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Big five personality traits and Behavioural biases of Individual investors in Indian capital Market

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ABSTRACT

The emerging field of Behavioural finance shows the psychological and sociological issues that have an impact on the decision making process of individual investor. Investors are likely to make different decisions (Kahneman & Tversky 1979). The individual investors can obtain better information about the capital market but their decisions are not completely rational due to the existence of various investment biases. This research paper tries to understand the various Behavioural biases, big five personality traits and Behavioural aspects of the individual investors in Indian capital market. The Behavioural biases included in this study are overconfidence, herd, mental accounting and anchoring biases. The research paper implies that they ignore the importance of the fundamental analysis and to focus on recent upward price performance of the stock. The study clearly shows that investors are biased. These biases are the reflections of their personality traits.

Keywords: Big five personality traits, Behavioural biases, overconfidence, herd, mental accounting, anchoring.

1. Introduction

According to standard financial theory, individual investors are perfectly rational. But the idea of fully rational investors that have perfect control on their decisions to maximize their utility is becoming less popular. In efficient markets investors are considered as rational, unbiased and consistent who make optimal investment decisions without the effects of psyche and emotions (Hayat, Bukhari, & Ghufran, 2006). But actually sometimes emotions and psyche influence their decisions, causing them to behave in an irrational way. Behavioural Finance provides the explanation for these psyche and emotions. Behavioural finance is an emerging field that combines the Behavioural or say Psychological aspects with standard economic and financial theories . It provides explanation of why people make irrational financial

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decisions (Phung, 2008). Behavioural finance explains the irrational behaviour of investors that can affect the stock market prices. It examines how cognitive and emotional errors influence investor's decision making process. The contribution of this field does not mean that it has completely neglected the importance of the fundamental work and the proponents of efficient market hypothesis. But it just tries to eliminate the unrealistic assumptions of traditional economic and financial theories in decision making process to make it more realistic.

The Behavioural finance study covers into two sub topics: Behavioural Finance Micro (BFMI) and Behavioural Finance Macro (BFMA). BFMI focuses individual behaviour but BFMA focuses on the stock market behaviour as a whole. In BFMI, we examine behaviours or biases of individual investors and compare irrational investors to rational investors, as described in classical economic theory, also known as "homo economics," or rational economic man. In BFMA, we detect and describe anomalies in the markets which are against the efficient markets. Efficient Market Hypothesis (EMH) states that markets are always efficient, but in reality markets are not always efficient. An abnormal market behaviour can occur, such as the January effect, Monday effect, seasonal effect which means that human behaviour influences share prices and, therefore, markets (Pompian, 2006). This research paper has focused on BFMI, i.e. the study of individual investor behaviour. The present study assumes that investors of specific personality traits of Indian Stock Market i.e. NSE and BSE can fall prey to Behavioural biases such as overconfidence bias, anchoring bias, herding and mental accounting. Psychology of investors can also play important role in their investment decisions and this is motive behind this study.

The study adapts the Big 5 personality traits from McCrae and Costa. The five-factor model of personality is the dominant paradigm in personality research (Mc crae 2009).

1. Extraversion: A person high in extraversion tends to be more sociable, active, optimistic, fun loving and talkative while someone low in extraversion tends to be reserved, aloof and quiet.

2. Agreeableness: An individual high in agreeableness tends to be trusting altruistic, good natured, empathic and helpful. Yet someone low in agreeableness tends to be clinical rude, suspicious uncooperative, irritable and even manipulative vengeful and ruthless.

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3. Conscientiousness: It refers to the degree of organization control, persistence and motivation to goal directed behaviour. A person high in conscientiousness tends to be lazy, aimless, hedonistic careless

4. Neuroticism: It refers to a person's level of emotional stability. Individuals high in neuroticism are more prone to psychological, distress including negative affectivity such as anger, hostility depression and anxiety.

5. Openness to experience: It refers to the active seeking and appreciation for their own sake. People high in openness are imaginative, curious and openness to unconventional ideas and values. On the other hand, those low in openness tend to be conventional and dogmatic in beliefs and attitudes, set in their ways and emotionally unresponsive.

2. Literature Review

Much of the literature provides the evidence of how financial markets function and how individual investors make decisions in the financial markets. First established in Homo economics is a simple model of human behaviour stated that humans are perfectly rational in their economic decisions (Simon, 1955). However, many psychologists believe that human are not perfectly rational and human behaviour is less governed by rationality than subjective emotions such as love, fear, hate, pleasure and pain. Perfect rationality is only a theoretical concept (Pompian, Behavioural Finance and Wealth Management, 2006).

