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Research paper

Big Five Personality Traits and Financial Risk Tolerance among Retail Investors: A Systematic Literature Review

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Abstract

Purpose: This paper studies the impact of Big Five personality traits on the financial risk tolerance of retail investors. The big five taxonomy model includes dimensions of neuroticism, agreeableness, openness to experience, conscientiousness, and extraversion traits. These traits can change the risk tolerance level of individuals in terms of their investment decisions. This paper analyses all the research conducted on this relationship. The stockbrokers and fund managers can benefit from the results as they advise on personalized investment strategies and risk management practices. These drivers also impact broader market trends and lead to instabilities. So, this study is crucial for financial advisors, investors, and policymakers.
Design/methodology/approach: The author has conducted a systematic literature review to identify existing relevant work from various authors who have studied the relation between Big Five personality traits and risk tolerance in retail investors. This paper includes literature from 2000 to 2025. Most authors have used a survey to calculate personality traits and risk tolerance; few have used buying and selling data.
Findings: The findings show a significant impact of personality traits on investors' investment decisions and risk-taking behaviour. Most of the traits have a significant relation and a few have an insignificant relation with the financial risk tolerance of retail investors.
Practical implications: Retail investors should make investment decisions after taking into account the influence of personality traits and their risk tolerance. The financial advisers can analyse this relation in terms of clients and then advise them accordingly.
Social implications: All types of investors can gain insight into the relationship between the personality traits of individuals and their risk tolerance levels.
Originality/value: The interrelation of Big Five taxonomy with the risk tolerance of retail investors and the research gap has been identified.

Keywords: *Big Five Personality Traits; Neuroticism; Agreeableness; Openness to Experience; Conscientiousness; Extraversion; Financial Risk Tolerance; Retail Investors.*

1. Introduction

Traditional finance theories assumed that markets are efficient and that an investor is rational in making decisions. With the development of behavioural finance and the prospect theory, psychological factors were considered important in influencing financial decisions, and investors were considered slightly irrational in their investment decisions (Kahneman & Tversky, 1979). Investment decisions depend on an awareness of financial risk tolerance and personality factors since they so greatly affect investor behaviour and the decision-making process. There is increasing recognition of its importance, which has led to many studies exploring how investors' personality traits affect their choices and level of risk tolerance.
Market dynamics or personal situation could cause an investor's risk tolerance to vary with time (Grable, 2000). Unbalanced portfolios resulting from significant share market gains could expose one to more risky assets (Daryanani, 2008). Maintaining appropriate risk levels and guaranteeing conformity with investing strategies depend on regular portfolio rebalancing (Peternel & Bukvič, 2024). Financial behaviours are much shaped by personality qualities, especially those described in the Big Five model (Durand et al., 2008): openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. Analysing these personality aspects helps researchers and financial advisers to better understand investor behaviour, hence producing more individualised and successful investment plans. Developing customised plans that satisfy investor demands and advance financial well-being depends on combining knowledge of financial risk tolerance and personality attributes into investment research (Pak & Mahmood, 2015).
Understanding retail investors' decision-making process requires an awareness of the elements influencing financial risk tolerance. An individual's tolerance to financial risk is their readiness to participate in financial activities with different degrees of uncertainty and possible loss. Examining personality traits is one important area of study in this field, especially by using the Big Five personality traits. Rodrigues

and Gopalakrishna (2024), for example, examined how these characteristics affected financial risk tolerance across several generations. The research found that an investor's risk tolerance is significantly influenced by openness, extraversion, and neuroticism. They also concluded that millennials and Generation Z show more risk tolerance compared to Generation X and baby boomers.

This systematic literature review aims to give a thorough knowledge of how these personality factors affect risk-taking behaviours in financial environments by aggregating results of several studies, therefore providing insightful analysis for legislators, financial advisers, and investors.

Starting with the meaning of "investors", SEBI defines "Retail Individual Investor" as investors who apply or bid for securities for a value of not more than Rs. 2,00,000. Besides RIIs, there can be two other types of investors: Qualified Institutional Buyers (QIBs) and Non-Institutional Investors (NIIs). QIBs include mutual funds, venture capital funds, and foreign venture capital investors registered with SEBI, foreign institutional investors, sub-accounts registered with SEBI, public financial institutions, scheduled commercial banks, insurance funds, etc. Investors who do not fall within the definition of the RIIs and QIBs are categorized as NIIs. There has been more focus by SEBI on the retail investor. The reason beings.

