Exploring Relationship between Impulsive Personality Traits and Financial Risk Behavior of Individual Investors

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Abstract: **It is believed that an individual is rational. He takes financial decisions after thorough evaluation of all available investment alternatives given their risk level and thereby maximizes his wealth. However, Several studies in the recent years have proved that rationality is not the only factor influencing financial decisions of an individual. There are many other factors influencing it. This study seeks to understand impulsive personality trait as a factor affecting financial risk behavior of individuals. It studies degree of risk that an investor can assume in impulsivity. Every individual is impulsive to some extent and this impulsivity affects his decisions including financial decisions. In this study, these impulsive traits are identified and further their impact in financial risk behavior has been studied. It has been found that impulsivity and risk level are positively correlated. Further, no statistically significant difference was found between these impulsive personality traits and varying degrees of risk.**

Keywords: Risk, Impulsive Personality Traits, Financial Risk Behavior, Barrat Impulsiveness Scale 11

Introduction

Investment in today's era is the need of the hour. Every Individual invests some portion of his hard earned income into some fruitful investment. The objective and need of investment may vary but every individual cuts his present consumption for something better in future . The idea behind investing is that money will put to use in a manner that it will grow. This happens because someone else is willing to pay for the use of such funds. Keeping money as cash involves a cost as its value decreases overtime due to inflation. So, Investment does not only increases funds but it also protects the worth of money. Investors invest for future returns but there may be difference between expected return and realized return. This deviation is called risk. A fixed deposit in a bank may be considered as risk less. However, investment in stock market is risky. An investment option having higher risk factor e.g. stock market will entail more return and vice versa. Individuals differ in their perceptions towards financial risk. There are many empirical studies on factors affecting investment choice or financial risk bearing of individuals. *Subramaniam VA, Athiyaman T (2016)* identified demographic factors such as age, education, investment experience and income of the investors are correlated with their risk tolerance. *Smita Mazumdar (2014)* found risk taking ability of investors increases with financial knowledge. *Syed Tabassum Sultana and Pardhasaradhi (2011)* identified factors like marital status, earnings, occupation and number of dependents. *Sushant Nagpal and B S Bodla (2009)* found lifestyle as a significant factor. *Chitra and Ramya Sreedevi (2011)* found a strong relationship between personality traits and method of investment. It revealed emotional stability as one of the significant factor in influencing investment choice and equity as the most preferred investment.

Numerous studies on risk behavior has proved significant relationship between personality traits and risk tolerance of an individual. In this study, we seek to explore relationship between impulsive personality traits and financial risk behavior of an individual using Barratt Impulsiveness Scale 11 (BIS 11) through a questionnaire.

Abbreviations and Acronyms

Barrat Impulsiveness Scale 11 -BIS 11

Literature Review

Author	Research Objectives	Sample and Respondents	Methodology	Result of the study
Thomas and Rajendran (2012)	To know the relationship between BB & K five-way personality types and type of investment choice	systematic sampling method 225 responses	Regression analysis, chi-square test and factor analysis	personality trait of an investor influences the investment choice and the five dimensions, namely adventure, celebrity, individualist, guardian and straight arrow which are significantly related to investor choice and investment type. It is also advised to know the investor personality before investing to avoid unwanted biases in their investment choice
Huei - Wen Lin (2011)	To analyse the relationship between psychological traits, demographics and financial behavioural biases of individual investors of Taiwan stock market and to evaluate the impact of big five personality traits and the demographic variables on investment biases	Convenient sampling of 554 individual investors.	Structural Equation Mode	The analysis revealed that, to avoid losses due to disposition effect and herding the investors with stronger neuroticism personality and conscientiousness personality should set up a stop-loss point and a lock-gain point. The investors with stronger extraversion and openness personality traits should confirm the market information and make up their minds on investing so as to avoid forming the biases of herding and overconfidence. The study further concluded that investment biases of individual investors are significantly related to four personality traits as well as some demographics.
Manish Mittal and Ram krishna Vyas (2011)	To find psychological reasons for gender differences in preference for risk and investment decisions?	Judgemental and convenient sampling method was used to collect data from 428 investor	Mean, ANOVA, chi-square and Mannwhitney U-test were applied to find out their attitudinal difference towards investing.	Women preferred low risk investment and men showed preference towards high risk investment.
Sarah Brown and Karl Taylor (2011)	To analyse the relationship between household finances and personality traits to know the impact of personality traits on	Secondary Data Source: 'British Household Panel Survey' conducted by the		It was found that extraversion and openness to experience influences the decision regarding unsecured debts and financial assets.

