationship between financial risk tolerance and financial literacy.

Research Question Two (Multi-Group)*:* Do the magnitudes of this effect significantly differ in different demographic groups (male vs. female, single vs. non-single, high education vs. non-high education, religion vs. non-religion, aging and older vs. young and middle-aged)? We tested hypotheses H4, H5, H6, and H7 in this regard.

The results indicated that the effect of the magnitude of perfectionism (striving) on individual financial risk tolerance differ significantly among 1) individuals living alone and those living with a partner (H5), and 2) individuals with religion faith and those without (H7).

The results did not support that the magnitude of the effects of perfectionism (striving) on individual financial risk tolerance differ significantly among 1) males and females (H4), and 2) those individuals who are aging or older and those who are younger or middle-aged (H6).

Additionally, the path coefficients of perfectionism (striving) on financial risk tolerance are consistently significant across different groups based on gender, age, marital status and religion.

First, there are two reasons for multi-group analysis, as discussed in the Methodology section above. We briefly note that the first reason is to test the validity of the results we obtained in

support of hypothesis H1a. PLS-SEM typically analyze the full pool of samples (N=661, in our case) under the assumption that the sample is homogeneous (Hair et al. 2016). However, in reality, data from individuals (our data are individual-level) are typically heterogeneous, which will threaten the validity of the results (Becker et la., 2013). The second reason is that we may have additional information when using multi-group analysis.

In particular, the path coefficients of all the subgroups are significant, as separated by observable variables (gender, age, marriage status and religion) from perfectionism (striving) to financial risk tolerance, which provides robust evidence for H1a. However, we found that the difference in the magnitude effects between those who are living alone and those who are living with a partner was 0.102, significant at the 10% level. In other words, the reaction of an individual living alone to perfectionism (striving) is 0.102 higher than those of the counterparty individuals in terms of financial risk tolerance, which may reflect that married couples have more wealth, physical health, mental health than individuals not living with a partner (Matters, 2005) and implies that individuals living together have less striving motivation than individuals living alone as they have better health and financial wellbeing, on average. Roszkowski et al. (1993) found that unmarried individuals are more risk tolerant, which may also explain this finding. In addition, the effects of perfectionism (striving) on the financial risk tolerance of non-religious individuals were smaller at 0.098 than the influence of perfectionism (striving) on the financial risk tolerance of religious individuals. This difference is significant at the 10%. Apparently, religious individuals typically have higher expectations of themselves (Koenig and Larson, 2011) and therefore perfectionism (striving) and religious faith may mutually strengthen their effects, including, in our case, on financial risk tolerance for seeking financial wellbeing.

Research Question Three (Mediation)*:* Does financial risk tolerance mediate the effects of perfectionism on wealth, in terms of the amount of fixed assets and liquid assets held? If so, how? We tested H8 in this regard.

The results suggested that financial risk tolerance fully mediates the positive effects of perfectionism (striving) on the amount of fixed assets held.

The results indicated that financial risk tolerance partially mediates the positive effects of perfectionism (striving) on the amount of liquid assets held.

In the empirical tests, the results suggest that financial risk tolerance mediates the relationship between perfectionist striving and financial wealth (fixed assets and liquid assets) by observing the mediation effect and passing the Sobel test. However, we do not yet have the theoretical background to conclude that this finding is a real causal inference (Hair et al. 2012). In the previous literature, there are no direct results that address the relationship between perfectionist striving and financial wellbeing. Therefore, we attempted to begin with indirect literature and argue appropriately as much as we can, relying on our knowledge and logics.

Because perfectionism (striving) is closely related to conscientiousness, extraversion, effort, active emotion, satisfaction with life, achievement, social interaction and good performance (Stoeber and Otto, 2006), it is not difficult to infer that perfectionists would seek health wellbeing, financial wellbeing (de Chavez, 2005) and subjective well-being (Diener and Suh, 2000), at least to the same level that “normal” people aspire to. In particular, if individuals chase financial wellbeing, they must take a certain amount of risk for expected return; thus, individuals with active perfectionism are more likely to tolerate financial risk. Therefore, this argument provides theoretical support for the notion that perfectionism (striving) may

positively influence individual financial wellbeing in terms of liquid assets and fixed assets by increasing personal financial risk tolerance.

As the empirical results are consistent with the theoretical basis, we can confidently conclude that active perfectionistic strivings are positively functional with regard to wealth health (liquid assets and fixed assets) by increasing individuals' financial risk tolerance.