Standard finance theories explain the financial market using models in which participants are considered to be purely rational. When participants receive new information they update their beliefs and choose alternatives that are normatively acceptable. Unfortunately, with the passage of time some market behaviours could not be explained under this framework and it was argued that some market behaviours can be explained better using those models in which participants behave irrationally (Barberis & Thaler, 2002).

In 1980s a new field was emerged known as Behavioral Finance that combines the psychological and Behavioral theories with traditional financial theories to provide the explanations of why people make irrational decisions (Phung, 2008). "People in standard finance are rational. People in Behavioral finance are normal." Investors are affected by their behavior and psychology in the risk assessment and issue of framing in financial decisions (Statman, 1995). People do not use rational judgment while making financial decisions. Behavioral finance describes why people deviate from optimal investment decisions by incorporating aspects of human nature in financial models (Barber & Odeab, 1999).

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Kahneman and Tversky contributed a lot in the field of Behavioral finance with their work on prospect theory. Earlier it was believed that when people make choices they see the combined net effect of gains and losses for over all evolution of each choice. Researcher used utility concept as the satisfaction for each choices and said that people choose those choices that maximize their utility. Prospect theory indicated that people consider gain and losses differently and make choices on the basis of perceived gains or perceived losses rather than actual gains or actual losses (Phung, 2008). Behavioural Finance explains the cognitive and emotional factors that influence the decision making process of individual, groups and organizations (Ricciardi & Simon, 2011). Gradually Behavioural Finance become a widely adopted filed within finance and acknowledge by many scholars. (Bernéus, Sandberg, & Wahlbeck, 2008).

The numbers of theories have been developed to explain how and why people make decisions with respect to equity investment decision making. The review of important theories ranges from theory of risk tolerance by investors (Bernheim et al., 2001), theory of efficient market hypothesis (Marcowitz, 1965, 1970; Fama and French,1993, 1996), Modern Behavioral finance portfolio theory (Markowitz, 1952; Lintner,1965; Sharpe,1964) and factors and emotional issues theory of Behavioral finance .

Waweru N Metal. (2008) investigated the role of behavioral finance and investor psychology in investment decision making and identified those certain behavioral factors affected the decision making behavior of the investors.

Nagy and Obenberger (1994) conducted a survey on determining the underlying criteria that affect decisions of individual equity investors with substantial holdings in fortune 500 firms. According to empirical evidence, wealth-maximization criteria were found significant among respondents while the effect of recommendations of brokerage houses, individual stock brokers, family members and co-workers were identified as insignificant.

Kiran and Rao (2005) examined whether demographic and psychographic variables were effective on risk-bearing capacity of Indian investors by conducting a sampling survey. By analysing the collected data through multinomial logistic regression and factor analysis (FA) of SPSS, they verified a strong relationship between risk taking attitude and demographic and psychographic variables.

Bennet et al. (2011) sought to identify various factors that influence retail investors' attitude towards investing in equity stock markets. They applied a structured questionnaire to retail

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investors in Tamil Nadu, India. Collected data were analyzed through descriptive statistics and FA. According to the test results, out of the total 26 variables, it was found out that five factors (investors' tolerance for risk, strength of the Indian economy, media focus on the stock market, political stability and government policy towards business) had a very high influence over retail investors' attitude towards investing in equity stocks.

Shanmughama and Ramyab (2012) tried to explain underlying factors that affect individual investors' behaviour in context of the theory of reasoned action (Fishbein and Ajzen, 1975) and the theory of planned behaviour (Ajzen, 1985; Ajzen, 1991).

They collected the data by applying a questionnaire to the respondents living in Coimbatore city of Tamil Nadu State, India.

By performing regression analysis, they found that social factors, namely social interactions and media, influenced the trading behavior (trading frequency) of individual investors.

Psychographic factors play an important role in determining behavior of investors. These factors include gender, investor-life-cycle-stage, age, income and likewise. One of the important factors that play significant role in determining investor behavior is his or her personality (Sadi, Ghalibaf, Rostami, Gholipour, & Gholipour, 2011).