1) Democratising markets by bringing in retail investors is helpful in better corporate governance.
2) Retail domestic investors are not characterised by the unstable and unusual activities of large domestic speculators and FII's.
3) A sluggish primary or IPO market can be activated by the presence of retail investors.
4) At the macroeconomic level, to redirect savings of individuals from unproductive physical investments to financial savings, which either directly or through intermediaries like mutual funds go to finance productive investments. (Chandrasekar et al., 2016)

Individual investors played a key role in driving this surge in trading activity, accounting for more than one-third of the total turnover in the year 2023-24. There was a growth in trading activity in the equity cash segment, with the highest ever registered cumulative turnover of Rs. 217 lakh crore. On average, 110 lakh individual investors carried out trades in the cash segment at NSE, compared to 88 lakh investors during 2022-23. Though net investment by individual investors, as a category, was negative during the fiscal year at Rs 0.5 lakh crore, it was outweighed by their investments through mutual funds (especially SIPs). There had been continuing growth in investment through SIPs, with annual net SIP flows doubling from Rs. 0.96 lakh crore in 2020-21 to Rs. 2 lakh crore in 2023-24. Individual investors remained active in the equity derivatives segment as well. (SEBI, Annual Report 2023-24).

With the increasing usage of trading applications, the availability of educational resources, and guidance for financial markets, the capital markets have become easily accessible. (Economic survey, 2023-24). Due to digitization and technological advancements, the demat accounts in India have quadrupled from 2020 to 2024, and mutual fund investors have more than quadrupled from 2014 to 2024. This retail investment boom reflects how investors view the investment market in India. (Lancelot Joseph, Business Today, Oct. 2024). The equity cash segment has a 35.9% share from retail investors in the year 2023-24. The increasing investor registrations are due to many factors, including government measures for financial inclusion, growing digital infrastructure, low-cost brokerages, the search for generating income from alternatives, and decreasing returns from the traditional investment options like real estate and gold. (The Hindu, July 22, 2024).

Financial risk tolerance is the inclination to engage in actions in which the outcome remains uncertain, with the possibility of a noticeable adverse result. Risk tolerance represents a person's orientation towards taking risks to achieve their investment objectives. The higher the expected returns from an investment, the more risks are associated with it. The attitude towards taking risks determines an investor's portfolio allocation of their financial resources into 'low risk' savings accounts/ bonds or 'high risk' stocks/ derivatives trading. The Big Five personality traits have been linked to varying levels of financial risk tolerance (FRT), i.e., an individual's willingness to purchase investments with uncertain outcomes (Grable, 2000). The influence of these five personality traits on financial risk tolerance can be summarized as follows:

1) Openness to Experience: It has been found to correlate with higher risk tolerance, as these individuals are in quest of new and uncertain opportunities, including high-risk investments (Oehler et al., 2018). There is increased willingness to take risks, as open individuals are more likely to seek novel and diverse experiences, including in financial matters.
2) Conscientiousness: It implies reliable, punctual, deliberate, self-disciplined, and competent aspects of an individual's personality (Mathur & Nathani, 2019). It is typically associated with lower risk tolerance due to its focus on planning, organization, and risk aversion (Durand et al., 2008).
3) Extraversion: Extraverts, characterized by sociability and assertiveness, often exhibit higher levels of risk tolerance, driven by their comfort with uncertainty and desire for excitement (Nicholson et al., 2005). Often correlated with higher risk tolerance, as extraverted individuals are considered to be more assertive, energetic, and willing to engage in risk-taking behaviours.
4) Agreeableness: In contrast to extraversion, agreeableness tends to correlate with lower risk tolerance, as agreeable individuals may prioritize cooperation and avoid aggressive or risky decisions (Fenton-O'Creevy et al., 2018). The relationship with risk tolerance varies, but agreeable individuals may lean towards risk aversion due to a preference for harmony and avoidance of conflict.
5) Neuroticism: It encompasses emotional instability and anxiety and is typically linked to low risk tolerance, as these individuals are more sensitive to the potential for losses (Gambetti & Giusberti, 2012). Strongly associated with risk aversion, neurotic individuals are more likely to experience fear, leading to cautious financial behaviour.

Understanding the association between investors' big five personality traits and financial risk tolerance is pivotal for financial advisors, investors, and policymakers. Financial advisors give personalized advice on investment strategies and risk management practices. The intersection of personality psychology and financial decision-making has garnered significant academic interest. The motive behind this research is to review and consolidate existing studies on establishing the relationship between Big Five personality traits and the financial risk tolerance of retail investors. It will try to recognize the findings, future research directions, and the research gaps.

