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A Behavioural Perspective on Risk

TD Wealth Behavioural Finance Industry Report, 2021

> Risk profiling is one of the most fundamental aspects of determining a suitable investment solution for an individual. It is also one of the most misunderstood
>
> *– Greg B. Davies, Oxford Risk*

TD Wealth Behavioural Finance Industry Report 2021

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Introduction

Since 2015, TD Wealth has been harnessing the capabilities of behavioural economics to help our clients gain greater insights about themselves and how they make financial decisions. One of the primary applications of behavioural economics at TD Wealth has been the development of a Wealth Personality™ assessment tool utilizing the Five Factor Model of Personality.

This is TD Wealth's second Behavioural Finance Industry Report and includes the results from our Behavioural Risk research study conducted in 2018 and analysis completed in 2019/2020. The objective of the research was to understand how psychological and behavioural factors may impact a person's willingness to take financial and investment risks.

When considering risk, risk capacity (one's objective financial ability to take risk), and risk tolerance (one's psychological or inherent willingness to take risk), is of vital importance to fiduciaries in the wealth management industry. This report will focus exclusively on the psychological and behavioural factors that may impact someone's willingness to take risk and not on risk capacity and objective financial ability.

We are pleased to share the results of this research with those who might find it useful in their ongoing work, including those in the financial services industry, partners, peers, and academics in the field of behavioural economics.

Important caveats when reviewing insights in the report:

1. We are not seeking to imply causality in either direction. Personality may be the cause or the outcome of risk behaviours.

2. TD Wealth does not wish to claim expertise in the field of behavioural economics or behavioural finance, but only to share findings from the data that shed light on possible behavioural patterns that may lead to financial and investment decision-making.

3. The research was conducted on affluent and emerging affluent Canadians (see Methodology) and should not be misapplied to the Canadian general population.

The rest of the report is organized as follows:

- Key Findings
- Literature Review
- Methodology
- Our Study - Detailed Findings and Potential Implications
- Implications for Advisors
- Recommendations for Future Research
- References
- Appendix

The Big Five Personality Traits

Conscientiousness

High conscientiousness is characterized by short-term sacrifice in pursuit of long-term goals. Low conscientiousness is associated with short-term compromise.

LOW HIGH

Agreeableness

High agreeableness suggests a more trusting and cooperative personality. Low agreeableness suggests a more inquisitive and challenging personality

LOW HIGH

Reactiveness

High reactiveness suggests a tendency to respond to emotional stress. Low reactiveness is characterized by calmness and emotional stability.

LOW HIGH

Extraversion

High extraversion is characterized by an outgoing nature and the tendency to seek attention. Low extraversion is indicative of a more reflective personality

LOW HIGH

Openness

High openness indicates a willingness to experiment in pursuit of ideals or higher ambitions. Low openness is indicative of a safer, more pragmatic personality

LOW HIGH

Key Findings

Key Findings

1 Having a goal based financial plan with a professional advisor may help mitigate risky decisions during market downturns

2 Higher self-assessed investment knowledge and experience may signal a preference for higher volatility portfolios

3 Career choice may impact riskier portfolio selection and influence impressions of retirement readiness

Risk Perceptions and Financial Behaviours Differ Across Personality Types

Extraversion: Extraverted individuals may be more likely to assess themselves as being knowledgeable and confident investors. They may also be more likely to think about their portfolio when the stock market is in the news and more likely to be able to stick to their investment strategy during a market downturn.

Conscientiousness: Those who are highly conscientious may be more likely to assess themselves as being knowledgeable and confident investors and be able to stick to their investment strategy during a market downturn. They may also be less likely to have a volatile income or work in a volatile industry and less likely to have had a poor relationship with a financial advisor in the past.

Reactiveness: Reactive individuals may be more likely to have volatile income or work in a volatile industry, but less likely to assess themselves as knowledgeable and confident investors. They may also be less able to stick to their investment plan during a market downturn.

Agreeableness: Those who are agreeable may be less likely to work in a volatile industry or have volatile income and less likely to have had poor relationships with financial advisors in the past.

Openness: Those who are open to experience may be more likely to think about their portfolio when the stock market is in the news and stick to their investment plan during a market downturn. They may also be more likely to assess themselves as being knowledgeable and confident investors.

Additional Findings

While the goal of this report has been to focus on the psychological and behavioural factors that may impact someone's willingness to take risk, there were also numerous findings in the data related to objective factors and risk capacity.

