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RISK PROFILING OF SECONDARY EQUITY INVESTORS FROM THE CHENNAI CITY OF INDIA BASED ON THE BIG FIVE PERSONALITY MODEL

Keywords: investor personality, risk profiling, secondary equity market, big five personality model.

J E L Classification: G10, G11, G32, G41.

Abstract: The risk taken by the investor depends on several independent variables like: personality, biological age, investment experience and income. The main aim of this article is to combine all these variables in order to build an exhaustive risk profile on the basis of the Big Five Personality dimensions. The research method applied is exploratory in nature and questionnaire survey method was employed to gather data from 436 secondary equity market investors residing in the Chennai city of India. ANOVA was employed to develop the risk profile. The outcome of the research was an exhaustive risk profile combining all the related variables and a regression model predicting

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the equity returns. The main conclusions of the study are that the investors with the more of the conscientiousness personality tend to take less risk. This finding was also consistent among the senior investors, high income investors and those with mediocre/high investment experience. The study also concluded that the agreeable investors with high income/high investment experience, tend to take less risk. Only the young investors with more of the conscientiousness personality tend to take more risk and with more of the extraversion personality tend to take less risk. This study serves as a guidance for advisors to provide appropriate recommendations on the basis of the risk appetite and personality of the investors.

Introduction

Performance depends not only on financial innovations but is mediated by the process of risk management (Zouari & Abdelmalek, 2020). Personality is instrumental in driving individuals towards risk taking (Kogan & Wallach, 1964). Risk propensity is deeply embedded in personality (Nicholson, Soane, Fenton-O'Creevy & Willman, 2005). The risk-taking ability of individuals is inbuilt in their core personality which enables them to operate in uncertain conditions (McClelland, 1961). Everyday financial risk-taking behavior is also influenced by personality (Carducci & Wong, 1998). Hence, a priori prediction of risk propensity is possible by measuring these psychological measures (Deck, Lee, Reyes & Rosen, 2008). Personality contributes a great deal towards the risk-taking ability (Kowert & Hermann, 1997; Filbeck, Hatfield & Horvath, 2005). Research in investor personality is important in order to assess investors' behavior accurately (Oehler, Wendt, Wedlich & Horn, 2018).

Though personality is a significant predictor of risk behavior, a comprehensive analysis of individual differences is needed to explain how the factors of personality combine to affect risk. The Big Five Personality model is the best comprehensive model to analyze personality (Gullone & Moore, 2000). The Big Five Personality model comprises of five dimensions: Neuroticism includes moodiness, nervousness and temperamentality; Openness includes creativity, imagination and curiosity; Extraversion includes assertiveness, talkativeness and activeness; Agreeableness includes warmth, kindness and trust and Conscientiousness includes reliability, organization and thoroughness (Goldberg, 1993).

This study aims to profile secondary equity investors by risk taken in equity investments and the personality type assessed by the Big Five Personality model. This study further profiles investors by stratifying them on the ba-

sis of their annual income, age and equity investment experience which all play a prominent part in influencing the investors' risk appetite. A robust regression model is also developed in order to predict the actual return earned.

Literature Review

Studies of risk in both finance and economics have been on the basis of the expected utility theory of Von Neumann and Morgenstern (1947) wherein maximizing the expected utility has been the core of decision making. Markowitz (1952) proposed risk and return combinations to be chosen for selecting the desired portfolio. Allais (1953) made suggestions for making the risk theory more realistic by considering the difference between psychological and monetary values and the probability of psychological values. One of the first theories of risk, formulated by Bernoulli (1967), in the year 1738, was that risk is evaluated by individuals via a quantitative process of selecting between various gambles by comparing the different possible outcomes based on their probability of occurrence. The next significant contribution to risk theories was by Kahneman and Tversky (1979) with the concept of Prospect theory. The next significant contribution to risk theory was by Weber and Milliman (1997) wherein they propose to assess the risk propensity by factoring in both the situational and individual differences in risk perception. Risk propensity is determined more by the individual characteristics than defined by the situation. Hence, individual differences defined by psychological factors especially personality is an important determinant of risk behavior (Nicholson et al., 2005). "Reference to the psychological literature suggested a more robust means to measure an individual's tolerance for risk" (Durand, Newby & Sanghani, 2008, p. 95).

Based on the risk behavior and personality, Nicholson et al. (2005) coined three non-exclusive types of risk takers, namely: Stimulation seekers, Risk adaptors and Goal achievers/Loss avoiders. Kourtidis, Šević and Chatzoglou (2011) also profiled investors based on their personality and risk tolerance into low-profile, moderate-profile and high-profile investors. Mittal and Vyas (2008) profiled investors into various personality types: technical, cautious, casual and informed, based on their risk-taking capacity and choice of investment alternatives.

Personality of individuals can be tested using various models like the internal/external personality advanced by Rotter (1966); MBTI by Myers, McCaul-

ley and Most (1985); BB&K model advanced by Bailard, Biehl and Kaiser (1986) and the Big Five personality traits proposed by Costa and McCrae (1992).