Marilyn MacGruder Barnewall distinguished investors into two simple types to help investment advisors to understand the nature of their clients. These include Active Investors and Passive Investors. Passive investors are those who became passively without great efforts. They became wealthy by inheriting the wealth of their parents or by risking the capital of others rather than their own. In contrast Active investors are those who earned their own wealth by risking their own capital. Passive investors need high security while Active investors have more tolerance for risk (Barnewall, 1987). Bailard, Biehl and Kaiser (BB&K) developed Five-Way Model by adding more dimensions in Barnewall's model for better analysis of investor's personality.

Research indicated that investors' behavior will be affected by personality traits, interpretation of information, responses of sentiments, return and risk (Maital et al; 1986). There were many researches using various dimensions to deal with the measurements of personality traits, Myers-Briggs Type Indicator (MBTI) by (Myers, McCaulley, 1985); Big five personality traits (Costa , McCrae, 1992).

Mental Accounting

Mental accounting is a process of mentally coding, categorizing, and evaluating cash flow, i.e., recording particular expenditures and revenues in various mental accounts (Thaler, 1999). The

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mental accounting effect undermines the principle of substitutability, which claims that money has no label, i.e., that the source of funds is irrelevant in the spending of them.

Overconfidence:

There are several dimensions to confidence. It can give more courage, and is often viewed as a key to success. Although confidence is often encouraged and celebrated, it is not the only factor to success. The investors who are cautious and analytical can achieve success and others have to withdraw. Yet, confidence, especially self-confidence, is often viewed as a positive trait. Sometimes, the investors overestimate their predictive skills or assuming more knowledge then they have. Many times it leads excessive trading.

Anchoring:

It describes the common human tendency to rely too heavily, or 'anchor' on one trait or piece of information when making decisions. When presented with new information, the investors tend to be slow to change or the value scale is fixed or anchored by recent observations. They are expecting the trend of earning is to remain with historical trend, which may lead to possible under reactions to trend changes.

Herding effect

Herding effect in financial market is identified as tendency of investors' behaviors to follow the others' actions. Practitioners usually consider carefully the existence of herding, due to the fact that investors rely on collective information more than private information can result the price deviation of the securities from fundamental value; therefore, many good chances for investment at the present can be impacted. Academic researchers also pay their attention to herding; because its impacts on stock price changes can influence the attributes of risk and return models and this has impacts on the viewpoints of asset pricing theories (Tan, Chiang, Mason & Nelling, 2008, p.61).

3. Significance of Study

This study has the significance for the individual investor, financial planners, financial managers and financial advisors. Investors with any personality trait will gain the knowledge about the respective bias that performs critical role while making financial decisions. By gaining the knowledge about the bias they can take steps so as to avoid the interruption of the biases while making financial decisions. Financial planners, financial managers and financial advisors by gaining the knowledge of the personality traits of the investor easily perceive types of investments that best suits the investor. Following are the objectives of the study.

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4. Objectives:

1. To identify the influence of personality traits on the investment biases.

2. To analyse the impact of demographic variables on the investment biases

5. Hypotheses:

Hypothesis 1:

Ho: There is no significant relationship between demographic variables and behavioral biases.

H1: There is a significant relationship between demographic variables and behavioral biases.

Hypothesis 2:

Ho: Personality traits have no significant influence on the behavioral biases.

H1: Personality traits have significant influence on the behavioral biases.

6. METHODOLOGY

6.1) Data Collection, Questionnaire Development and Sample

The present study is a descriptive survey in respect of its nature and because of its practical aim. This study performs a cross-section analysis via Structural Equation Modeling (SEM) that constructs a comprehensive path to link five types of personality traits with three proposed behavioral biases.

Objective of the study is to find out the relation between the demographics variables (age, gender, education qualification and occupation), investors personality traits and Behavioural biases. Structure Equation Modeling (SEM) that permit for the simultaneous estimation and testing of relationship between the two or more dependent and independent variables. Causal process is represented by a series of structural equations that can be modeled graphically to help in conceptualization of theoretical framework (Byrne, 2001). For analysis of data SPSS 16 and AMOS 20 are used. For the purpose of study a survey was conducted from clients and dealers of brokerage house in Surat city.

Our primary data set for this research was information through circulation of questionnaire to 100 clients of brokerage firms from Surat city, Gujarat , India on their investment behaviour. The investment and behavioural traits are assessed by 5-point Likert scales with end points labelled “strongly agree” and “strongly disagree”, “very important” to “irrelevant”

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and “always” to “never.” Therefore data from a total of 73 samples were included in construction of the structural equation model[SEM].