	decisions about unsecured debts and financial assets	Institute for Social and Economic Research		Conscientiousness and neuroticism appear to be unimportant in influencing levels of unsecured debt and financial asset holding.
Sayed Rasol Masomi and Sara Ghayekhlo o (2011)	To study the significance of behavioural finance and investor psychology in investment decision-making	23 fund managers of institutional investors operating at Tehran stock exchange		The behaviour of investors is strongly related with the heuristics process than the prospect theory, Anchoring and gamblers fallacy were also found to be prominent. The study concluded that factors such as cultural difference, issues relating to emerging economies, government policies and size of the market influence the decision- making process of the institutional investors.
Chitra and Ramya Sreedevi (2011)	To analyse the influence of seven personality traits on the choice of the investment of the investors & relationship between demographic profile of the investors and method of investment	Systematic random sampling method		A strong relationship was found between personality traits and the method of investment. The study also revealed that the equity investment is mostly preferred by the investors and emotional stability was one of the important factors in influencing the investment decision.
Nidhi Walia and Ravi Kiran (2009	To analyse the investors risk perception towards the mutual fund services assuming complete knowledge about the financial environment	Selective systematic sampling method to get responses from selected investors	Chi-square test	The Average preference scores method revealed that shares are the most risky investment and mutual funds are opined to be the next risky investment. interdependence between income and perception for return from mutual fund and suggested to the Asset management companies to make innovations in their existing services to attract more investors.
Cliff Mayfield, Grady Perdue and Kevin Wooten (2008)	To examine Big Five personality taxonomy with psychological background towards investment attitude	197 students of business school undergraduates	SEM (Structured Equation Modeling)	Men show higher interest towards both short-term and long-term investment than women. It also indicated that an extraverted individual invests their money in short term investment, where an individual with higher neuroticism neglects this type of investment, individuals with openness to experience category engaged in long-term investment. The association between gender

				and risk aversion was found to be not significant, which implies that women are more risk-averse than men
Thomas H. McInsish (1982)	To measure the personality characteristics and locus of control in relation to portfolio risk-using beta values.	3,000 investors using a random sampling	Multiple regression technique to find out the significant factor in terms of risk tolerance	Gender was not significant in explaining risk tolerance level and a negative significance of age was found with personality characteristics and risk. Personality characteristics and locus of control were used to find out the relationship in their portfolio selection and concluded that there was no difference between male and females risk tolerance level.

Objectives Of the Study

Below objectives were identified after going through the extensive literature:

- To identify impulsive personality traits in individuals.
- To study the saving patterns of individuals.
- To find the relationship between impulsive personality traits and financial risk behaviour of Individual decision makers.
- To find if impulsive personality traits have relationship with varying degrees of risk.

Research Methodology

The study is based upon a Primary data collected through a survey in Delhi region to identify the impulsive personality traits of individuals and relate them with their financial risk behavior. Descriptive statistics were obtained and further analysed using Correlation and Kruskal Wallis H Test.

Population and Sample

The Barratt Impulsiveness Scale (BIS-11; Patton et al., 1995) has been used to find impulsive personality traits in terms of six first order factors namely Attention, Cognitive Instability, Motor, Preservance, Self Control and Cognitive Complexity on the basis of a questionnaire designed to assess the personality/behavioral construct of impulsiveness, composed of 30 items describing common impulsive or non-impulsive (for reverse scored items) behaviors and preferences. Further, 10 more objective questions were designed to assess the financial risk bearing level.

On the basis of responses obtained each individual was given a score in the first order factors of impulsiveness. Similarly, financial risk behavior score was also obtained with a minimum score of 15 (weights were assigned to each question). Individuals obtaining risk score of less than 20 were categorized as least risk seekers and increasing risk score implies increasing risk preference of individuals, maximum risk score observed is 31.