The Big Five personality model was chosen for this study as it is currently the most received taxonomy for the personality definition (De Bortoli, Da Costa Jr, Goulart & Campara, 2019). The five dimensions of the Big Five Model include agreeableness, extraversion, conscientiousness, neuroticism and openness. In the equity market, the investors with the openness personality tend to employ their active imagination in financial investment decisions. Conscientious investors are confident investors who believe that they will be able to outperform other investors. Extravert investors are very optimistic about investing and they enjoy the risk-taking in their investment decisions. Agreeable investors are very considerate and friendly and generally make investment decisions based on easily available information. Investors with neurotic personality tend to get stressed and worried when facing complex decisions (Ali & Waheed, 2013).

Extraversion: Extraversion personality increases the risk-taking propensity (Nicholson et al., 2005; Gullone & Moore, 2000; Deck et al., 2008; Pinjisakikool, 2018; Becker, Deckers, Dohmen, Falk & Kosse, 2013). This personality is positively related with investor's risk tolerance behavior (Pak & Mahmood, 2015; Zhuan, Ying, Boon, Hui & Hong, 2016). Extravert investors have the propensity to pay a higher price for risky assets owing to higher risk propensity (Oehler et al., 2018). They have high risk tolerance. Extraversion is related to propensity for maximization, trust, life-satisfaction, and overconfidence (Pan & Statman, 2013). However, Durand, Newby, Peggs and Siekierka (2013) found that the risk-taking propensity has a negative association with extraversion.

Agreeableness: Investors of this personality type are less likely to choose risky investment options (Pak & Mahmood, 2015; Tjandrasa & Tjandraningtyas, 2018). Agreeableness personality decreases the risk-taking propensity (Markey, Markey, Ericksen & Tinsley, 2006; Nicholson et al., 2005; Anic, 2007; Deck et al., 2008; Durand et al., 2008; Pinjisakikool, 2018). Agreeableness has a significant influence on risk aversion (Nga & Ken Yien, 2013). However, Gullone and Moore (2000) and Zhuan et al. (2016) found that agreeableness has a positive correlation with risk behavior.

Conscientiousness: Conscientiousness decreases the risk-taking propensity (Nicholson et al., 2005; Gullone & Moore, 2000; Deck et al., 2008; Pinjisakikool, 2018; Pak & Mahmood, 2015). Conscientiousness has a significant influence on risk aversion (Nga & Ken Yien, 2013). These investors tended to reduce risk

(Durand, Newby, Tant & Trepongkaruna, 2013). Low level of conscientiousness is connected to high risk tolerance. Conscientiousness is directly related to the tendency to regret and the tendency for maximization. Trust ranked low on conscientiousness. Low conscientiousness investors attributed success to luck over skill (Pan & Statman, 2013).

Neuroticism: Neuroticism is positively related with investor's risk tolerance behavior (Durand et al., 2008; Zhuan et al., 2016) and hence neurotic investors choose riskier stocks (Durand, Newby, Peggs & Siekierka, 2013). However, Nicholson et al. (2005), Deck et al. (2008), Anic (2007), Becker et al. (2013) and Pak and Mahmood (2015) find that this personality decreases the risk-taking propensity. Neurotic investors hold less risky assets (Oehler et al., 2018).

Openness: Openness is positively related with investor's risk tolerance behavior (Zhuan et al., 2016; Pan & Statman, 2013; Kowert & Hermann, 1997; Pak & Mahmood, 2015). Investors of this personality type are more likely to choose risky investment options (Durand et al., 2008; Ali & Waheed, 2013; Tjandrasa & Tjandraningtyas, 2018). This personality increases the risk-taking propensity (Nicholson et al., 2005; Deck et al., 2008; Anic, 2007). However, openness has a strong influence on risk aversion (Nga & Ken Yien, 2013). Gullone and Moore (2000) also found that openness has a negative correlation with risk behavior. Openness is negatively related to high tendency of maximization and life-satisfaction. Trust ranked high on openness. Investors with this personality tend to attribute success to luck over skill (Pan & Statman, 2013).

Hypothesis Development

On the basis of the literature review discussed, the basis for the argument that the personality of the investor plays a prominent part in influencing the risk appetite of the investor is strongly built. The first hypothesis is formulated along the same lines, in order to profile investors based on the risk taken in equity investments and the personality type.

H_1: There is no significant difference in the means of the investor personalities of the secondary equity market investors divided in terms of the risk taken in equity investments.

Demographic variables play a prominent part in influencing the risk taking of investors (Hawley & Fuji, 1993; Sung & Hanna, 1996). Wallach and Kogan (1961) were among the first researchers to research into risk tolerance with

respect to the age. The age of the investor is strongly related to the equity risk premiums (Ang & Maddaloni, 2003) and as the age increases the risk premiums also increase (Bakshi & Chen, 1994). The risk tolerance was found to increase with age (Wang & Hanna, 1997) whereas Kannadhasan (2015) found that risk tolerance increases as age decreases. Some studies (Morin & Suarez, 1983; Pålsson, 1996) have also found risk aversion to increase uniformly with age. The investors below the age group of 25 years take more risk and prefer equity investing whereas investors above 60 years prefer safer investments (Parashar, 2010). Riley Jr. and Chow (1992) showed that risk aversion reduces with age but only till the age of 65 after which risk aversion increases with age. Hence, the age of the investor is a prominent influencer of his/her risk appetite. This forms the base for the conceptualization of the second hypothesis.