Questionnaire was used as a data collection tool. Questionnaire was consisting of 3 sections. First section of the questionnaire demography section it includes mainly age, gender, education qualification and occupation. The second section consists of personality traits like extraversion, neuroticism, conscientiousness, openness, and agreeableness. Third section includes questions about investment biases of investors.

6.2) Demographic profile of INVESTORS

Demographical profile		Frequency and frequency (in %)	
1. Gender	Male	54	74
	Female	19	26
2. Age	18-25	44	60.3
	26-35	21	28.8
	37-45	8	11.0
3. Education qualification	Up to higher secondary level	19	26
	Graduate level	26	35.6
	PG level	28	38.4
4. Marital status	Married	48	65.8
	Unmarried	25	34.2
5. Occupation	professional	23	31.5
	Self employed	16	21.9
	Salaried people	34	46.6
6. Annual income	up to 2 lakhs	24	32.9
	2 to 5 lakhs	38	52.1
	Above 5 lakhs	11	15.1

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6.3) Descriptive statistics for items on the questionnaire:

Item Statistics

	Mean	Std. Deviation	N
N1	3.84	1.014	73
N2	3.42	.927	73
E1	3.12	1.079	73
E2	3.22	1.044	73
A1	3.30	.938	73
A2	3.66	1.017	73
O1	3.30	1.187	73
O2	3.26	1.080	73
C1	3.36	1.072	73
C2	3.38	1.022	73
H1	3.75	.983	73
H2	3.26	1.028	73
H3	3.47	1.055	73
H4	3.19	1.163	73
M1	3.38	.981	73
M2	3.12	1.142	73
OV1	3.58	.956	73
OV2	3.47	.944	73
AN1	3.23	1.137	73
AN2	2.85	1.198	73
AN3	3.11	.978	73

N= Neuroticism , E= Extraversion, O= Openness , C= Conscientiousness, A= Agreeableness, OV= overconfidence, AN= Anchoring, H= herding behaviour, M= mental accounting.

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6.4) Reliability of Data

	VARIABLES	CRONBACH α
1	Overconfidence	.510
2	Herding Behaviour	.646
3	Anchoring	.550
4	Mental accounting	.577
5	Agreeableness	.523
6	Openness	.504
7	Conscientiousness	.536
8	Neuroticism	.608
9	Extraversion	.547

To check the reliability of data Cronbach Alpha is used and if its values are closer to 1 the questionnaire will be more reliable. As the average of Cronbach alpha values for all the variables is greater than the 0.5, it shows the reliability of the questionnaire.

7. Analysis & Results Of Data

In this study Structure Equation Modeling (SEM) was used to estimate and test how latent variables and their dimensions are related with each other. After extensive literature review, two hypothetical structure equation models were anticipated and analyzed with the software AMOS 20 version respectively.

The research investigated the relationship between personality traits and demographic characteristics with Behavioural biases. Factors were confirmed applying the factor confirmatory analysis on AMOS 20, all factors were confirmed. In the model personality traits was independent variable represented by X, investment biases are dependent variables and represented by Y, the level of significance is 0.05. The P- value calculated by software show that personality traits are significantly related with investment.

Personality traits are the internal characteristics of investor's biases have influence on the investment biases and shown in the Structure Equation Modeling (SEM) in following figure 1. The model shows that different personality traits are significantly related with investment biases.

Similar the model II was constructed to analyze the influence of demographic characteristics on the investment biases. So the 2nd model is also fit.

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7.1) STRUCTURAL RELATIONSHIP BETWEEN PERSONALITY TRAITS AND INVESTMENT BIASES