Research Question Three (Moderation)*:* Does financial literacy moderate financial risk tolerance on wealth in terms of the amount of fixed assets and liquid assets held. We tested H9 in this regard.

The results do not indicate that financial literacy has a significant moderation effect on the relationship between financial risk tolerance and the value of liquid and fixed assets.

We expected that we would find moderation effects; thus, we believe that the positive relationship between financial risk tolerance and liquid assets/fixed assets would depend on financial literacy. Financial literacy measures the extent to which individuals comprehend essential financial knowledge and acquire the capabilities and confidence to manage their personal financial affairs by relying on appropriate short-run decision making and long-term firm financial planning, while remaining mindful of life events and the changing financial landscapes (Fernandes et al. 2014). From its definition, financial literacy is more likely to increase the strength of the relationship between financial risk tolerance and liquid assets/fixed assets, but this hypothesis was not supported. By contrast, we found that both had a positive effect on both fixed assets and liquid assets, which seems to be higher than the effects of financial risk tolerance on both fixed assets and liquid assets (approximately 0.3).

Although this hypothesis was not supported, it still confirms and highlights – from another perspective – the roles that financial risk tolerance and financial literacy play for individual financial wealth, in terms of both fixed assets and liquid assets.

5.2 Implications

In general, this study explores the potential effects of perfectionism on individual financial matters, in terms of risk attitude, wealth accumulation, and financial literacy. Testing our hypothesized relationships leads us to certain findings, which have the following implications.

First, the present paper offers empirical evidence that positive perfectionism (striving) is positively associated with financial risk tolerance. Second, this evidence is consistently significant across different demographic groups, differentiated by gender, age, religion and marital status. However, the results reveal that the magnitude of the effects of positive perfectionism on financial risk tolerance for individuals living alone and those with religious faith are greater than the magnitude of the same effect on individuals living with partners and on those without religious faith. Subsequently, it is notable that the present paper extends knowledge about the good aspects of perfectionism from the traditional field of psychology to the field of finance. Empirically, it provides evidence in support of the notion that the positive perfectionistic striving dimension is beneficial for individual financial wellbeing, as it is positively correlated with wealth accumulation constructed by liquid assets and fixed assets. In particular, our results support the hypothesized relationships that financial risk tolerance partially and fully mediates the positive effects of perfectionistic strivings on liquid assets and fixed assets, respectively. In other words, this study shows that perfectionistic strivings act positively on individual financial wealth by increasing an individual's financial risk tolerance.

6. Conclusion

Perfectionism is a multi-dimensional personality trait that yields an interpretation of individual differences in attitudes and performance (Sherry et al. 2017). Positive perfectionistic strivings are related to endurance, performance, achievement and positive affect, whereas the perfectionistic evaluative concerns, the opposite half of positive perfectionism, are negatively correlated with self-efficacy and self-esteem (Stoeber, 2008). However, there is little scholarship in the finance literature regarding its effects on or relationships with financial decision making, financial risk attitude or financial behaviors.

This paper conducts an online survey study with a sample of 661 respondents from the US general population based on simple random sampling to explore how perfectionism relates with financial risk tolerance and financial literacy. We use PLS-SEM to test the hypothesized relationships, successively. First, the results support the notion that the positive perfectionism form (strivings) acts positively on individual financial risk tolerance but do not reveal any significant effects for the negative perfectionism form (evaluative concerns). Second, striving positively and consistently correlated with financial risk tolerance across different demographic subgroups in the general population. Third, the positive effects from positive perfectionistic strivings on financial risk tolerance are significantly higher for individuals living alone and for those with religious faith than for their demographic counterparties, i.e., individuals living with partners and individuals without religious faith. More essentially, we discover that financial risk tolerance mediates the effects of perfectionism (strivings) fully on fixed assets and partially on liquid assets, indicating that the underpinning mechanism motivating active perfectionism to achieve financial wellbeing (in terms of accumulating wealth) is acting through one channel, financial risk tolerance. Finally, although we note that financial literacy plays a decisive role in wealth accumulation, our results do not show that financial literacy interacted with the links between financial risk tolerance, on one hand, and fixed assets and liquid assets, on the other.