H_2: There is no significant difference between the means of the investor personalities of the different age groups divided in terms of the risk taken in equity investments.

The income earned by investors also plays a prominent part in risk taking (Grable, Lytton & O'Neill, 2004; Cicchetti & Dubin, 1994). Risk aversion decreases as wealth increases (Riley Jr. & Chow, 1992; Cohn, Lewellen, Lease & Schlarbaum, 1975). The income earned is negatively related to risk aversion which implies that high income individuals are less risk averse and hence invest in risky securities (McInish, Ramaswami & Srivastava, 1993; Shaw, 1996). Friedman (1974) also provided evidence for lesser degree of risk aversion among higher salaried employees. However, Hawley and Fuji (1993) found that wealthier investors took less financial risk. Hence, the annual income of the investor is an important influencer of the risk appetite of the investor. This forms the base for the conceptualization of the next hypothesis.

H_3: There is no significant difference between the means of the investor personalities earning varoius income levels divided in terms of the risk taken in equity investments.

Experience is an important determinant of financial knowledge (Hilgert, Hogarth & Beverly, 2003) which in turn influences the attitude towards risk taking (Wang, 2009). Investors with higher investment experience are more risk tolerant and hold higher risk portfolios when compared to investors with lower risk tolerance (Corter & Chen, 2006). However, Pak and Mahmood (2015) showed that investors with past investment experience are more risk averse owing to negative investment experiences. Hence, the equity investment ex-

perience of the investor is a prominent influencer of his/her risk appetite. This forms the base for the conceptualization of the last hypothesis.

H_4: There is no significant difference between the means of the investor personalities having different equity investment experience divided in terms of the risk taken in equity investments.

Objective of the Study

The main objective of the study is to profile the secondary equity investors on the basis of their risk propensity in equity investments and their personality dimension assessed by the Big Five Personality model.

Research Methodology and Research Process

The study's population is the Chennai based investors actively investing in the secondary equity market. The study's samples chosen are the customers of a renowned investment company named Integrated and the members of a formal association named Tamilnadu Investors Association (TIA). The questionnaire survey method was adopted for data collection. The Tamilnadu Investors Association was the only body which permitted to gather data from its members, hence it was chosen. Similarly, Integrated was the only company which permitted to survey its clients, hence it was chosen. The final sample size was 436 as the final number of valid questionnaires collected was 436.

Results and Conclusions of the Research Process

The data was collected from the secondary equity investors sample by the questionnaire survey method. The personality dimensions of the Big Five Personality model of the sample were measured on a Likert scale by employing the Big Five inventory.

Analysis of Variance (ANOVA) test was used to compare the means of the personality dimensions of the investors divided based on the risk taken in order to identify which investor personalities take high/low risk.

Table 1. ANOVA-Personality vs. Risk

Personality Dimensions	F - value	p – value
Extraversion	1.851	0.158
Agreeableness	1.275	0.281
Conscientiousness	**3.279**	**0.039**
Neuroticism	1.352	0.260
Openness	0.181	0.835

S o u r c e : compiled based on SPSS results.

From the ANOVA results (table 1) we can conclude that only in conscientiousness, the respondents belonging to the different groups divided on the basis of the risk taken differ. With respect to conscientiousness, the respondents with low risk have the highest mean and those with high risk have the lowest mean (table 2). Hence, investors with more of the conscientiousness personality have the propensity to take less risk.

Table 2. Descriptives-Conscientiousness Personality

Risk level	N	Mean
Low	141	**31.2483**
Medium	169	30.1883
High	126	**29.8574**
Total	436	30.4355

S o u r c e : compiled based on SPSS results.

Since all the personalities were not significant, further analysis was done in order to profile the investor personalities based on risk.

The first profiling was done on the basis of the age categories. Investors in the age category of 35 years and below were labeled as young investors, 36-55 as middle-aged and those above 55 as senior investors. The results were not significant only for the middle-aged investors.

The ANOVA results between the personality dimensions and risk of young and senior investors shown in table 3 show that for young investors, in extra-

version and conscientiousness, the respondents belonging to the different categories divided based on the risk taken differ. With respect to extraversion, the respondents with low risk have the highest mean and those with medium risk have the lowest mean (table 4). Similarly, for conscientiousness, the respondents with medium risk have the lowest mean and the respondents with high risk have the highest mean (table 4).

Similarly, for senior investors, only the conscientiousness dimension is significant (table 3). With respect to conscientiousness, the respondents with low risk have the highest mean and those with high risk have the lowest mean (table 4).

Hence, young investors with more of the extraversion personality have the propensity to take less risk and those with more of the conscientiousness personality have the propensity to take more risk. And senior investors with more of conscientiousness have the propensity to take less risk.