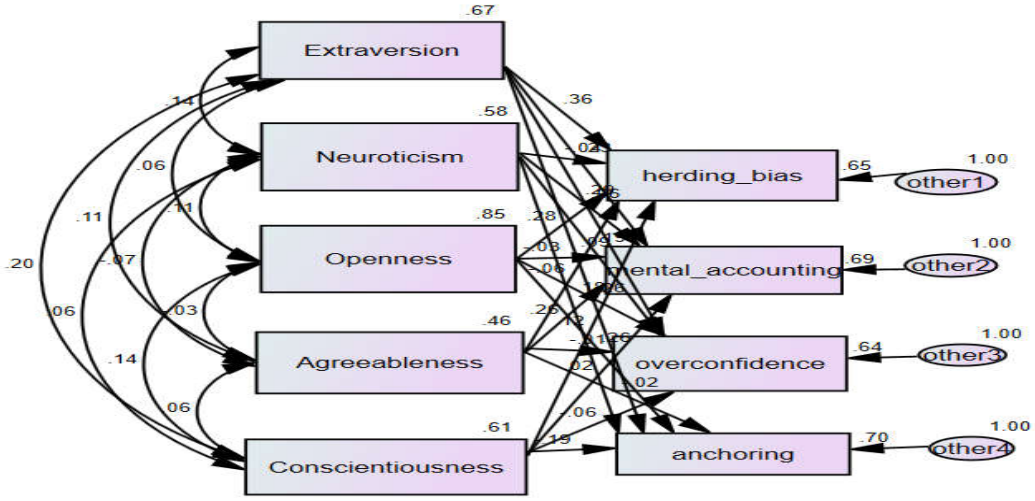

Figure :1 Structural Equation Model -1 : RELATIONSHIP BETWEEN PERSONALITY TRAITS AND INVESTMENT BIASES

The structural relationship between personality traits and investment biases is analysed by employing SEM and the standardized structural coefficients are presented in **Table 7.1**. According to financial behavioural theory, there are evidences available to show that there are significant relationships among personality traits and behavioural biases. Investor would lack confidence when they have anxiety traits (Stone et al 2001).

Table 7.1) Standardized Structural Coefficients of the Relationship between Personality Traits and Investment Biases

			Estimate	S.E.	C.R.	P
herding_bias	<---	Neuroticism	-.041	.106	-.382	.702
herding_bias	**<---**	**Openness**	**.277**	**.086**	**2.724**	**.001**
herding_bias	<---	Agreeableness	-.058	.118	-.489	.625
herding_bias	**<---**	**Extraversion**	**.357**	**.103**	**3.454**	***
herding_bias	<---	Conscientiousness	.120	.106	1.132	.258

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			Estimate	S.E.	C.R.	P
mental_accounting	**<---**	**Extraversion**	**.229**	**.110**	**2.090**	**.037**
overconfidence	**<---**	**Extraversion**	**.263**	**.126**	**2.628**	**.041**
anchoring	<---	Extraversion	.088	.110	.800	.424
mental_accounting	**<---**	**Neuroticism**	**.294**	**.113**	**3.199**	**.009**
overconfidence	<---	Neuroticism	.189	.104	1.815	.069
anchoring	<---	Neuroticism	.184	.114	1.621	.105
mental_accounting	<---	Openness	-.030	.091	-.325	.745
overconfidence	**<---**	**Openness**	**.256**	**.084**	**2.042**	**.002**
anchoring	**<---**	**Openness**	**.258**	**.092**	**2.413**	**.005**
mental_accounting	**<---**	**Agreeableness**	**.257**	**.125**	**2.450**	**.040**
overconfidence	<---	Agreeableness	-.006	.115	-.053	.958
anchoring	<---	Agreeableness	-.016	.126	-.128	.898
mental_accounting	**<---**	**Conscientiousness**	**.270**	**.128**	**2.705**	**.003**
overconfidence	<---	Conscientiousness	-.063	.103	-.605	.545
anchoring	<---	Conscientiousness	-.188	.113	-1.663	.096

*Note: *** indicates significant at one per cent level*

Above table shows that personality traits have significant effect on behavioural biases of investors. Study reveals that personality trait – openness has significant impact on Herding, overconfidence and anchoring biases, Extraversion has significant impact on herding bias , mental accounting and overconfidence. Neuroticism has significant impact on mental accounting bias. Agreeableness has significant impact on mental accounting bias and Conscientiousness has significant impact on overconfidence behavioural bias.

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Table 7.2) Model Fit Parameters of the Relationship Between personality Traits and Investment Biases

CMIN/DF	P-Value	GFI	CFI	RMR	RMSEA
1.799	0.000	0.99	0.96	0.01	0.031

It indicates an excellent fit with chi-square statistic of 1.799.The Goodness of Fit Index (GFI) is 0.99 and Comparative Fit Index (CFI) is 0.96.These GFI and CFI indicate perfect fit. The standardized Root Mean Residual (RMR) is 0.01 and Root Mean Square Error of Approximation (RMSEA) is 0.031 indicating excellent fit.