This study has certain limitations. First, due to its exploratory nature, it lacks sufficient theoretical support and empirical evidence from previous studies on the topic of perfectionism and risk tolerance, which leads to certain unreal discussions with less rigorous deduction about the possible reasons why positive perfectionism is positively associated with financial risk tolerance. Second, the sample is limited to the US general population and the number of respondents is small (N=661). Future research might improve and consolidate the findings in this study from two perspectives, correspondingly. The first aspect is to strengthen the internal validity of this study, such as by providing experimental results showing that the difference between the average extent of financial risk tolerance of positive perfectionists and that of non-perfectionists is significant when controlling negative perfectionism. The second aspect is straightforward in terms of testing the same hypothesis with a larger sample size and randomly selected respondents from outside the US.

Consequently, this paper nonetheless extends knowledge regarding perfectionism from the field of traditional psychological theory to behavioral finance in terms of providing robust empirical evidence regarding the positive correlation between it and financial risk tolerance, generating evidence that positive perfectionism is positively associated with individual financial wealth accumulation by encouraging higher financial risk tolerance, etc.

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Appendix

Questionnaire of this study

Research Title: Perfectionism, financial literacy, and financial risk

Participant Information Sheet

Please read this information carefully before deciding to take part in this research.

This is a research aiming to study whether perfectionism influences individual financial risk tolerance and if this link is moderated by financial literacy of ones who are 55 or more years old (Please make sure you meet these requirements). This questionnaire may take you 20 to 30 minutes to complete it. Your participation in this survey is very important because you will be contributing to one of the first studies about the relationship among perfectionism, financial risk preference, and financial literacy. There will be no risk in taking this survey. Your answers and personal information will be confidential. Your name and contact details will not be shown as it is not required from you to provide your name. Only the aggregate statistical data based all of your information will be presented in this research in terms of paper in the future. Data and results will be stored properly according to the Data Protection Act and saved in a locked cabinet or encrypted file in a password protected computer. My name is Di Wang and I am a researcher at Banking and Finance Research Group of Business School at University of Southampton. You have the right to withdraw from this survey at any time for any reason.

Participants may wish to contact:

1) The researcher, Di Wang (dw2n13@soton.ac.uk).

2) The research support officer, Ying Ying Cheung (risethic@soton.ac.uk);

3) Head of Research Governance. Telephone: 02380 595058. Email: rgoinfo@soton.ac.uk.

- ❍ Yes, I am willing to join in this survey.
- ❍ No, I do not want.

Demographic Information

Q3.1 What is your age?

Q3.2 What is your gender?

- ❍ Male
- ❍ Female

Q3.3 Place of Birth:

- ❍ North American
- ❍ South American
- ❍ Europe
- ❍ Australia/New Zealand
- ❍ Middle East
- ❍ West or Central Asia
- ❍ East, South, Southeast Asia
- ❍ Other

Q3.4 Country of Residence

Q3.5 Marital status:

- ❍ Single
- ❍ Common-Law Relationship
- ❍ Married
- ❍ Divorced
- ❍ Widowed

Q3.6 Number of dependents:

Q3.7 Highest Level of Education Attained:

- ❍ Less than High School
- ❍ High School Graduate or Equivalent
- ❍ Some college but No Degree
- ❍ Associate Degree
- ❍ Bachelor Degree
- ❍ Master Degree
- ❍ Doctorate

Q3.8 Employment Status

- ❍ Full-time
- ❍ Part-time
- ❍ Self-employed
- ❍ Business Owner
- ❍ Homemaker
- ❍ Retired
- ❍ Other

Q3.9 At what age do you plan to retire?

Q3.10 How much is your Annual Household Income before Tax in US dollar? (Average over last 5 years from all sources: salary, investment income, pension or social security, etc.)

Q3.11 What is the value of your Liquid assets in US dollar? (Liquid assets are cash or securities that can quickly be converted into cash. E.g. money in savings and/or chequing accounts, stocks, bonds, etc.)

Q3.12 What is the value of your Fixed Assets in US dollar? (Fixed assets are physical items that cannot quickly be converted into cash. E.g. real estate, vehicles, collections, furniture, equipment, etc.)

Q3.13 How much is your Outstanding loans and liabilities (Total Debt) in US dollar?

Q3.14 Please input the word 'stock market' in the space below:

Q3.15 What is your Ethnicity?

- ❍ White, European American, or European
- ❍ Black, African, or African American
- ❍ Others

Q3.16 What is your monthly expenses in US dollar?

Q3.17 How much money do you gamble per month in US dollar? (Include all types of gambling – lotteries, scratch tickets, casino, poker, sports gambling, etc.)