1. **Affluence may be an indicator in preference for portfolio risk**
2. **Significant portfolio declines may be felt more by women and those who are older**

Literature Review

Literature Review

Discussion of Risk Profiling

We believe Greg B. Davies from Oxford Risk best sums up the risk profiling challenge in the wealth management industry. "Risk profiling is one of the most fundamental aspects of determining a suitable investment solution for an individual. It is also one of the most misunderstood" (Davies 2017). Creating an accurate risk profile for a client can be complex and multi-dimensional including such important measurements of risk capacity (one's objective ability to take risk) and risk tolerance (one's behavioural willingness to take risk). These are vastly different components of risk and using both may be important to properly assess a client's risk profile. In the Chartered Financial Analysts Institute report, Risk Profiling and Tolerance: Insights for the Private Wealth Manager (2018), Bob Dannhouser states that "Individuals may have capacity for risk given a healthy level of assets relative to potential future claims on those assets and yet may have very little tolerance for risk taking, given their past experiences, psychological makeup or degree to intimidation from the unknown contours of capital markets."

In 2015, the Ontario Securities Commission (OSC) commissioned a study to obtain a better and more comprehensive understanding of risk profiling in Canada. Their study found that the industry was inconsistently delivering risk assessments. Some of their findings included:

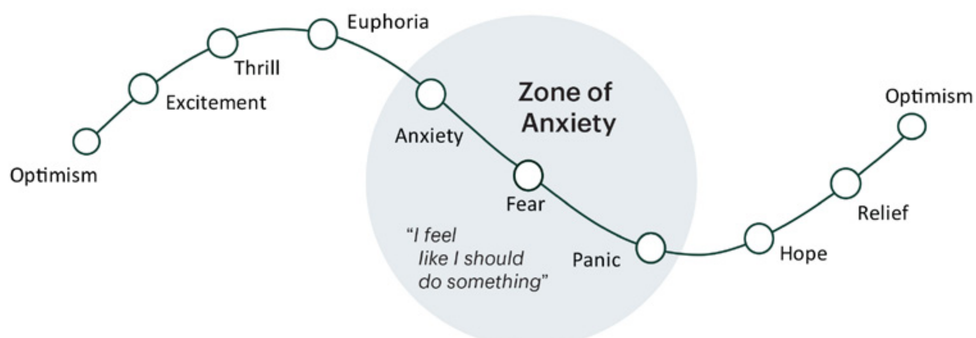
- Only 16.7% of questionnaires reviewed were considered "fit for purpose";
- 64% of questionnaires exhibited two or more of these problems: poorly worded questions, poor scoring models, no ability to handle risk-averse clients; and
- The inconsistency of terminology was evident with every stakeholder – regulators, solution providers, academics, advisors and firms, all of whom used many terms interchangeably or combined multiple sub-factors into a single term.

The OSC study also recognized that, "there are verified techniques using psychometrics that improve the measurement of some psychological or emotional factors like risk tolerance or loss aversion, but they are rarely used by the industry" (Plan Plus for the OSC, 2015).

Importance of Psychological and Behavioural Factors

Not all investors with the same objective characteristics (i.e. financial risk capacity) will prefer the same investment portfolio. How a person individually views risk plays an important role in determining a client's portfolio for the long term. Many individuals live in the present and react to market downturns. As human beings, we can become anxious during downturns in the market cycle, so we may believe we should sell investments in an attempt to gain personal comfort and reduce our anxieties. Essentially, we are driven to do what makes us feel better. However, the decision to be emotionally comfortable can come at the expense of potential long-term gains.

Decisions like these occur during what Davies (2017) calls the 'Zone of Anxiety'. Understanding a client's tolerance for risk helps advisors identify the client's willingness to trade off risks and returns of long-term outcomes, and therefore is essential in helping create portfolios that match their clients' individual level of risk (Davies 2017).



Klement (2018) also echoes this idea of distinguishing between objective and behavioural components of risk. Risk capacity involves more objective measures such as economic circumstance, investor's time horizon, liquidity needs, income, and wealth. It is relatively immune to psychological distortion or subjective perception. Klement (2018) further states that "risk aversion may be understood as the combination of the psychological traits and emotional responses that determine the investor's willingness to take financial risk and the degree of psychological or emotional pain the investor experiences when faced with financial loss."

Based upon the agreement of these researchers and the OSC, that behavioural and psychological factors may play a critical role in determining a client's risk profile, we sought to undertake preliminary research into this area. Thus, the central factors under investigation in the current research are psychological factors (i.e. personality), behavioural factors, and their relation to risk.

Personality Traits and Risk Behaviour

When considering personality traits, research has shown that many of the Five Factor Model of Personality dimensions, or personality traits, are related to risk preferences and investment decisions. Below we break down the findings from past research by trait.