7.3) STRUCTURAL RELATIONSHIP BETWEEN PERSONALITY TRAITS AND Demographic Variables

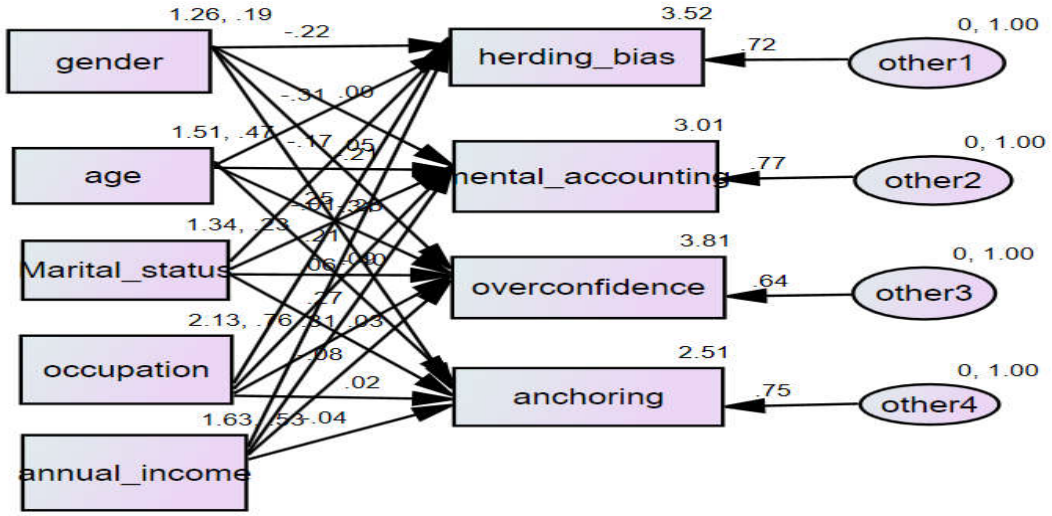

Figure :2 Structural Equation Model -2 : RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND INVESTMENT BIASES

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Table 7.3) Regression Weights:

			Estimate	S.E.	C.R.	P	Label
herding_bias	**<---**	**gender**	**-.218**	**.195**	**-1.120**	**.026**	
mental_accounting	<---	age	-.207	.132	-1.574	.115	
overconfidence	**<---**	**Marital_status**	**-.397**	**.159**	**-2.494**	**.013**	
anchoring	<---	occupation	.024	.102	.236	.813	
anchoring	<---	annual_income	-.040	.121	-.334	.739	
overconfidence	<---	annual_income	-.079	.103	-.761	.447	
mental_accounting	**<---**	**annual_income**	**.273**	**.123**	**2.209**	**.027**	
herding_bias	**<---**	**annual_income**	**.205**	**.117**	**1.758**	**.079**	
overconfidence	**<---**	**occupation**	**.306**	**.087**	**3.526**	***	
mental_accounting	<---	occupation	.060	.104	.581	.561	
herding_bias	**<---**	**occupation**	**.254**	**.098**	**2.582**	**.010**	
mental_accounting	<---	Marital_status	-.014	.190	-.075	.940	
herding_bias	<---	Marital_status	-.175	.180	-.972	.331	
anchoring	<---	Marital_status	.033	.186	.180	.858	
herding_bias	**<---**	**age**	**-.309**	**.125**	**-2.480**	**.013**	
overconfidence	**<---**	**age**	**-.227**	**.110**	**-2.054**	**.040**	
anchoring	<---	age	.089	.129	.689	.491	
mental_accounting	<---	gender	.005	.206	.024	.981	
overconfidence	<---	gender	.047	.172	.274	.784	
anchoring	**<---**	**gender**	**.307**	**.201**	**1.528**	**.026**	

Above table shows that demographic variables have significant effect on behavioral biases of investors. Study reveals that demographic variables – gender has significant impact on Herding and anchoring biases, age has significant impact on herding bias and overconfidence. Marital status has significant impact on herding bias and anchoring bias. Occupation has significant impact on herding bias and overconfidence and annual income has significant impact on herding bias and mental accounting.

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7.4) Model Fit Parameters of the Relationship between Demographic variables and Investment Biases

The present study analyses that model 1 between personality traits and Behavioural biases are fit according to the fitness criteria of SEM on the basis of AMOS 20 results.