Table 3. ANOVA-Personality vs. Risk of Young/Senior Investors

Personality Dimensions	Young		Senior	
	F-value	p-value	F-value	p-value
Extraversion	**3.526**	**0.032**	0.024	0.976
Agreeableness	0.037	0.964	2.404	0.094
Conscientiousness	**3.87**	**0.023**	**3.74**	**0.026**
Neuroticism	0.53	0.59	0.547	0.58
Openness	1.392	0.252	1.923	0.15

S o u r c e : compiled based on SPSS results.

Table 4. Descriptives–Young/Senior Investors

Risk Level	Young		Senior
	Extraversion Mean	Conscientiousness Mean	Conscientiousness Mean
Low	**27.7788**	30.9463	**31.2778**
Medium	**25.8347**	**29.1208**	30.8838
High	27.0372	**31.3866**	**28.3997**
Total	26.893	30.4258	30.3982

S o u r c e : compiled based on SPSS results.

The next profiling was done based on the annual income. The investors with an income of Rs.2 lakhs and below were labeled as low-income, those with an income of Rs.2.01-6 lakhs as average income and Rs.6.01 lakhs and above as high-income investors. The results were not significant for the low and the average income investors.

The ANOVA results of the high-income investors (table 5) show that in agreeableness and conscientiousness, the respondents belonging to the different groups divided based on the risk taken differ. With respect to agreeableness/conscientiousness, the respondents with low risk have the highest mean and those with high risk have the lowest mean (table 6). With respect to the Tukey Post hoc test (table 7), the mean of the agreeableness in the low risk level was significantly higher than the means of the agreeableness in all other risk levels. Thus, the high-income investors with more of the agreeableness personality take less risk.

Table 5. ANOVA-Personality vs. Risk of High-Income Investors

Personality Dimensions	F–value	p–value
Extraversion	0.994	0.373
Agreeableness	**6.639**	**0.002**
Conscientiousness	**3.901**	**0.023**
Neuroticism	0.545	0.581
Openness	0.515	0.599

S o u r c e : compiled based on SPSS results.

Table 6. Descriptives-High Income Investors

Risk level	N	Agreeableness Mean	Conscientiousness Mean
Low	33	**34.2189**	**33.2938**
Medium	40	30.9714	30.5631
High	41	**29.5197**	**30.2728**
Total	114	31.3894	31.2492

S o u r c e : compiled based on SPSS results.

Table 7. Tukey Post hoc results of Agreeableness-High Income Investors

(I)Risk Divided into Low Medium and High	(J)Risk Divided into Low Medium and High	Mean Difference (I-J)	Sig.
Low	**Medium**	**3.24752***	**.039**
	High	**4.69920***	**.001**
Medium	Low	-3.24752*	.039
	High	1.45168	.474
High	Low	-4.69920*	.001
	Medium	-1.45168	.474

* The mean difference is significant at the 0.05 level.

S o u r c e : compiled based on SPSS results.

The last profiling was done based on the equity investment experience. The investors with an experience span of 5 years or less were labeled as low investment experience, 5-10 years as mediocre and above 10 years as high. The results were not significant for the low investment experience group.

The ANOVA results between the personality dimensions and risk of investors with mediocre and high investment experience (table 8) show that for mediocre experience in conscientiousness, the respondents belonging to the different groups divided based on the risk taken differ. With respect to conscientiousness, the respondents with low risk have the highest mean and those with high risk have the lowest (table 9). Table 8 also shows that for high experience, the agreeableness and conscientiousness dimensions are significant. With respect to agreeableness/conscientiousness, the respondents with low risk have the highest mean and those with high risk have the lowest mean (table 9). The Tukey post hoc results in Table 10 also show that the mean of the agreeableness in the high-risk level was significantly lower than the means of the agreeableness in all other risk levels. Thus, the investors with high investment experience with less of the agreeableness personality take more risk. And investors with mediocre investment experience with more of the conscientiousness personality have the propensity to take less risk.

Table 8. ANOVA-Personality vs. Risk of Investors with Mediocre/High Investment Experience

Personality Dimensions	Mediocre		High	
	F-value	p-value	F-value	p-value
Extraversion	0.83	0.438	0.871	0.421
Agreeableness	1.81	0.168	**4.15**	**0.018**
Conscientiousness	**4.047**	**0.02**	**3.213**	**0.043**
Neuroticism	2.867	0.061	1.339	0.265
Openness	0.014	0.986	0.451	0.638

S o u r c e : compiled based on SPSS results.

Table 9. Descriptives-Investors with Mediocre/High Investment Experience

Risk Level	Mediocre	High	
	Conscientiousness Mean	Agreeableness Mean	Conscientiousness Mean
Low	**31.7596**	**32.4541**	**32.212**
Medium	30.9457	31.9032	30.0561
High	**28.6801**	**29.6763**	**29.4006**
Total	30.5306	31.1701	30.2307

S o u r c e : compiled based on SPSS results.