2. Review of Literature

Much research has been done to identify the relationship between the five traits with the risk level of investors. They have arrived at diverse outcomes, but we have tried to conclude our findings with the overarching and comprehensive results. The various other factors that are important in this relationship and the research gaps have also been discussed.

Antony & Selvarathinam (2022) surveyed Cochin to understand the investor behaviour by considering the mediating role of Big Five personality traits on the relationship between financial risk tolerance and investor decisions. They found that personality traits had a significant effect on investment decisions through traits of agreeableness, conscientiousness, and extraversion. The analysis suggested that RT had a significant negative impact on investment decisions through the trait of openness-to-experience, whereas the trait of neuroticism made this impact significantly positive. Even a study by Rai et al. (2021) found that in Delhi NCR, a high correlation existed between investors' personality traits: agreeableness, conscientiousness, openness to experience, and their risk tolerance levels. However, there was no significant correlation of risk tolerance with extroversion and neuroticism. As per this study, 23% of financial risk tolerance is predicated on personality traits. In a study by Rafay & Mustafa (2023), the findings supported the idea that extroversion, openness to new experiences, investment decisions, and risk tolerance are all positively connected. As per the study using Big Five Taxonomy, financial risk tolerance was an important mediator in the relationship between conscientiousness, neuroticism, and financial decisions.

As per a study conducted by Mathur & Nathani (2019), young individuals in India had a strong correlation between agreeableness, neuroticism, openness, and risk tolerance. The young investors had no significant relationship between extraversion and conscientiousness with RT. It was found that there was no difference in risk tolerance capabilities between male and female investors, and those who were punctual and organized were not affected by levels of risk tolerance. However, people who were intellectuals, curious, and who loved to learn new things were quite high on risk tolerance. Even Dhiman & Raheja (2018) found in their analysis, the relation of risk tolerance with personality traits and emotional intelligence was statistically significant. As per findings of the research conducted by Lawrenson & Koekemoer (2020), in South Africa, female investors' personality traits could be determined by making use of the adaptive five-factor model, which would help in profiling investors more precisely. Male investors are more likely to contribute to financial risk-tolerant activities than females. People who are less educated prefer to take more financial risks, and more educated investors prefer to take fewer financial risks. Age, education, conscientiousness, and neuroticism traits significantly influenced the financial risk tolerance of investors. Gender, monthly income, openness to experience, and agreeableness traits of investors show a weaker or insignificant association with FRT in terms of their investment decisions (Waqar et al.,2023). Financial literacy plays an essential role in risk propensity, and personality traits play a significant role in financial literacy. Besides their education, age, and income, individuals are influenced by financial advisers, friends, relations, and family members for making their investment decisions (Shanmugam et al., 2023).

According to research findings of Mendoza et al. (2023), of study conducted on Philippine investors, extraversion, openness, and neuroticism have a positive and significant influence on their risk tolerance. Financial literacy also has a positive influence on risk tolerance. On the contrary, agreeableness, conscientiousness, and age of the investor did not have a significant influence on risk tolerance.

Pan & Statman (2010) explored four personality traits and found that conscientiousness is negatively related to the other three: agreeableness, openness, and extraversion. Agreeableness is positively related to openness and extraversion. There is no significant relation between openness and extraversion. Risk tolerance varies with personality, even after accounting for age and gender of the individual investor. High risk tolerance is associated with extraversion and openness traits, whereas low risk tolerance is associated with conscientiousness. In fact, no relation was found between risk tolerance and agreeableness. In a study by Pan & Statman (2013), high risk tolerance was found in investors with high levels of extraversion and openness, and relatively low levels among those with high levels of conscientiousness. They concluded that overconfidence is high among people with high levels of extraversion and low among those with high levels of agreeableness. When Hussain & Rasheed (2022) investigated the relationship between investors' personality, financial literacy, overconfidence bias, and investment decision-making process, with risk tolerance as the mediator, they found a significant association between them. Investors who are more financially literate about the various instruments and their characteristics make more prudent decisions in terms of their investments. It is the main contributor to the risk tolerance association, whereas overconfidence bias encourages individuals to indulge in precarious investments, to earn extra profits by undertaking higher risks.