Chi- Square = 39.323

D.F = 16

CMIN/DF	P-Value	GFI	CFI	RMR	RMSEA
2.457	0.040	0.97	0.95	0.04	0.052

It indicates a Model fit with chi-square statistic of 2.457.The Goodness of Fit Index (GFI) is 0.97 and Comparative Fit Index (CFI) is 0.93.These GFI and CFI indicate perfect fit. The standardized Root Mean Residual (RMR) is 0.04 and Root Mean Square Error of Approximation (RMSEA) is 0.052 indicating model fit.

8. Conclusion :

This paper examines the relationship of demographics and Big Five personality Traits with Behavioural biases by constructing the two structure equation models. The conclusion of this study that personality traits openness has significant impact on Herding, overconfidence and anchoring biases, Extraversion has significant impact on herding bias, mental accounting and overconfidence. Neuroticism has significant impact on mental accounting bias. Agreeableness has significant impact on mental accounting bias and Conscientiousness has significant impact on overconfidence behavioural bias.

While demographics variables have also significant relationship with Behavioural biases and risk taking behaviour. On the basis of given data both hypotheses are accepted are showed that demographic characteristics has significant relationship with investment biases (herding, mental accounting and overconfidence). On the basis of the results some suggestions can be given for the investors that are as follows.

Investors with the trait of Extraversion and openness should make the investment decision after investigating the market information in order to avoid formation of the herding bias.

Investors with the trait of Extraversion and openness should consult with the financial planners and experienced individuals as well as confirm the market information to avoid the formation of overconfidence bias.

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9. References :

1. Barber, B.M., Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly Journal of Economics*, 116(1), 261-292.
2. Barberis, N., & Thaler, R. (2002). A Survey of Behavioural Finance. *National Bureau of Economic Research.*
3. Bailard, T.E., Biehl, D. L., & Kaiser, R .W.(1986). Personal Money Management (5th ed.). *Chicago, III.: Science Research Associates.*
4. Barber, B. M., & Odean, T. (1999). The Courage of Misguided Convictions. *Financial Analysts Journal.*
5. Barnewall MacGruder M (1988). Examining the Psychological Traits of Passive and Active Investors. *Journal of Financial Planning*, available at www. fpanet.org/journals/ articles/1988_issues
6. Biais, B., Hilton, D., Mazurier, K., & Pouget, S. (2005). Judgemental Overconfidence, Self-Monitoring, and Trading Performance in an Experimental Financial Market. *Review of Economic Studies*, 287–312.
7. Bhushan,P. & Medury, Y. (2013). Gender Differences in Investment Behaviour among Employees. *Asian Journal of Research in Business Economics and Management,* 3 (12), 147-157.
8. Bondt, W. F. (1993). Betting on Trends: Intuitive Forecast of financial risk and returns. *International Journal of Forecasting*, 335-371.
9. Costa, P. T. Jr., & McCrae, R.R.(1992). Revised NEO Personality Inventory and NEO Five-Factor Inventory: Professional Manual. *FL: Psychological Assessment Resources.*
10. Chan, KC, Jiang, X, Xu, N & Yi, Z. (2013). Analyst Coverage, Analyst Optimism, and Stock Price Crash Risk: Evidence from a Transitional Economy. *Pacific-Basin Finance Journal*. 25, 217-239.
11. Chandra, A. & Kumar, R.(2012) . Factors Influencing Indian Individual Investor Behaviour: Survey Evidence*, Decision*, 39(3). 141-167.
12. Chen, G. , Kim, KA. , Nofsinger, JR and Rui.(2007) .Trading Performance, Disposition Effect, Overconfidence, Representativeness Bias, and Experience of Emerging Market. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=957504.
13. Daniel, K., Hirshleifer, D., & Subrahmanyam, A. (1998). Investor Psychology and Security Market under- and Overreactions. *The Journal of Finance*, 1839-1885.
14. De Bondt, WFM. & Forbes, WP. (1999). Herding in analyst earnings forecasts: evidence from the United Kingdom, *European Financial Management*, 5(2). 143-163.