Extraversion:

High scores on the extraversion trait are linked to high risk taking propensity overall and in the financial domain (Nicholson et al. 2005). High levels of the extraversion trait supply the motivational force (i.e. sensation seeking) behind risk taking. This is consistent with other work that also concludes that extraversion predicts risk taking (Soane et al. 2005).

In terms of types of investments, Mayfield and co-authors (2008) found that people who scored high on the extraversion trait tended to report greater intentionality to engage in short-term investments. Similarly, Oehler and co-authors (2018), conducted research to determine the investing behaviours of self-directed investors. They found that more extraverted individuals pay higher prices for financial assets and buy more financial assets when assets are overpriced. The researchers attributed the observed behaviour to higher risk-taking propensity of more extraverted individuals.

Conscientiousness:

Soane and co-authors (2005) conclude that the conscientiousness trait is associated with risk aversion. Similarly, in another study, low scores on the conscientiousness trait were linked to higher risk-taking propensity, both overall and in the financial domain (Nicholson et al. 2005). The authors suggest that low levels of the conscientiousness trait reduce the cognitive barriers, like a need for control, to engage in risky behavior.

Reactiveness:

Nicholson and co-authors (2005) found that lower scores on the reactiveness trait were linked to higher risk-taking propensity as it provides insulation against concerns, like anxiety and guilt, related to the negative consequences of taking risks. In other words, those who have a reactive personality have a lower risk taking propensity in part due to concerns about the potential negative consequences of investments.

Regarding the investment behavior of reactive investors, Oehler and co-authors (2018) found that those high on the reactiveness trait sold financial assets at lower prices, made more sales when financial assets were underpriced, and held less risky assets overall. The authors suggest that this is due in part to greater pessimism and fear amongst reactive individuals. Further, individuals who scored high on the reactiveness trait were found to be averse to short-term investments (Mayfield et al. 2008).

Agreeableness:

Low scores on the agreeableness trait have been linked to a higher propensity to take risks overall and in the financial domain (Nicholson et al. 2005). The researchers suggest that low levels of the agreeableness trait provide insulation against the guilt or anxiety related to the negative consequences of risk taking. However, other research studies find no relationship between the trait of agreeableness and investment decisions (Mayfield et al. 2008).

Openness:

Openness to experience has been linked to higher risk taking propensity overall and in the financial domain (Nicholson et al. 2005). The authors posit that the personality trait of openness to experience provides the motivation to take risk. Consistent with this notion, De Bortoli and co-authors (2019) found that individuals who have a greater risk tolerance and have a high degree of the openness to experience trait had the greatest probability of taking higher levels of risk in their investment making decisions. Finally, Mayfield and co-authors (2008) found that those who scored high on the openness to experience trait were more likely to engage in long-term investing.

Behaviour, Individual Factors, and Risk Taking

Winchester, Huston and Finke (2011) found that clients who had a written financial plan were less likely to move investments away from equities during the financial crisis of 2008. The authors concluded that after a long-term portfolio is established, an advisor can help a client maintain their equity allocation by reducing anxiety and reminding clients of their long term investing goals.

Several researchers have found links between the willingness of a person to take financial risk and financial literacy, investing experience, and past experiences. “Lack of experience, financial literacy, or even age-related cognitive decline can reduce a client’s ability to temper emotional response to risk” (Plan Plus for the OSC, 2015). The authors go on to state that more financially literate individuals are consistently more willing to accept financial risk.

Risk propensity differs markedly in its distribution across job types and business sectors. (Nicholson et al. 2005). Their research across 6 different risk domains (recreation, health, career, finance, safety, and social risk), found that people working in Human Resources, Public Relations, Communications and Finance roles have lower reported risk taking in most risk domains and an overall lower risk propensity than people working in other functions. Consultants were found to be the greatest risk takers. Nicholson and co-authors (2005) also suggested that there must be some degree of business sector condition citing examples such as; those in the arts and media rated themselves as high risk takers only in the health domain and those working in the finance sector were risk takers only in the finance domain.

The Need for Behavioural Coaching & Risk Assessment Tools

“No matter how good a questionnaire is, practitioners should always be aware that in the ‘heat of the moment’ clients tend to deviate from their previously established risk profile.” (Klement 2018)

Therefore, a questionnaire that also utilizes psychological or behavioural measurement tools to assess risk tolerance could measure an investor’s stable and well-reasoned willingness to take risk over the long term in addition to predicting their reactions to various contexts, or their perceptions and attitudes towards risk. These emotional reactions to risk should guide the investment advice provided by the advisor over the course of the relationship and during times of financial stress (Davies 2017). If these behaviours go unchecked, it could be to the detriment of the client’s long-term goals.