Data and Sources Of Data

The study is based upon Primary data collected through a questionnaire from different Businessmen, Professionals and service holders in Delhi in the month of July2017. To collect the data, A total of 215 questionnaires were distributed by e mails and by hand. Out of which 176 were returned . Among them, the questionnaires which contained incomplete information were not considered, remaining 100 responses were used for empirical study. Demographic Variables Age: 30% of population falls in age group of 20-25 years, 42% in 25-30years, 11% in 30-35 years, 7% in 35-40 years and 10% is above 40 years. Gender: 56% Male and 44% Female. Occupation: 5% Business, 45% Professional, 50% Service class.

25% of respondents are earning more than Rs. 50,000/- per month, most of them save more than 30% of their income and invest more in high risk high return profile securities. 18% of respondents are from income group in 35000-50000 per month opting for regular income with low level of risk. Below this are the people who save approximately 10% - 20% of their income and prefer to keep their money in saving bank accounts. It can be said that risk propensity increases with the income level as many of the earlier researchers has concluded.

Theoretical Framework

Impulsivity is a multifactorial construct that involves a tendency to act on a whim, displaying behaviour characterized by little or no forethought, reflection, or consideration of the consequences. Impulsiveness is the act on instinct or without thinking.

Dr David Lewis-Hodgson defined impulsivity (or Impulsiveness) as the act of saying or doing things on the spur of the moment. A personality trait characterised by behaving without giving sufficient consideration to the likely consequences. As a concept, impulsivity covers a wide range of poorly conceived, prematurely expressed, unduly risky, or inappropriate behaviours that often have undesirable and undesired outcomes. It is a trait many would sooner deny than defend.

We prefer to see ourselves as thoughtful, rational, beings. To believe that we take important decisions only after careful reflection and slow deliberation. In fact we far more frequently act on an emotion-driven impulse rather than after logical and reasoned reflection. The impact of this impulsivity is seen in financial decision making. Every personality is found to be impulsive to some extent. In our survey, we studied impulsive behaviour of individuals and categorised them into six factors namely; Attention, Cognitive Instability, Motor, Preservance, Self Control and Cognitive Complexity as per BIS 11 Scale. We further identified the relationship between these impulsive personality traits with financial risk behaviour at varying degrees of risk from low to high.

Hypothesis

Alternate Hypothesis : There is a significant relationship between impulsive personality traits and financial risk behavior of individuals.

Statistical Tools

Data obtained from population is further structured. Descriptive statistics was obtained to study attributes like minimum, maximum and mean personality score. "Motor" was found to be most common impulsive factor. Further Correlations were obtained and Kruskal Wallis H Test was applied to test statistically significant relationship between impulsive personality traits and varying degrees of risk.

Descriptive Statistics

From the data obtained through survey, descriptive statistics has been used to find maximum and minimum personality score. As evident from above table 1, mean score is highest for "Motor". Most of the respondents in the sample are found to have "Motor" as impulsive trait. It may further be inferred that "motor" is the most common first order impulsive factor found in population.

Correlation and Kruskal Wallis H Test In order to test the hypothesis, Correlations were obtained between each impulsive factor and risk score. Pearson's correlation for all factors (range .011 to .176) is positive. It can be said that impulsive personality factors are positively correlated with financial risk. Table 2.1 to 2.6 provide the detailed figures. By applying Correlation we may conclude that "Attention" is highly correlated with risk behaviour (Pearson correlation = .176 and Spearman correlation = .100) & Cognitive Instability is least correlated (Pearson correlation =.011 and Spearman correlation = -.002).

Further, Kruskal Wallis H Test is applied to test statistically significant relationship between impulsive personality traits and varying degrees of risk. To apply this test risk scores were converted into risk categories. Risk score below 20 was considered as low risk, 20-24 as moderate and 25 & above as high. No significant difference was found between impulsive personality factors and risk categories as p value ranges from .087 to .538 (Table 3.2) all are greater than 0.05. Table 3.1 provides mean rank of each factor at three degrees of risk.

Summary Of Results

Financial risk score is positively correlated with impulsive personality factors , Altenative hypothesis is accepted. Further mean rank of risk do not vary to a great extent at different degrees of risk. Kruskal Wallis H test gives all *p* values greater than .05 implying no statistically significant difference between expected and actual degrees of risk for all impulsive traits.