Treerotchananon et al. (2024) determined through a study of Thai stock market investors that Big Five personality traits did not directly influence risk perception. Perceived risk did not play a significant role in the decision to continue investing. Investors with a positive attitude are more likely to continue investing, and this attitude is influenced by extraversion, openness, and conscientiousness traits. Though agreeableness and neuroticism did not affect attitude significantly.

Individual investors lack confidence and rely on friends and peers to help them make investment decisions, despite being financially literate. Financial literacy does not lead to risk-taking behaviour; rather, it breeds an emotion of overconfidence. Their risk-taking behaviour is influenced by risk-aversion emotion as well as by locus-of-control emotion. Emotion of agreeableness influences risk-aversion directly and locus-of-control indirectly (Shaikh & Khan, 2025).

Other personality traits besides the Big Five influence risk tolerance. Superego and parsimony traits had an impact on risk tolerance (Basheer & Siddiqui, 2020). Trait anger predicts risky decisions, and trait anxiety is associated with a preference for a low-risk portfolio (Gambetti & Giusberti, 2012). People with an anxious personality perceive high risks, low control, and returns. They tend to save money and avoid investments, whereas people with high extroversion are more independent and have self-control. They are more likely to make investments (Gambetti & Giusberti, 2019). In a study on UK-based retail investors (Brooks & Williams, 2021), it was found that personality traits had an important role in determining financial risk tolerance. Neuroticism had a negative relationship with risk appetite. Together, the big five personality traits contributed only 1.79% of the cross-sectional variation in risk tolerance. Other wider sets of personality traits had much more influence on attitude to risk than the big five; like qualities of intolerance of uncertainty (3.75%), resilience, financial self-efficacy, and the trait anger (0.97%).

Thanki et al. (2020) used the Type A/Type B personality method for their study. Investors with a type A personality are assertive, hostile, with a sense of time urgency, and intolerant. Type B personality individuals are the opposite of type A. Individuals with a type A personality are willing to invest in risky investments as their capacity to take risks is higher. They also found that financial satisfaction is negatively correlated with financial risk tolerance, whereas financial anxiety, obsession with money, self-esteem, sensation-seeking behaviour, and personality type are positively correlated with FRT.

Retail investors in India showed a significant effect of conscientiousness, openness, and agreeableness traits on risk aversion, cognitive biases, and socially responsible investing. When the HEXACO model was used, it was found that agreeableness, extraversion, and emotionality had a significant influence on financial risk tolerance. There was a significant negative relationship between the honesty-humility trait and overconfidence bias (Rao & Lakkol, 2024).

Singh et al. (2023) conducted a study and established that risk tolerance moderates the relationship between personality traits and behavioural biases. The results showed that conscientiousness and extraversion significantly influenced behavioural biases. Neuroticism was related to herding, disposition, and anchoring biases. A study on investor behaviour, conducted by Rajasekar et al. (2022) in southern India, found that all the big five personality traits are positively related to investment attitude and investment strategy. A person's risk capacity moderates the relationship between the five traits and investment attitude. Further, investment priority moderates the moderated relationship between personality traits, risk capacity, and investment strategy. Bortoli et al. (2019) concluded in their research, conducted on undergraduate students, that people who had higher scores for characteristics within the dimension of openness-to-experience trait were more likely to have higher risk tolerance. There is a lower probability of accepting higher risk levels for participants with greater cognitive abilities.

A study conducted by Oehler et al. (2018) using a dataset of undergraduate business students found that those with a high degree of extraversion are ready to pay higher prices for financial assets. They purchase more financial assets when assets are overpriced, as compared to less extraverted investors. Individuals with a high degree of neuroticism hold more risky assets in their portfolio than less neurotic individuals.

An individual's online social network (OSN) activities provide an idea of their financial risk tolerance. Frequency of logging on to OSN sites indicates an individual's higher risk tolerance, and increasing use of OSN for social connections is associated with lower financial risk tolerance (Wasiuzzaman & Edalat, 2015).

Many factors affect the decisions of an investor, like personality traits, risk tolerance level, biases, financial literacy, age, gender, education, social media, and other psychological factors. All these are correlated in some way or the other. Keeping in view all these factors, this systematic review will cover most of the research done till now on establishing the relationship between Big Five personality traits and the financial risk tolerance of retail investors. The findings and the research gaps from the papers are derived after careful analysis of the past studies.