Table 10. Tukey Post Hoc results of Agreeableness

(I)Risk Divided into Low Medium and High	(J)Risk Divided into Low Medium and High	Mean Difference (I-J)	Std. Error	Sig.
Low	Medium	.55086	1.11901	.875
	High	2.77782*	1.14160	.043
Medium	Low	-.55086	1.11901	.875
	High	2.22696*	.91595	.043
High	**Low**	**-2.77782***	**1.14160**	**.043**
	Medium	**-2.22696***	**.91595**	**.043**

* The mean difference is significant at the 0.05 level.

S o u r c e : compiled based on SPSS results.

The summary of the risk profiling of the various categories is shown in table 11 below. Thus, young investors with high extraversion/low conscientiousness; senior investors with high conscientiousness; high-income investors with high agreeableness/conscientiousness; mediocre investment experience investors with high conscientiousness and high investment experience investors with high agreeableness/conscientiousness tended to take low risk in the equity market. Similarly, young investors with low extraversion/high conscientiousness; senior investors with low conscientiousness; high-income investors with low agreeableness/conscientiousness; mediocre investment experience investors with low conscientiousness and high investment experience investors with low agreeableness/conscientiousness tended to take high risk in the equity market.

Table 11. Summary of Risk Profiling based on Demographic and Financial Profiles

Category	Risk Level	Personality Type
Young	Low	High Extraversion
		Low Conscientiousness
	High	Low Extraversion
		High Conscientiousness
Senior	Low	High Conscientiousness
	High	Low Conscientiousness
High Income	Low	High Agreeableness
		High Conscientiousness
	High	Low Agreeableness
		Low Conscientiousness
Mediocre Investment Experience	Low	High Conscientiousness
	High	Low Conscientiousness
High Investment Experience	Low	High Agreeableness
		High Conscientiousness
	High	Low Agreeableness
		Low Conscientiousness

S o u r c e : compiled based on SPSS results.

Regression modeling was used to predict the actual return earned, which was used as the dependent variable in the model. The independent variables employed were age, annual income, equity investment experience, risk level, expected return and the five personality dimensions. The significant variables include the equity investment experience, risk level and expected return as their p-values (0.019, 0.001, 0.000) were less than the alpha value (0.05). Only the agreeableness and openness dimensions have negative coefficients implying that they have a negative impact on the actual return, that is, investors with more of the agreeableness/openness personality tend to earn lower returns. Risk and all the other personality dimensions have a positive co-efficient indicating that the higher these values, the higher would be the returns earned. 58.1% (R^2) of the variation in the actual return (which is the dependent variable) was shown by the variation in the independent variables, hence proving that the model was good. With regard to the One-Sample Kolmogorov-Smirnov test, the normality condition was significant at the 0.01 level. The Tolerance statistics which tested the collinearity among the independent variables was around 1, thereby showing that only some of the variability in the independent variable was shown by the rest of the independent variables. Therefore, multicollinearity issues of the independent variables were ruled out. There was also no indication of multicollinearity as the VIF factor was lower than 2 for all the independent variables. The final regression equation is :

$$Y = -11.061+0.109X_1+0.308X_2+0.618X_3+0.785X_4+4.105X_5+0.041X6-0.018X_7+ 0.138X_8+ 0.024X_9-0.042X_{10}$$

where, Y-actual annual return; X_1-age; X_2-annual income; X_3-equity investment experience; X_4-risk level; X_5-expected return; X_6-extraversion; X_7-agreeableness; X_8-conscientiousness; X_9- neuroticism; X_{10}-openness.

Table 12. Regression Summary

R	R Square	Adjusted R Square	Std.Error of the Estimate
.762	**.581**	.571	5.92459

S o u r c e : compiled based on SPSS results.

Table 13. Regression–ANOVA table

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	20641.753	10	2064.175	**58.807**	**0.000**
Residual	14882.729	424	35.101		
Total	35524.483	434			

S o u r c e : compiled based on SPSS results.

Table 14. Regression–Coefficients table

	Unstandardized Coefficients		T	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	-11.061	3.370	-3.282	**.001**		
Age	.109	.210	.520	.603	.749	1.335
Annual income	.308	.187	1.650	.100	.775	1.290
Equity investment experience	.618	.262	2.360	**.019**	.668	1.497
Risk level	.785	.244	3.220	**.001**	.908	1.102
Expected return	4.105	.217	18.925	**.000**	.789	1.267
Extraversion	.041	.089	.462	.644	.692	1.445
Agreeableness	-.018	.072	-.253	.801	.611	1.637
Conscientiousness	.138	.080	1.720	.086	.567	1.765
Neuroticism	.024	.075	.318	.751	.900	1.111
Openness	-.042	.076	-.545	.586	.708	1.413

S o u r c e : compiled based on SPSS results.

The significant finding of the first hypothesis was that investors with more of the conscientiousness personality have the propensity to take less risk in the secondary equity market. This finding corroborates with the findings of Gullone and Moore (2000); Nicholson et al. (2005); Deck et al. (2008); Pinjisakikool (2018); Durand, Newby, Tant and Trepongkaruna (2013); Pan and Statman (2013) and Pak and Mahmood (2015) who also found that conscientiousness decreases the risk-taking propensity.