Discussion and Conclusion

Various previous studies has examined many factors affecting financial risk bearing. These significant factors include demographic factors (*Subramaniam VA, Athiyaman T ,2016), financial knowledge(*Smita Mazumdar ,2014), Personality traits (Chitra and Ramya Sreedevi, 2011) and many others. Although these studies have brought to the light many significant factors but least attention was paid towards impulsive personality traits. This study adds a new significant factor to the existing literature. The relationship of impulsive personality factors and financial risk bearing holds true . These results are supported with empirical evidences and add a new significant factor to the existing literature. Since the results are based upon a sample size of 100 respondents in the Delhi state, the relationship may not hold true in every situation. We may conclude that keeping all other significant factors into consideration an individual's investment choice is also influenced to a certain extent by his impulsivity.

Limitations and Future Research

This study brings to the light impulsive behaviour of individuals and its impact on financial risk behaviour. Neverthless, the study suffers from several limitations that should be considered in future research. First, the present study completely relied on Barrat impulsiveness Scale 11 as a measure of impulsivity, other scales might have been used together for more elaborated results. Secondly, an individual's impulsive behaviour may change overtime as his habits and thinking changes. Further,this study does not considers the factors giving rise to different impulsive behaviours. Future research should explore more about impulsivity as a factor influencing financial risk behaviour.

Tables

Table1   Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Attention	100	11	5	16	10.26	2.281	5.204	-.021	.241	-.064	.478
cognitive_instability	100	9	3	12	5.98	1.917	3.676	.503	.241	-.210	.478
Motor	100	16	7	23	13.55	3.735	13.947	.533	.241	-.255	.478
Preservance	100	8	4	12	7.19	1.549	2.398	.341	.241	.087	.478
self_control	100	15	6	21	12.81	4.240	17.974	.163	.241	-1.126	.478
cognitive_complexity	100	12	5	17	11.48	2.665	7.101	-.538	.241	.011	.478
risk_score	100	16	15	31	18.08	2.919	8.519	2.170	.241	5.395	.478
Valid N (listwise)	100										

Table 2.1
Attention
Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.176	.089	1.768	.080[c]
Ordinal by Ordinal	Spearman Correlation	.100 100	.100	.994	.323[c]
N of Valid Cases					

Table2.2
Cognitive Instability
Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.011	.115	.110	.913[c]
Ordinal by Ordinal	Spearman Correlation	-.002 100	.104	-.017	.987[c]
N of Valid Cases					

Table 2.3
Motor
Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.069	.136	.686	.494[c]
Ordinal by Ordinal	Spearman Correlation		.107	.302	.763[c]
N of Valid Cases		.030 100			

Table 2.4

Preservance

Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval Pearson's R	.149	.127	1.487	.140[c]
Ordinal by Ordinal Spearman Correlation	.096 100	.106	.956	.341[c]
N of Valid Cases				

Table 2.5

Self Control

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.138	.091	1.383	.170[c]
Ordinal by Ordinal	Spearman Correlation	.182	.097	1.834	.070[c]
N of Valid Cases		100			

Table2.6

Cognitive Complexity

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.114	.067	1.141	.257[c]
Ordinal by Ordinal	Spearman Correlation	.079 100	.095	.784	.435[c]
N of Valid Cases					

a.   Not assuming the null hypothesis.

b.   Using the asymptotic standard error assuming the null hypothesis.

c.   Based on normal approximation.

Table 3.1

Kruskal-Wallis Test

Ranks

Factors of impulsiveness	risk_category	N	Mean Rank
Attention	Low	81	48.48
	Moderate	13	52.92
	High	6	72.58
	Total	100	
cognitive_instability	Low	81	48.83
	Moderate	13	56.92
	High	6	59.17
	Total	100	
Motor	Low	81	47.53
	Moderate	13	65.92
	High	6	57.17
	Total	100	
Preservance	Low	81	50.03
	Moderate	13	45.88
	High	6	66.83
	Total	100	
self_control	Low	81	49.49
	Moderate	13	50.96
	High	6	63.08
	Total	100	
cognitive_complexity	Low	81	50.13
	Moderate	13	46.65
	High	6	63.83
	Total	100	

Table 3.2
Test Statistics[a,b]

	attention	cognitive_instability	motor	preservance	self_control	cognitive_complexity
Chi-Square	4.038	1.479 2	4.876	2.382	1.239	1.538 2
Df	2		2	2	2	
Asymp. Sig.	.133	.477	.087	.304	.538	.463

a.   Kruskal Wallis Test

b.   Grouping Variable: risk_category

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