3. Methods

The existing literature, perspectives, and relationship between Big Five personality traits and risk tolerance of investors have been consolidated by using a systematic review technique. The study analysed the research gaps and potential areas for further research. As shown in Figure 1, after careful screening, there were 70 papers available on the topic, using Prisma standards (Moher et al. 2009). Scopus has been used to acquire the existing literature as it has unlimited high-indexed journals and peer-reviewed articles:

1) In the initial stage, we used the keywords "big five personality traits", "risk tolerance", "factors model", and "OCEAN". We looked for articles containing all these terms, and in our first result, 353 studies were retrieved from Scopus. After refining the research to only "personality risk", the results were reduced to 112 studies.
2) In the second phase, a decision about inclusion and exclusion criteria was made. The filtering of studies was based on the relevance of the title and on the quality of the work.

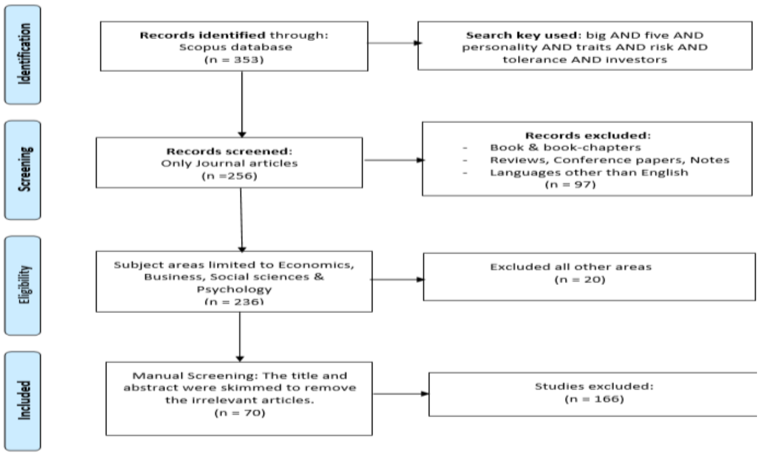

Fig. 1: PRISMA Diagram Adapted from Moher Et Al., 2009, Displaying the Number of Identified, Included, and Excluded Records.

Conference papers, working papers, or other types of 'grey' literature were filtered (Linnenluecke et al. 2019). Hence, 97 studies were excluded, which were from books, book-chapters, reviews, conference papers, notes, and in languages other than English. A further 20 studies were removed by limiting the search to subject areas of economics, social sciences, and psychology. Manual screening by the title and abstract led to the exclusion of 166 articles, resulting in 70 final studies.

This last set of studies in qualitative synthesis contained 70 journal articles published from 2003 to 2025, resulting in an advanced search: (ALL (big AND five AND personality AND traits AND risk AND tolerance AND investors) AND (retail AND investors) AND (individual) AND (LIMIT-TO (SUBJAREA, "ECON") OR LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "PSYC")) AND (LIMIT-TO (DOCTYPE, "ar"))

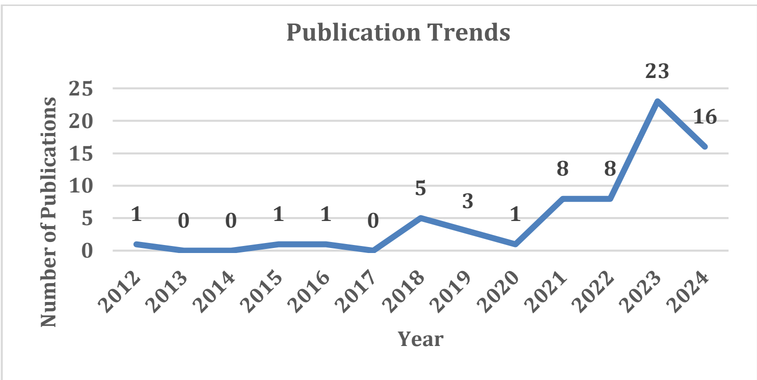

Fig. 2: Publication Trends.

Figure 2 represents the publication trends over the period from 2012 to 2025. The maximum number of publications on the research topic was in the year 2023. This specific research started gaining momentum in 2018, and since 2021, the number of articles published has been growing. This has been due to advancements in behavioural finance research. There has been growing recognition of the importance of psychological factors in financial decisions, leading to many interdisciplinary studies. With fluctuations and growing volatility in financial markets, there has been increasing research to better understand the relationship between personality traits and risk tolerance of investors. There is a growing interest in tailoring financial advice to individual clients, based on individual risk tolerance levels.