Techniques to asses risk attitudes may include both psychometric instruments, such as the TD Wealth Personality™ assessment, in addition to observing client behaviour. These attitudes and behaviours can then be used to help build a rich profile of financial and investing blind spots which could help an advisor coach their clients to engage in better behaviours on their investing journey in both the short and long term.

Methodology

An online survey was conducted by TD Wealth in September 2018 and fielded by Maru Group in English and in French with geographic distribution across Canada. The final sample size was n=2,088. Respondent breakdown as follows:

Gender*	Female	64%
	Male	36%
Affluence:	Mass Affluent ($100,000 - $750,000 in Investable Assets)	80%
	High Net Worth (>$750,000 in Investable Assets)	15%
	Emerging Affluent (25-34 years of age + >$100,000 HH Income)	5%
Age:	18-34	9%
	35-54	21%
	55+	70%

The TD Wealth Analytics team, Lorenzo Cecutti, and Laura Goodyear from Behavioural Economics in Action at Rotman (BEAR), from the Rotman School of Management at the University of Toronto, analyzed the data in 2019/2020. The study was not longitudinal. As with TD Wealth's first study, no conclusions can be drawn regarding the movement through life stages and its implication for wealth, financial behaviours or risk.

Selected questions and tables from the research questionnaire are included in the Appendix.

All respondents completed the 50-item IPIP representation of the Goldberg (1992) markers for the Big-Five factor structure, an evaluative psychological framework that assesses five dimensions of personality: Conscientiousness, Agreeableness, Reactiveness, Extraversion, and Openness. The Five Factor Model questionnaire is also used at TD Wealth as part of the Wealth Personality™ assessment.

*With respect to Gender, respondents were asked the following question: What gender do you most identify with? (Female/Male). As such, the researchers recognize and would like to highlight the limitations of the data to provide behavioural finance commentary or analysis with respect to gender identity.

Our Study

Detailed Findings & Potential Implications

Our Study –

Detailed Findings & Potential Implications

While the goal of this report has been to focus on the psychological and behavioural factors that may impact someone's willingness to take risk, there were also additional findings in the data related to objective factors and risk capacity. The findings are presented below as follows:

General Findings

Risk Perceptions and Financial Behaviours Differ Across Personality Types

Additional Findings

General Findings

1. **Having a goal based financial plan with a professional advisor may help mitigate risky decisions during market downturns**

    - Less than half of affluent Canadians have a goal based financial plan.
    - However, those with a plan were 2x more likely to stick to their plan during a market crisis if that plan was made with a financial advisor vs those who did not.

> Implications: This is consistent with findings from Winchester, Huston and Finke (2011) who found that clients who have a written financial plan were less likely to move investments away from equities during the 2007/2008 financial crisis. Our findings suggest that having a financial plan is something that affluent Canadian's could benefit from, but few have. This highlights that advisors could deliver more value to their clients beyond investment management. Preparation of a goal-based plan and helping clients manage emotions during market turbulence could go a long way towards achieving their retirement goals.

2. **Higher self-assessed investment knowledge and experience may signal a preference for higher volatility portfolios**

    - Survey respondents that claim to be a knowledgeable and confident investor are 3½ x more likely to prefer a more volatile portfolio (that is a portfolio that is likely to lose money in multiple years but offers the potential of higher long-term growth), than those who do not.

> Implications: This is consistent with the findings from previous studies noted in our literature review that found knowledgeable investors tend to be more risk-taking. Choosing a more volatile portfolio is a trade-off between risk and reward, and a confident investor may not have the personality or capacity to manage the potential for loss. Believing oneself to be knowledgeable and confident regarding investing does not necessarily make someone a good or profitable investor. In fact, these individuals may just have overconfidence bias. Overconfidence bias is a tendency to hold a false and misleading assessment of one's skills, intellect, or talent. Overconfidence may also lead to procrastination or a lack of attention to other wealth planning elements, like insurance and estate planning. This is consistent with the findings of Svenson (1981), who found that overconfidence may lead to the belief that one is more skilled than the average person and therefore better able to navigate or avoid negative situations, and this may lead to errors in judgment with respect to the degree or need for risk mitigation strategies.

3. **Career choice may impact riskier portfolio selection and influence impressions of retirement readiness**

   Those in the study who had a volatile income or worked in a volatile industry were:

   - 2.5x morely likely to select a volatile portfolio (that is a portfolio that is likely to lose money in multiple years but offers the potential of higher long-term growth), than one that is slower and steady and unlikely to lose money in any one year, but unlikely to show much long-term growth.