Q3.18 Over the next 2-3 year, your income will be:

- ❍ Very unstable
- ❍ Somewhat less stable than today
- ❍ As stable as today
- ❍ Somewhat more stable than today
- ❍ Very stable

Q3.19 Which statement best describes your investment knowledge?

- I have limited knowledge and rely exclusively on other sources (financial advisor, accountant, family, etc.).
- I understand basic investment principles but do not actively follow the financial markets.
- I have a general understanding of financial markets and follow their progress occasionally.
- I have a good working knowledge of financial markets and follow the markets actively.
- I have in-depth knowledge (which includes options and strategies), manage my own portfolio, and follow the financial markets daily.

Q3.20 How many years have you been investing?

Q3.21 Do you regard yourself as belonging to a religion?

- Yes
- No

Financial risk tolerance

Q4.1 The general, how would your best friend describe you as a risk taker?

- A real gambler
- Willing to take risks after completing adequate research
- Cautious
- A real risk avoider

Q4.2 You are on a TV game show and can choose one of the following. Which would you take?

- $1,000 in cash
- A 50% chance at winning $5,000
- A 25% chance at winning $10,000
- A 5% chance at winning $100,000

Q4.3 You have just finished saving for a "once-in-a-lifetime" vacation. Three weeks before you plan to leave, you lose your job. You would:

- Cancel the vacation
- Take a much more modest vacation
- Go as scheduled, reasoning that you need the time to prepare for a job search
- Extend your vacation, because this might be your last chance to go first-class

Q4.4 If you unexpectedly received $20,000 to invest, what would you do?

- Deposit it in a bank account, money market account, or an insured CD
- Invest it in safe high-quality bonds or bond mutual funds
- Invest it in stocks or stock mutual funds

Q4.5 In terms of experience, how comfortable are you investing in stocks or stock mutual funds?

- Not at all comfortable
- Somewhat comfortable
- Very comfortable

Q4.6 When you think of the word "risk", which of the following words comes to mind first?

- Less
- Opportunity
- Uncertainty
- Thrill

Q4.7 This is an attention filter. Please select 'Stock'.

- Stock
- Bond
- Bank saving
- None of them

Q4.8 Some experts are predicting prices of assets such as gold, jewels, collectibles, and real estate (hard assets) to increase in value. Bond prices may fall; however, experts tend to agree that government bonds are relatively safe. Most of your investment assets are now in high-interest government bonds. What would you do?

- Hold the bonds
- Sell the bonds, put half the proceeds into money market accounts, and the other half into hard assets
- Sell the bonds and put the total proceeds into hard assets
- Sell the bonds, put all the money into hard assets, and borrow additional money to buy more

Q4.9 Given the best and worst case returns of the four investment choices below, which would you prefer?

- $200 gain best case; $0 gain/loss worst case
- $800 gain best case; $200 loss worst case
- $2,600 gain best case; $800 loss worst case
- $4,800 gain best case; $2,400 loss worst case

Q4.10 In addition to whatever you own, you have been given $1,000. You are now asked to choose between:

- A sure gain of $500
- A 50% chance to gain $1,000 and a 50% chance to gain nothing

Q4.11 In addition to whatever you own, you have been given $2,000. You are now asked to choose between:

- A sure loss of $500
- A 50% chance to lose $1,000 and a 50% chance to lose nothing

Q4.12 Suppose a relative left you an inheritance of $100,000, stipulating in the will that you invest ALL the money in ONE of the following choices. Which one would you select?

- A savings account or money market mutual fund
- A mutual fund that owns stocks and bonds
- A portfolio of 15 common stocks
- Commodities like gold, silver, and oil

Q4.13 If you had to invest $20,000, which of the following investment choices would you find most appealing?

- 10% in low-risk investments, 40% in medium-risk investments, 50% in high-risk investments
- 30% in low-risk investments, 40% in medium-risk investments, 30% in high-risk investments
- 60% in low-risk investments, 30% in medium-risk investments, 10% in high-risk investments

Q4.14 Your trusted friend and neighbor, an experienced geologist, is putting together a group of investors to fund an exploratory gold mining venture. The venture could pay back 50 to 100 times the investment if successful. If the mine is a bust, the entire investment is worthless. Your friend estimates the chance of success is only 20%. If you had the money, how much would you invest?