4. Results and Findings

This section discusses the characteristics of the primary data used from Scopus for our systematic literature review. The 70 articles in the current review have 160 unique author keywords, representing 157 authors and 70 journals.

4.1. Most influential articles

Table 3 represents the leading articles on the research topic of Big Five personality traits and financial risk tolerance of retail investors. The article with the title “Predictors of investment intention in Indian stock markets: Extending the theory of planned behaviour” by Akhtar & Das (2019), has the highest total 99 citations, as well as having highest 16.5 per year total citations. The result of the analysis showed that financial self-efficacy behaviour exerts a dual effect on the relationship between personality traits and investment intention.

Next is an article by Bernerth et al. (2012), “An empirical investigation of dispositional antecedents and performance-related outcomes of credit scores”, with 53 citations. Another major contribution was of 52 citations of the article “Personality, decision-making styles and investments”, by Gambetti & Giusberti (2019). Oehler et al. (2018), having high total citations of 22, “Young adults' subjective and objective risk attitude in financial decision making: Evidence from the lab and the field”, showed that individuals with a high degree of extraversion are ready to pay higher prices for financial assets, and with a high degree of neuroticism hold more risky assets. Paper by Dhiman & Raheja (2018), “Do Personality Traits and Emotional Intelligence of Investors Determine Their Risk Tolerance?”, with a total of 16 citations, found the relation of risk tolerance with personality traits and emotional intelligence to be statistically significant. A paper directly analysing the relationship between big five personality traits and financial risk tolerance of Indian retail investors is “Personality traits and behaviour biases: the moderating role of risk-tolerance”, by Singh et al. (2023), with a high citation per year score of 7.5. The paper shows that there is an influence of personality traits and risk tolerance on behaviour biases. It displays the moderating role of risk tolerance in the association between individual personality traits and behaviour biases while making investment decisions.

Table 3: Leading Articles on the Topic

Paper Title	Total Citations	Total citations per year
Predictors of investment intention in Indian stock markets: Extending the theory of planned behaviour (Akhtar & Das, 2019)	99	16.50
An empirical investigation of dispositional antecedents and performance-related outcomes of credit scores (Bernerth et al., 2012)	53	4.07
Personality, decision-making styles, and investments (Gambetti & Giusberti, 2019)	52	8.66
Predicting the antecedents of consumers' intention toward purchase of mutual funds: A hybrid PLS-SEM-neural network approach (Mishra et al., 2023)	47	9.40
Investors' expertise, personality traits, and susceptibility to behavioral biases in the decision-making process (Rzeszutek et al., 2015)	33	3.30
The impact of personality traits on attitude to financial risk (Brooks & Williams, 2021)	26	6.50
Investor personality as a predictor of investment intention, mediating role of overconfidence bias and financial literacy (Jain et al., 2023)	25	12.50
Young adults' subjective and objective risk attitude in financial decision making: Evidence from the lab and the field (Oehler et al., 2018)	22	3.14
Does investor personality predict investment performance? A statistics and machine learning model investigation (Chen et al., 2019)	19	3.16
Understanding Individual Attitude to Money: A Systematic Scoping Review and Research Agenda (Sesini & Lozza, 2023)	18	9.00
Information sources and trading behavior: does investor personality matter? (Tauni et al., 2016)	18	2.00
Do Personality Traits and Emotional Intelligence of Investors Determine Their Risk Tolerance? (Dhiman & Raheja 2018)	16	2.28
Personality traits and behaviour biases: the moderating role of risk-tolerance (Singh et al., 2023)	15	7.50
Undergraduate student financial education interventions: Medium-term evidence of retention, decay, and confidence in financial literacy (Gerrans, 2021)	15	3.75
Default rules in investment decision-making: trait anxiety and decision-making styles (Gambetti et al., 2022)	14	4.66

4.2. Research gaps

The relationship of financial risk tolerance of retail investors can be studied with other social, economic, and financial variables, like financial behaviour, emotional intelligence, long-term portfolio returns, accumulation of wealth, and risk-taking attitude (Rai et al., 2021). Risk perception, cognitive biases & decision-making processes impacting financial behaviour can be included. Besides the client’s propensities for maximization, regret, and trust, other factors that can influence the investors should be analysed (Pan & Statman,2010). This can benefit the investment advisors, too. A consumer profile technique for prospective investors can be developed, which can be used by financial institutions for providing counselling services (Antony & Selvarathinam, 2022). Other behavioural biases, besides the overconfidence bias, can also be studied in relation to risk tolerance. Further, the role of behavioural biases as mediators between personality traits and risk tolerance can be explored (Singh et al., 2023).