   - 4x less likely to say they were very satisfied with their readiness for retirement than those in less volatile careers.

   - Additionally, younger respondents (18-34) were nearly 2x more likely than those who are middle aged and nearly 3x more likely than those who are older (over 55) to have a volatile income or work in a volatile industry.

> Implications: A volatile income or industry may be linked to riskier decision making with respect to portfolio selection or trading behaviours, which is consistent with findings from past research (Nicholson et al. 2005). This additional risk taking behaviour coupled with a volatile income could then explain why this group is less likely to feel that they will be retirement ready.
>
> Many younger Canadians in this study had a minimum household income of >$100,000 or had >$100,000 in investable assets, but still said they work in an industry or have a job with a volatile income. In other words, although this younger cohort may have investments and not necessarily in the lower income bracket, they may still feel like their career or industry could be considered risky. As younger Canadians enter the workforce this potential instability may be a result of the younger generation working in contract positions and may result in different financial planning challenges than advisors have seen in the past.

Risk Perceptions and Financial Behaviours Differ Across Personality Types

The results presented below are based on a correlation analysis and thus we do not conclude that these variables have a cause and effect relationship. All results presented here represent a statistically significant relationship between a given personality trait and the behavioral variables of interest.

Extraversion

In our study, those who were Extraverted were:

- More likely to assess themselves as being a knowledgeable and confident investor;
- More likely to think about their portfolio when the stock market is in the news; and
- More likely to be able to stick to their investment strategy during a market downturn.

Implications: These results are consistent with Nicholson and co-authors (2005) and, Soane and co-authors (2005) who concluded that the personality trait of extraversion predicts greater risk taking. These findings could suggest that those high in the extraversion trait are more likely to be self-directed investors who are engaged in their own portfolio management. Additionally, while those higher in the extraversion trait stated that they were knowledgeable and confident investors, research has found that extraversion may also be linked to overconfidence (Schaefer et al. 2004). This could suggest that highly extraverted investors may require additional guidance from advisors.

Conscientiousness

In our study, those who were Conscientious were:

- Less likely to have a volatile income or work in a volatile industry;
- More likely to assess themselves as being a knowledgeable and confident investor;
- More likely to think about their portfolio when the stock market is in the news;
- Less likely to have had a poor relationship with a financial advisor in the past; and
- More likely to be able to stick to their investment strategy during a market downturn.

Implications: Given that people who score higher on the conscientiousness trait are also more likely to have a goal based financial plan with an advisor, the above results seems logical (TD Wealth Behavioural Finance Industry Report, 2019). Our findings suggest that when conscientious investors make investments, they can stay the course during market turbulence, which may be due in part to their financial knowledge and/or their relationship with their advisor who proactively coaches them during a market downturn to help manage discomfort and stick with their plan.

Reactiveness

In our study, those who were Reactive were:

- More likely to have a volatile income or work in a volatile industry;
- Less likely to assess themselves as a knowledgeable and confident investor;
- More likely to think about their portfolio when the stock market is in the news;
- More likely to have had poor relationships with financial advisors in the past; and
- Less likely to be able to stick to their investment plan during a market downturn.

Implications: Our findings are consistent with the findings of Oehler and co-authors (2018) who found that reactive investors sold financial assets at lower prices and made more sales when financial assets were underpriced. An individual who is reactive may need additional advisor coaching and support as they are more likely to become anxious or nervous during market turbulence given they feel less confident in their investment knowledge. These factors could also contribute to their negative past experiences with financial advisors.

Agreeableness

In our study, those who were Agreeable were:

- Less likely to work in a volatile industry or have a volatile income; and
- Less likely to have had poor relationships with financial advisors in the past.

Implications: People who are agreeable tend to value social harmony and 'go with the flow'. While past research by Nicholson and co-authors (2005), suggests that agreeable individuals have a lower risk propensity, our findings regarding agreeableness suggest no relationship with risk taking behaviors. These differences may be due in part to the sample and the methodological features of the two studies. Agreeableness, however, may provide future insights related to the advisor-client relationship. For instance, those who are highly agreeable may be more unlikely to raise issues or concerns and may agree with recommendations despite their concerns (TD Wealth Behavioural Finance Industry Report, 2019).

Openness

In our study, those with Openness to Experience were:

- More likely to assess themselves as being a knowledgeable and confident investor;
- More likely to think about their portfolio when the stock market is in the news; and
- More likely to stick to their investment plan during a market downturn.

Implications: Consistent with Mayfield and co-authors (2008) who found that those high on the openness trait were more likely to engage in long-term investing, we similarly find that these individuals are also more likely to stick with their investments during downturns. Openness may also provide valuable insight into the client-advisor relationship. For example, those who score lower on the openness trait may be more conventional and conservative and thereby may value more traditional investment strategies (TD Wealth Behavioural Finance Industry Report, 2019).