- Nothing
- One month’s salary
- Three month’s salary
- Six month’s salary

Financial literacy

Q5.1 Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy

- ❍ More than today with the money in this account
- ❍ Exactly the same as today with the money in this account
- ❍ Less than today with the money in this account

Q5.3 Considering a long time period (for example, 10 or 20 years), which asset described below normally gives the highest return?

- ❍ Savings accounts
- ❍ Stocks
- ❍ Bonds

Q5.2 Do you think that the following statement is true or false? "Bonds are normally riskier than stocks."

- ❍ True
- ❍ False

Q5.4 Normally, which asset described below displays the highest fluctuations over time?

- ❍ Stocks
- ❍ Savings accounts
- ❍ Bonds

Q5.5 When an investor spreads his money among different assets, does the risk of losing a lot of money:

- ❍ Stay the same
- ❍ Decrease
- ❍ Increase

Q5.6 Do you think that the following statement is true or false? "If you were to invest $1,000 in a stock mutual fund, it would be possible to have less than $1,000 when you withdraw your money."

- ❍ True
- ❍ False

Q5.7 Do you think that the following statement is true or false? "A stock mutual fund combines the money of many investors to buy a variety of stocks."

- ❍ True
- ❍ False

Q5.8 Do you think that the following statement is true or false? "After age 70 1/2, you have to withdraw at least some money from your 401(k) plan or IRA."

- ❍ True
- ❍ False

Q5.9 Do you think that the following statement is true or false? "A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less."

- ❍ True
- ❍ False

Q5.10 Suppose you have $100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have in this account in total?

- ❍ Less than $200
- ❍ Exactly $200
- ❍ More than $200

Q5.11 Which of the following statements is correct?

- ❍ Once one invests in a mutual fund, one cannot withdraw the money in the first year
- ❍ Mutual funds can invest in several assets, for example, invest in both stocks and bonds
- ❍ Mutual funds pay a guaranteed rate of return which depends on their past performance
- ❍ None of them

Q5.12 This is an attention filter. Please select 'None of them'.

- ❍ Less than $500
- ❍ Exactly $500
- ❍ More than $500
- ❍ None of them

Q5.13 Which of the following statements is correct? If somebody buys a bond of firm B:

- ❍ He has lent money to firm B
- ❍ He owns a part of firm B
- ❍ He is liable for firm B's debts
- ❍ None of them

Q5.14 Suppose you owe $3,000 on your credit card. You pay a minimum payment of $30 each month. At an annual percentage rate of 12% (or 1% per month), how many years would it take to eliminate your credit card debt if you made no additional new charges?

- ❍ Less than 5 years
- ❍ Between 5 and 10 years
- ❍ Between 10 and 15 years
- ❍ Never

Perfectionism (Evaluation concerns)

Q6.1 If I fail at work/school, I am a failure as a person

- ❍ Strongly disagree
- ❍ Somewhat disagree
- ❍ Neural
- ❍ Somewhat agree
- ❍ Strongly agree

Q6.2 If someone does a task at work/school better than me, then I feel like I failed at the whole task

- ❍ Strongly disagree
- ❍ Somewhat disagree
- ❍ Neural
- ❍ Somewhat agree
- ❍ Strongly agree

Q6.3 If I do not do well all the time, people will not respect me

- ❍ Strongly disagree
- ❍ Somewhat disagree
- ❍ Neural
- ❍ Somewhat agree
- ❍ Strongly agree

Q6.4 The fewer mistakes I make, the more people will like me

- ❍ Strongly agree
- ❍ Somewhat agree
- ❍ Neural
- ❍ Somewhat disagree
- ❍ Strongly disagree

Part 7 Perfectionism (Striving)

Q7.1 I set higher goals for myself than most people

- ❍ Strongly agree
- ❍ Somewhat agree
- ❍ Neural
- ❍ Somewhat disagree
- ❍ Strongly disagree

Q7.2 I have extremely high goals

- ❍ Strongly agree
- ❍ Somewhat agree
- ❍ Neural
- ❍ Somewhat disagree
- ❍ Strongly disagree

Q7.3 Other people seem to accept lower standards from themselves than I do

- ❍ Strongly agree
- ❍ Somewhat agree
- ❍ Neural
- ❍ Somewhat disagree
- ❍ Strongly disagree

Q7.4 I expect higher performance in my daily tasks than most people

- ❍ Strongly agree
- ❍ Somewhat agree
- ❍ Neural
- ❍ Somewhat disagree
- ❍ Strongly disagree