‘Big Five’ framework is insufficient to characterise this relationship adequately, with significant roles for financial self-efficacy, resilience, and trait anger (Brooks & Williams, 2021). Influence of other personality types like dark triad (narcissism, Machiavellianism, psychopathy) or light triad (faith in humility, humanism, Kantianism) on investment decisions can be studied (Rao & Lakkol, 2024).

Besides gender, other demographics can be explored in relation to risk tolerance (Mathur & Nathani, 2019). Factors like income and experience can also be analysed to find their relationship with personality traits and risk tolerance.

While distributing the questionnaires, care should be taken to include a greater number of investment firms, not just one. This will help in obtaining a more holistic sample, Lawrenson & Koekemoer (2020). In a study, mostly university students or faculty members were included

Mendoza et al., 2023). To include and describe all investor groups, other age groups should be included in future studies. If research is on real estate investors, future studies can be conducted on other individuals Waqar et al., 2023).
To remove selection bias, in place of undergraduate students, experienced investors with a high degree of financial knowledge and diverse preferences can be included. To generalize and extrapolate a study of investors' profile, national institutions can be replaced with international operations Bortoli et al., 2019).

Table 4: Main Results from Systematic Literature Review About the Relation Between Big Five Personality Traits and Financial Risk Tolerance of Retail Investors

Author	Journal	Findings	Research Gap
Antony & Selvarathinam (2022)	Journal of Pharmaceutical Negative Results	*Significant influence of personality traits on investment decisions *Age of the investor influences risk investment decisions *Risk perception influences decision-making capacity	A consumer profile technique for prospective investors can be developed, which can be used by financial institutions to provide counselling services.
Mathur & Nathani (2019)	International Journal of Innovative Technology and Exploring Engineering	*Agreeableness, neuroticism & openness have a strong correlation with RT *No significant relationship of extraversion & conscientiousness with RT *RT capabilities in male & female investors are not different	Besides gender, other demographics can be explored to find their relation with RT.
Rai et al. (2021)	Management and Labour Studies	*Significant correlation between three PTs (agreeableness, conscientiousness, openness) with FRT *No significant correlation between two PTs (extroversion, neuroticism) *23% of FRT is predicated by PTs.	The relationship of FRT of investors can be studied with other social, economic, and financial variables, like financial behaviour, emotional intelligence, long-term portfolio returns, accumulation of wealth, and risk-taking attitude.
Pan & Statman (2010)	SCU Leavey School of Business Research Paper	*Agreeableness is positively related to openness and extraversion. *No significant relation between openness and extraversion. *Risk tolerance varies with personality, even after accounting for age and gender of the individual investor.	Besides the client's propensities for maximization, regret, and trust, other factors that can influence the investors should be studied, which in turn can benefit the investment advisors.
Pan & Statman (2013)	Journal of Investment Consulting	*Found high RT in investors with high levels of extraversion & openness but relatively low levels among those with high levels of conscientiousness. *Overconfidence is high among people with high levels of extraversion & low among those with high levels of agreeableness.	Other behavioural biases can be analysed in relation to risk tolerance.
Rafay & Mustafa (2023)	International Journal of Social Science and Entrepreneurship	*Extroversion, openness, investment decisions & RT are all positively connected *FRT is an important mediator in the relationship between conscientiousness, neuroticism, and financing decisions.	Besides extraversion and openness to experience, other personality traits can also be studied in relation to investment decisions.
Waqar et al. (2023)	iRASD Journal of Economics	*Age, education, conscientiousness & neuroticism traits significantly influenced FRT *Gender, monthly income, openness & agreeableness traits of investors show weaker or insignificant association with FRT	This research is on real estate investors. A study on other individuals can be undertaken. Risk perception, cognitive biases & decision-making processes impacting financial behaviour can be included.
Bortoli et al. (2019)	PLoS ONE	*People with higher scores for characteristics within the openness to experience trait were more likely to take greater risks *The greater the cognitive abilities, the lower the probability of accepting high risk levels *Risk profile should be understood, and then investment options can be suggested to investors by financial institutions	To remove selection bias, in place of undergraduate students, experienced investors with a high degree of financial knowledge and diverse preferences can be included. To generalize and extrapolate the study of investors' profiles, national institutions can be replaced by international operations
Brooks & Williams (2021)	Research in International Business and Finance	*Showed that personality traits & characteristics are more important than emotions in determining attitude to risk	'Big Five' framework is insufficient to characterise this relationship adequately, with significant roles for financial self-efficacy, resilience, and trait anger.
Lawrenson & Koekemoer (2020)	Cogent Economics & Finance	*Personality traits were found to influence female investors' FRT *Male investors are more risk-tolerant than their female counterparts *Lower-educated investors displayed higher levels of FRT, whereas higher-educated investors displayed lower levels of FRT	In place of just one investment firm, questionnaires can be distributed to investors at other investment firms to obtain a more holistic sample.
Mendoza et al. (2023)	Review of Integrative Business and Economics Research	*Extraversion, openness, and neuroticism have a positive and significant influence on investors' RT *Financial literacy also has a positive influence on RT *Agreeableness, conscientiousness, and age of investor did not have a significant influence on RT	Only university students and faculty members were included, so it does not describe all investor groups.
Hussain & Rasheed (2022)	Research Square	*Investor personality and overconfidence bias have a positive & significant relationship with the investment decision-making process *RT significantly mediates the relationships of investors' personality, investment decisions & financial literacy *Age had positive & significant, whereas gender, education & income had insignificant impact on investment decisions	Other behavioural biases, besides the overconfidence bias, can also be studied.