Additional Findings

1. **Affluence may be an indicator in preference for portfolio risk**

    - Those in the study who were Mass Affluent (investable assets worth $100,000 to $750,000), were 64% more likely than High Net Worth respondents (investable assets $750,000+), to choose a slow and steady portfolio that is unlikely to lose money in any one year, but unlikely to show much long-term growth.

Implications: The primary difference between a Mass Affluent and High Net Worth individual is quantity of assets and therefore potential to reach retirement and other financial goals. A Mass Affluent person may be thinking “Can I retire?”, whereas a High Net Worth person may say “How will I manage my money tax efficiently?” A Mass Affluent individual may in fact then choose a less risky portfolio because they feel they have more to lose due to limited risk capacity. There is no evidence however that a Mass Affluent individual has a lower risk tolerance.

2. **Significant portfolio declines may be felt more by women and those who are older**

    - Men were 1½ times more likely to feel comfortable with a large decline in their portfolio (greater than 15% decline), than women.

    - Those who are middle age (35-54) were most likely to feel comfortable with a significant decline (17%), whereas older (55+) were less so (9%).

Implications: This finding is consistent with past research that finds that women are more risk averse than men (Byrnes, Miller, and Schafer 1999). This finding is also consistent with the TD Wealth Behavioural Finance Industry Report (2019) whereby women were higher on the reactiveness trait than men. Our results regarding age are also consistent with past work that finds financial risk aversion decreases as individuals get older, but only up to age 65 when risk aversion begins to increase (Riley Jr. and Chow 1992). Middle age respondents in our study may be more likely to have lived through a few market cycles and with smart guidance from an advisor, and they may have more confidence in their portfolio given that they know their retirement time horizon is many years away and their advisor has built their portfolio to weather the storm.

Implications for Advisors

Implications for Advisors

The value of evaluating client risk

The role of an experienced advisor who goes the extra mile to understand the psychological and behavioral factors of a client's individual risk tolerance can be equally as important as the awareness of their risk capacity. Overconfident, highly extraverted investors could prove to be challenging as they may state they are very willing to embark on highly volatile investment but have neither the capacity nor tolerance to do so. Advisors may want to remind these clients that while these risky investments have potential upside, they may also hold future downsides. Gaining a full understanding of the client's risk tolerance using evaluative techniques or risk questionnaires may help minimize the chances that the client is holding a portfolio that is outside of their risk tolerance.

You owe it to your clients to provide them a goal based plan

Shockingly, over half of Canadians in our study with greater than $100,000 of investable assets did not have a plan. Additionally, those who had a plan with an advisor were 34% more likely to be very satisfied with their retirement readiness than those with no plan at all. Given the sizable benefits to the client, the preparation of goal based plan with objectives, time horizons and action steps for tracking should be a fundamental part of a strong advisory practice. Not only could it increase savings and readiness for retirement, it may also mitigate risky decisions during market downturns. The ability for a client to focus on the "why" of their investment strategy can be a very powerful motivator. During the planning process an advisor can educate their client on the balance of risk and reward within the context of their own risk capacity and risk tolerance. Goal based planning becomes the foundation for the future, creating the necessary focus on progress to goals and not only portfolio performance.

Take note of your client's career, it may help you understand their risk tolerance

Our study found that those who work in volatile industries or have a volatile income were more likely to select a volatile portfolio. They were also more likely to be highly reactive and less conscientious (lower conscientiousness is associated with lower self-discipline, planning and order). As an advisor, the preparation of a plan with action steps and tracking, plus regular behavioural coaching could be vitally important. Those who work in volatile industries or have a volatile income are in critical need of the valuable guidance from a professional advisor. Particularly as they are 55% less likely to say they were very satisfied with their readiness for retirement, likely due in part to costly blunders made as a result of their career and personality traits.

Invest in your clients' education

Advisors have a critical role in helping educate their clients and increasing their investment knowledge. They can help clients understand the trade-off required by reduced probability of meeting goals or having to cut back on current lifestyle to save more (Plan Plus for the OSC 2015). In our study, people who scored higher on the reactiveness trait also scored lower on their self-assessed investment knowledge and experience. All clients, and not just those who are highly reactive, can benefit from increasing their investment knowledge. An advisor is uniquely positioned to provide factual education to help their clients navigate wealth management as well as short-term market events when the relationship between risk and reward is most salient.