This study further builds on the risk profiling done by most researchers by combining variables like annual income, age and equity investment experience which significantly influence the risk appetite of equity investors.

Age: The second hypothesis found that the young investors with more of the extraversion personality have the propensity to take less risk, which corroborates with the finding of Durand, Newby, Peggs and Siekierka (2013) who found that the risk taking has a negative association with extraversion. The young investors with more of the conscientiousness personality have the propensity to take more risk in the secondary equity market. Hence, the relationship between risk appetite and conscientiousness is reversed for the young investors. The senior investors with more of the conscientiousness personality have the propensity to take less risk in the secondary equity market which again corroborated with the finding of several past research mentioned earlier.

Annual income: The third hypothesis found that the high-income investors with more of the agreeableness/conscientiousness personality have the propensity to take less risk in the secondary equity market which corroborates with the finding of Pak and Mahmood (2015); Tjandrasa and Tjandraningtyas (2018); Markey et al. (2006); Nicholson et al. (2005); Anic (2007); Deck et al. (2008); Durand et al. (2008) and Pinjisakikool (2018) who found that the agreeableness personality decreases the risk-taking propensity. The results with respect to the conscientiousness personality remained the same.

Equity investment experience: The last hypothesis found that the investors with mediocre/high investment experience with more of the conscientiousness personality have the propensity to take less risk in the secondary equity market, which was similar to the previous results. The investors with high investment experience with less of the agreeableness personality take more risk which was similar to the findings of the high-income investors which corroborated with earlier studies.

The regression model developed showed that agreeableness and openness personality dimensions have negative coefficients showing that they have a negative impact on the actual return, that is, investors with more of the agreeableness/openness personality tend to earn lower returns in equity investments which corroborate with the finding of Trang and Khuong (2016) who document that investors with agreeableness personality earn lower returns in financial investments. The model also indicated that the investors with more of the conscientiousness/extraversion/neuroticism personality tend to earn higher returns owing to the positive coefficients in the model

which corroborates with the finding of Akhtar, Thyagaraj and Das (2018) and Trang and Khuong (2016).

Conclusion

Wealth managers and financial advisors find the task of customizing financial advice to each of their clients very problematic as every investor has a unique risk appetite which in turn depends on several factors. This study aimed to build a cohesive risk profile of the investors based on the existing literature which independently proved that the risk appetite of the investor depends on the age, annual income, investment experience and the personality type. By building an exhaustive risk profile combining all the related variables, this study serves as a guidance for finance professionals. By employing the questionnaire survey method, the Big Five Personality type, the risk taken and several other demographics and financials were collected from a sample of 436 secondary equity market investors located in the Chennai city of India. ANOVA tests showed that the investors with the more of the conscientiousness personality tend to take less risk. This finding was also consistent among the senior investors, high income investors and those with mediocre/high investment experience. The tests also showed that the agreeable investors with high income/high investment experience, tend to take less risk. Only the young investors showed that more of the conscientiousness personality implied a tendency to take more risk and more of the extraversion personality implied a propensity to take less risk. The regression model which predicted the actual return earned showed that the agreeableness and openness personalities had a negative influence on the returns earned whereas risk and the other personality dimensions had a positive influence. These risk profiles amalgamated with the stratification based on personality, age, income and investment experience would serve as an important tool for finance professionals to make sound recommendations.

References

Akhtar, F., Thyagaraj, K.S., & Das, N. (2018). The Impact of Social Influence on the Relationship Between Personality Traits and Perceived Investment Performance of Individual Investors. *International Journal of Managerial Finance,* 14(1), 130-148.

Ali, I., & Waheed, M.S. (2013). Determinants of small equity investor's risk assumption attitude. In *2nd International Conference on Humanities, Economics and Geography*. London: ICHGE.

Allais, M. (1953). Le comportement de l'homme rationnel devant le risque: Critique des postulats et axiomes de l'école Américaine. *Econometrica*, 21, 503-546. http://dx.doi.org/10.2307/1907921.

Ang, A., & Maddaloni, A. (2003). Do demographic changes affect risk premiums? Evidence from international data. *NBER Working Paper*, 9677, 1-41. http://dx.doi.org/10.3386/w9677.

Anic, G. (2007). *The association between personality and risk taking*. Graduate Theses and Dissertations. Tampa: University of South Florida.

Bailard, T., Biehl, D., & Kaiser, R. (1986). *Personal Money Management*. Chicago: Science Research Associates.

Bakshi, G.S., & Chen, Z. (1994). Baby boom, population aging, and capital markets. *Journal of Business*, 67(2), 165-202.

Becker, A., Deckers, T., Dohmen, T.J., Falk, A., & Kosse, F. (2013). The Relationship between Economic Preferences and Psychological Personality Measures. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.2199369.

Bernoulli, D. (1967) (originally published 1738). *Exposition of a new theory on the measurement of risk*. Farnborough Hants: Gregg Press.