Rao & Lakkol (2024)	Investment Management and Financial Innovations	*There was a significant effect of conscientiousness, openness & agreeableness traits on risk aversion, cognitive biases, and socially responsible investing *Agreeableness, extraversion, and emotionality had a significant influence on FRT *There was a significant negative relationship between the honesty-humility trait and overconfidence bias	Influence of other personality types like dark triad (narcissism, Machiavellianism, psychopathy) or light triad (faith in humility, humanism, Kantianism) on investment decisions can be studied.
Singh et al. (2023)	Quality & Quantity	*Conscientiousness & extraversion traits significantly influence the biases. *Neuroticism was associated with herd behaviour, disposition effect & anchoring bias. Study confirmed the moderating effect of risk tolerance on the association between PTs and behaviour biases.	The role of behavioral biases as mediators between PTs and FRT can be explored.

5. Conclusion

Among the big five personality traits, in most of the papers, openness to experience was found to have a significant positive relation with the financial risk tolerance of investors. (Mathur & Nathani, 2019; Rai et al., 2021; Pan & Statman, 2010; Rafay & Mustafa, 2023; Bortoli et al., 2019; Mendoza et al.,2023). The weakest relation was established between conscientiousness and risk tolerance, with the maximum number of studies. (Mathur & Nathani, 2019; Pan & Statman, 2010; Mendoza et al.,2023). In one study, it was concluded that there is no relation between agreeableness and risk tolerance (Pan & Statman, 2010).

Thus, financial institutions can first understand the risk profile of their clients and then propose appropriate investment options (Bortoli et al., 2019). Female investors are underrepresented and less risk-tolerant. Hence, it should be the responsibility of the investment firm to profile its clientele in terms of their risk profile (Lawrenson & Koekemoer, 2020). There are implications for the government also, that it should address the urgent need for financial initiatives to improve financial literacy and investors' risk tolerance (Mendoza et al., 2023).

Besides the big five personality traits, there are other traits and behaviours that can be studied. The HEXACO model includes traits like emotionality and honesty-humility, which have a significant relation with financial risk tolerance (Rao & Lakkol, 2024). The Type A/Type B personality method can also be used. Traits of superego, parsimony, and anger had an impact on risk tolerance (Basheer & Siddiqui, 2020; Gambetti & Giusberti, 2012; Brooks & Williams, 2021). There is a growing importance of financial literacy, as emphasized by SEBI. Many studies have been conducted, and the role of financial literacy, in terms of impact on personality traits and financial risk tolerance, can be further analysed. Future studies can link Behavioural biases and positive psychology and their influence on financial decisions (Rao & Lakkol, 2024). Cognitive biases have a strong influence on investment decisions. With the increasing use of social media and online trading, biases like overconfidence, herding, disposition, anchoring, and their influence on risk tolerance and decisions of investors can be analyzed.

This study has been limited to papers from Scopus. Future researchers can search beyond and make use of Web of Science, Google Scholar, etc. Further, the search might give different results as the keywords and techniques of advanced research a subjective matters. Due to these reasons few papers might have been omitted by this systematic literature review.

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