No one ever said they wanted behavioural financial coaching – however many of your clients could benefit

Many good advisors coach clients to avoid behaviours that might be detrimental to their long-term goals, such as wanting to sell when the market is down or paying too much for a stock when the market is up. At these times the advisor may feel more like a financial therapist than a financial advisor. Helping their clients feel more emotionally comfortable with their portfolio is essential as these types of behavioural errors could become costly for the future. This is true particularly for people who are higher on the reactiveness trait. As our study shows, they were more likely to work in a volatile industry or have volatile income and less able to stick to their plan during a downturn. Clients with these personality traits may be particularly susceptible to panic and anxiety as markets decline or even when they are experiencing a financially stressful period in their life. Advisors can have a constructive conversation with their clients, reminding them that a portfolio has been created specifically towards achieving their goals, at their risk capacity and risk tolerance and that will help weather the storm of market cycles over the long term.

Recommendations for future research

This research study only scratches the surface on the work that needs to be done to fully understand client risk profiles and the importance of behavioural factors. It also highlights how much more needs to be done to create, research and implement tools that align a client's inherent risk to their goals.

Below, we recommend a few interesting research questions from our data which invites further investigation.

First, in our study, respondents that preferred a portfolio with higher volatility (and thus greater potential for losses) were also less tolerant of financial losses than investors who prefer lower volatility. Therefore, future research may want to investigate why investors who appear more confident overestimate their ability to withstand psychological and financial loss when making investment decisions. Below we provide two potential hypotheses:

1. More prudent investors that have greater risk tolerance and capacity for risk but are fearful of investing and may overestimate the psychological impact of financial losses leading them to be overly cautious in their investments.

2. Investors who appear more confident and report higher willingness to hold riskier positions are overestimating their psychological and financial ability to withstand losses and may need more careful and cautious advice from advisors.

Second, this research also finds that several different personality traits are related to individuals seeing themselves as being knowledgeable and confident investors. However, it is less clear if these individuals are actually knowledgeable investors, or simply overconfident in their investing abilities. As such, future research may want to examine how the Big-Five is related to actual investment knowledge as this could have implications for investors risk capacity and tolerance.

Finally, our research suggests that advisors can play a very important role in managing and coaching investors through market fluctuations and investment decisions. However, it is less clear from the current work what attributes contribute to clients sticking with a plan. For example, we find that those high on the conscientiousness trait are more likely to stick to a plan during market downturns. We also find that these conscientious individuals are also more likely to have good relationships with their advisors and be knowledgeable and confident investors. Future research may want to investigate how aspects of an individual's behavior, personality, and relationship with their advisor interact and contribute to producing healthy financial behaviours.

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Appendix

Selected questions from survey

1. **Retirement readiness: With respect to saving for your retirement years, how satisfied are you with the financial position you presently are in?**

☐ very satisfied ☐ somewhat satisfied ☐ not very satisfied ☐ not at all satisfied

2. **Volatile income/industry: My income (or the industry I work in) is more volatile than average**

☐ very inaccurate ☐ somewhat inaccurate ☐ neither ☐ somewhat accurate ☐ very accurate

3. **Having a plan: Do you have a detailed written plan that specifies the personal financial goals you want to achieve and the actions you should take to achieve your goals?**

☐ Yes, a plan I developed with the help of an advisor

☐ Yes, a plan I developed on my own without the help of an advisor

☐ No, I do not have a detailed written personal financial plan

4. **Sticking to plan: I had significant amounts of money in the market during the last market crash, and was able to stick to my investment plan**

☐ very inaccurate ☐ somewhat inaccurate ☐ neither ☐ somewhat accurate ☐ very accurate

5. **Advisor confidence: How would you describe your level of confidence in your advisor's abilities?**

☐ very confident ☐ somewhat confident ☐ not very confident ☐ not confident at all

6. **Portfolio risk spectrum: Over a 10-year period, where do you fall on this spectrum of portfolios?**

☐ 1 - Slow and Steady portfolio, that is unlikely to lose money in any one year, but unlikely to show much long-term growth. ☐ 2 ☐ 3 ☐ 4 ☐ 5 - A volatile portfolio, that is likely to lose money in multiple years but offers the potential of higher long-term growth.