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15. Fama, Eugene F. (1998). Market efficiency, Long term Returns, and Behavioural Finance. *Journal of Financial Economics*, 49:3, 283-306.
16. Fredman, A. J. (1996). Wrestling with risk: a multi headed concept with no single measure. *Associates of America Individual Investors*. 25-30.
17. Kahneman, D., Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*. 47(2), 263-291.
18. Maital,S., Filer, R.,& Simon, J.(1986) . What do people bring to the stock market (beside money)? *The Economic Psychology of Stock Market Behaviour*.
19. B. Gilad and S. Kaish (Eds.), Handbook of Behavioural Economics Behavioural Macroeconomics, Greenwich, Connecticut, JAI Press Inc, 273-307
20. Markowitz, H. M. (1952). Portfolio selection. *Journal of finance*, 7 (1), 77-91.
21. Maital, Filer, & Simon. (1986). What do people bring to the stock market (beside money)?. *The Economic Psychology of Stock Market Behaviour*.
22. Myers, I.B., & McCaulley ,M. H.(1985) Manual: A guide to the Development and Use of the Myer Briggs Type Indicator. Palo Alto, *CA: Consulting Psychologist Press, Inc.*
23. McCrae, R.R., & Costa, P.T. (1997). Personality trait structure as human universal. American Psychologist, 52, 509-516.
24. Nofsinger. (2002). *Overconfidence*. Retrieved December 1, 2011, from Behavioural Finance: http://www.overconfidence.behaviouralfinance.net/
25. Odean, T. (1999). Do investors trade too much?. *American Economic Review*. 89(5). 1279–1298.
26. Pompian M. (2006). Behavioural Finance and Wealth Management: Building Optimal Portfolios that account for investor biases. Hoboken, NJ: John Willey & Sons, Inc.
27. Phung, A. (2008). *Behavioural Behavioural Finance, Key Concepts*. Retrieved September 14, 2011, from Investopedia: http://www.investopedia.com/university/Behavioural _finance/Behavioural 2.asp#axzz1dr6HZgKT
28. Ricciardi, Victor. (2008). The Psychology of Risk: The Behavioural Finance Perspective. Wiley. online.
29. Sharma, S., Mukherjee, S., Kumar, A. and Dillon, W. R. (2005) A Simulation Study to Investigate the Use of Cutoff Values for Assessing Model Fit in Covariance Structure Models. *Journal of Business Research*, 58(1), 935-43.

30. Shefrin, H. & Statman, M. (1985). *The Disposition to Sell Winners too Early and Ride Losers too Long: Theory and Evidence.* Journal of Finance. 40(3). 777-79.
31. Statman (1999) . Behavioural Finance: Past Battles and Future *Engagements*. *Financial Analysts Journal*, 55(6). 18-27.
32. Steiger, J. H. (2007) Understanding the Limitations of Global Fit Assessment in Structural Equation Modelling. *Personality and Individual Differences*. 42(5). 893-898.
33. Tabachnick, B. and Fidell, L. (2006) Cleaning Up Your Act. Screening Data Prior to analysis, Using Multivariate Statistics Sixth edition, 5, 61-116, Pearson Education, Peachpit, San Francisco, CA.
34. Tan, L., Chiang, T. C., Mason, J. R. and Nelling, E. (2008). Herding behaviour in Chinese stock markets: An examination of A and B shares. *Pacific-Basin Finance Journal* , 16 (1-2), 61–77.
35. Thaler, RH. (1999). Mental Accounting Matters. *Journal of Behavioural Decision Making.* 12(3). 183-206.

APPENDIX

Fit Indices and their acceptable Threshold levels

Fit Index	Acceptable threshold levels	Description	Reported values For personality traits and investment bias	Reported values For demographic variables and investment bias
	Absolute fit indices			
Chi-Square $\chi 2$	Low $\chi 2$ relative to degrees of freedom with an insignificant *p* value [p > 0.05]	Inferential statistic, sensitive to sample size [Gerbing & Anderson 1985]	28.78	39.323
Relative $\chi 2$ [$\chi 2$/df]	$\chi 2$ statistic adjusted by its degrees of freedom [Kline, 2004]: Value of $\chi 2$/df ≤ 3.	Adjusts for sample size.	1.799	2.457
RMSEA	Values less than 0.07 [Steiger, 2007]	Has a known distribution. Favours parsimony.	0.031	0.052
GFI	Values ≥ 0.90	Scaled between 0 and 1, with higher values indicating better model fit.	0.99	0.97
RMR	Good models have small RMR [Tabachnik and Fidell, 2006]	The average squared differences between the residuals of the sample covariances and the residuals of the estimated covariances.	0.01	0.04
CFI	Values greater than 0.95	Normed, 0-1 range.	0.96	0.95