Carducci, B.J., & Wong, A.S. (1998). Type A and risk taking in everyday money matters. *Journal of Business and Psychology*, 12(3), 355-359. http://dx.doi.org/10.1023/A:1025031614989.

Cicchetti, C.J., & Dubin, J.A. (1994). A microeconometric analysis of risk aversion and the decision to self-insure. *Journal of Political Economy*, 102(1), 169-186. http://dx.doi.org/10.1086/261925.

Cohn, R., Lewellen, W., Lease, R., & Schlarbaum, G. (1975). Individual Investor Risk Aversion and Investment Portfolio Composition. *The Journal of Finance*, 30(2), 605-620. http://dx.doi.org/10.2307/2978738.

Corter, J.E., & Chen, Y.J. (2006). Do investment risk tolerance attitudes predict portfolio risk? *Journal of Business and Psychology*, 20(3), 369-381. http://dx.doi.org/10.1007/s10869-005-9010-5.

Costa Jr, P.T., & McCrae, R.R. (1992). *Neo personality inventory–revised (neo-pi-r) and neo five-factor inventory (neo-ffi) professional manual*. Odessa,FL: Psychological Assessment Resources.

De Bortoli, D., da Costa Jr, N., Goulart, M., & Campara, J. (2019). Personality traits and investor profile analysis: A behavioral finance study. *PloS one*, 14(3), 1-18. https://doi.org/10.1371/journal.pone.0214062.

Deck, C., Lee, J., Reyes, J., & Rosen, C. (2008). Measuring Risk Attitudes Controlling for Personality Traits. *Economics Research Working Paper Series*, 46, 1-34.

Durand, R.B., Newby, R., & Sanghani, J. (2008). An intimate portrait of the individual investor. *The Journal of Behavioral Finance*, 9(4), 193-208. http://dx.doi.org/10.1080/15427560802341020.

Durand, R.B., Newby, R., Peggs, L.,& Siekierka, M. (2013). Personality. *Journal of Behavioral Finance*, 14(2), 116-133. http://dx.doi.org/10.1080/15427560.2013.791294.

Durand, R., Newby, R., Tant, K., & Trepongkaruna, S. (2013). Overconfidence, overreaction and personality. *Review of Behavioral Finance*, 5(2), 104-133.

Filbeck, G., Hatfield, P., & Horvath, P. (2005). Risk aversion and personality type. *The Journal of Behavioral Finance*, 6(4), 170-180. http://dx.doi.org/10.1207/s15427579jpfm0604_1.

Friedman, B. (1974). Risk Aversion and the Consumer Choice of Health Insurance Option. *Review of Economics & Statistics*, 56(2), 209-214. http://dx.doi.org/10.2307/1924441.

Goldberg, L.R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48(1), 26-34. http://dx.doi.org/10.1037/0003-066X.48.1.26.

Grable, J., Lytton, R., & O'Neill, B. (2004). Projection bias and financial risk tolerance. *The Journal of Behavioral Finance*, 5(3), 142-147. http://dx.doi.org/10.1207/s15427579jpfm0503_2.

Gullone, E., & Moore, S. (2000). Adolescent risk-taking and the five-factor model of personality. *Journal of adolescence*, 23(4), 393-407. http://dx.doi.org/10.1006/jado.2000.0327.

Hawley, C.B., & Fuji, E.T. (1993). An empirical analysis of preferences for financial risk: Further evidence on the Friedman–Savage model. *Journal of Post Keynesian Economics*, 16(2), 197-204.

Hilgert, M.A., Hogarth, J.M., & Beverly, S.G. (2003). Household financial management: The connection between knowledge and behavior. *Federal Reserve Bulletin*, 89, 309-322.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica,* 47(2)*,* 263-291. http://dx.doi.org/10.2307/1914185.

Kannadhasan, M. (2015). Retail investors' financial risk tolerance and their risk-taking behaviour: The role of demographics as differentiating and classifying factors. *IIMB Management Review*, 27(3), 175-184. http://dx.doi.org/10.1016/j.iimb.2015.06.004.

Kogan, N., & Wallach, M.A. (1964). *Risk taking*: *A study in cognition and personality*. New York: Holt, Rinehart & Winston.

Kourtidis, D., Šević, Ž., & Chatzoglou, P. (2011). Investors' trading activity: A behavioural perspective and empirical results. *The Journal of Socio-Economics*, 40(5), 548-557. http://dx.doi.org/10.1016/j.socec.2011.04.008.

Kowert, P.A., & Hermann, M.G. (1997). Who takes risks? Daring and caution in foreign policy making. *Journal of Conflict Resolution*, 41(5), 611-637. http://dx.doi.org/10.1177/0022002797041005001.

Markey, C.N., Markey, P.M., Ericksen, A.J., & Tinsley, B.J. (2006). Children's behavioral patterns, the Five-Factor model of personality, and risk behaviors. *Personality and Individual Differences*, 41(8), 1503-1513. http://dx.doi.org/10.1016/j.paid.2006.06.007.