7. **Nervousness of portfolio decline: Assume you have X (where X = the value of their own portfolio) in your personal investment portfolio. How much of a decline could you withstand before you would start to feel nervous?**

☐ 1% ☐ 5% ☐ 10% ☐ 15% ☐ 20%

Data Table #1: General Findings (September 2018)

		Total	Male	Female	18-34	35-54	55+	EA	MA	HNW
1	**Retirement readiness**									
	Not at all satisfied	2%	2 %	3 %	6 %	2 %	2 %	5 %	2 %	1 %
	Not very satisfied	9%	8 %	12 %	16 %	12 %	8 %	14 %	10 %	2 %
	Somewhat satisfied	50%	50 %	51 %	54 %	59 %	47 %	57 %	53 %	34 %
	Very satisfied	38%	40 %	34 %	24 %	27 %	43 %	24 %	34 %	63 %
2	**Volatile Income/Industry**									
	Very inaccurate	29 %	28 %	32 %	21 %	25 %	32 %	25 %	30 %	23 %
	Somewhat inaccurate	23 %	23 %	22 %	19 %	26 %	23 %	21 %	24 %	20 %
	Neither	30 %	30 %	28 %	28 %	22 %	32 %	26 %	30 %	32 %
	Somewhat accurate	13 %	13 %	13 %	19 %	20 %	9 %	18 %	12 %	15 %
	Very accurate	5 %	6 %	5 %	12 %	7 %	4%	10 %	4%	10%
3	**Having a plan**									
	Yes, with an advisor	32 %	30 %	34 %	26 %	28 %	34 %	27 %	33 %	32 %
	Yes, on my own	16 %	16 %	16 %	29 %	19 %	13 %	25 %	15 %	20 %
	No plan at all	53 %	54 %	51 %	45 %	53 %	53 %	48 %	52 %	48 %
4	**Sticking to plan**									
	Very inaccurate	16 %	13 %	20 %	26 %	12 %	15 %	27 %	15 %	8 %
	Somewhat inaccurate	12 %	11 %	14 %	11 %	14 %	12 %	14 %	13 %	6 %
	Neither	20 %	20 %	22 %	35 %	28 %	16 %	33 %	22 %	9 %
	Somewhat accurate	31 %	32 %	29 %	16 %	28 %	34 %	18 %	31 %	37 %
	Very accurate	21 %	24 %	15 %	12 %	18 %	23 %	8 %	19 %	40 %
5	**Advisor confidence**									
	Not confident at all	1 %	1 %	0 %	0 %	1 %	0 %	2 %	0 %	1 %
	Not very confident	3 %	3 %	1 %	6 %	3 %	2 %	5 %	2 %	3 %
	Somewhat confident	39 %	39 %	39 %	43 %	50 %	37 %	51 %	42 %	38 %
	Very confident	57 %	57 %	60 %	51 %	46 %	61 %	42 %	56 %	58 %
6	**Portfolio risk spectrum**									
	1 - slow and steady	10%	9%	12%	9%	4%	12%	7%	11%	4 %
	2	22%	20%	24%	18%	14%	24%	15%	23%	16%
	3	37%	36%	40%	33%	34%	39%	33%	37%	38 %
	4	26%	30%	20%	28%	38%	23%	33%	25%	33 %
	5 - Volatile	5%	6%	4%	13%	10%	3%	11%	4%	9 %
7	**Retirement readiness**									
	First sign of decline	5 %	4 %	7 %	5 %	2 %	6 %	4 %	6 %	4 %
	0-5%	31 %	26 %	39 %	29 %	23 %	33 %	26 %	33 %	19 %
	5-10%	34 %	35 %	32 %	32 %	35 %	34 %	36 %	34 %	29 %
	10-15%	19 %	21 %	17 %	22 %	23 %	18 %	22 %	18 %	26 %
	15% or higher	11 %	14 %	5 %	12 %	17 %	9 %	12 %	9 %	22 %

Data Table #2: Correlation Personality Traits & Behavioural Risk Items (September 2018)

		1	2	3	4	5	6	7	8	9	10
1	Extraversion	-									
2	Conscientiousness	.14**	-								
3	Reactiveness	-.27**	-.26**	-							
4	Agreeableness	.32**	.20**	-.20**	-						
5	Openness	.35**	.24**	-.14**	.29**	-					
6	Volatile Industry	.02	-.11**	.11**	-.12**	-.05*	-				
7	Knowledgeable & Confident Investor	.17**	.17**	-.13**	.00	.17**	.08**	-			
8	Think About Stocks When in the News	.06*	.07**	.08**	.04	.11**	.11**	.29**	-		
9	Poor Relationship with Advisor	-.03	-.11**	.10**	-.15**	.04*	.14**	.07**	.15**	-	
10	Stick to Plan During Market Downturn	.05*	-.06*	.11**	.02	.09**	.08**	.45**	.30**	.04	-
	M	30.52	22.93	33.40	22.92	23.43	3.58	2.80	2.79	3.38	2.70
	SD	7.67	5.87	7.72	6.22	5.98	1.19	1.16	1.19	1.27	1.34

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).