Markowitz, H. (1952). Portfolio selection. *The Journal of Finance,* 7(1)*,* 77-91.

McClelland, D. (1961). *The Achieving Society.* New York: John Wiley & Sons. http://dx.doi.org/10.2307/2504238.

McInish, T.H., Ramaswami, S.N., & Srivastava, R.K. (1993). Do More Risk-Averse Investors Have Lower Net Worth and Income? *Financial Review*, 28(1), 91-106. http://dx.orcid.org/0000-0002-5236-2375.

Mittal, M., & Vyas, R.K. (2008). Personality type and investment choice: an empirical study. *The ICFAI University Journal of Behavioral Finance*, 5(3), 7-22.

Morin, R.A., & Suarez, A.F. (1983). Risk aversion revisited. *The Journal of Finance*, 38(4), 1201-1216.

Myers, I.B., McCaulley, M.H., & Most, R. (1985). *Manual, a guide to the development and use of the Myers-Briggs type indicator*. Consulting Psychologists Press.

Nga, J.K.H., & Ken Yien, L. (2013). The influence of personality trait and demographics on financial decision making among Generation Y. *Young Consumers,* 14(3), 230-243. http://dx.doi.org/10.1108/YC-11-2012-00325.

Nicholson, N., Soane, E., Fenton-O'Creevy, M., & Willman, P. (2005). Personality and domain-specific risk taking. *Journal of Risk Research*, 8(2), 157-176. 6. http://dx.doi.org/10.1080/1366987032000123856.

Oehler, A., Wendt, S., Wedlich, F., & Horn, M. (2018). Investors' personality influences investment decisions: Experimental evidence on extraversion and neuroticism. *Journal of Behavioral Finance*, 19(1), 30-48. http://dx.doi.org/10.1080/15427560.2017.1366495.

Pak, O., & Mahmood, M. (2015). Impact of personality on risk tolerance and investment decisions. *International Journal of Commerce and Management*, 25(4), 370-384. http://dx.doi.org/10.1108/IJCoMA-01-2013-0002.

Pålsson, A.M. (1996). Does the degree of relative risk aversion vary with household characteristics? *Journal of economic psychology*, 17(6), 771-787. http://dx.doi.org/10.1016/S0167-4870(96)00039-6,

Pan, C.H., & Statman, M. (2013). Investor Personality in Investor Questionnaires. *Journal of Investment Consulting*, 14(1), 48-56.

Parashar, N. (2010). An empirical study on personality variation and investment choice of retail investors. *Journal of Management and Information Technology*, 2(1), 33-42.

Pinjisakikool, T. (2018). The influence of personality traits on households' financial risk tolerance and financial behaviour. *Journal of Interdisciplinary Economics*, 30(1), 32-54.

Riley Jr, W.B., & Chow, K.V. (1992). Asset allocation and individual risk aversion. *Financial Analysts Journal*, 48(6), 32-37. http://dx.doi.org/10.2469/faj.v48.n6.32.

Shaw, K.L. (1996). An empirical analysis of risk aversion and income growth. *Journal of Labor Economics*, 14(4), 626-653. http://dx.doi.org/10.1086/209825.

Sung, J., & Hanna, S.D. (1996). Factors related to risk tolerance. *Financial Counseling and Planning*, 7, 11–19.

Tjandrasa, B.B., & Tjandraningtyas, J.M. (2018). The Effects of Personality Types and Demographic Factors on Overconfidence Bias and Decision Making of Investment Types. *Petra International Journal of Business Studies*, 1(2), 57-62.

Trang, P., & Khuong, M. (2016). The Impact of the Big Five Traits and Mood on Investment Performance: A Study of Individual Investors in Vietnam. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.2883425.

Von Neumann, J., & Morgenstern, O. (1947). *Theory of Games and Economic Behavior*. Princeton: Princeton University Press.

Wallach, M.A., & Kogan, N. (1961). Aspects of judgment and decision making: Interrelationships and changes with age. *Behavioral science*, 6(1), 23-36. http://dx.doi.org/10.1002/bs.3830060104.

Wang, A. (2009). Interplay of investors' financial knowledge and risk taking. *The Journal of Behavioral Finance*, 10(4), 204-213. http://dx.doi.org/10.1080/15427560903369292.

Wang, H., & Hanna, S.D. (1997). Does risk tolerance decrease with age? *Financial Counseling and Planning*, 8(2), 27-31.

Weber, E.U., & Milliman, R.A. (1997). Perceived risk attitudes: Relating risk perception to risky choice. *Management science*, 43(2), 123-144.

Zhuan, A.S., Ying, C.C., Boon, K.S., Hui, S.L., & Hong, W.C. (2016). *The effect of personality traits and demographic characteristics towards risk tolerance and investment decision making.* Doctoral dissertation, UTAR. Perak: University Tunku Abdul Rahman.

Zouari, G., & Abdelmalek, I. (2020). Financial innovation, risk management, and bank performance. *Copernican Journal of Finance & Accounting*, 9(1), 77-100. http://dx.doi.org/10.12775/CJFA.2020.004.