ARE BEHAVIORAL BIASES INFLUENCED BY DEMOGRAPHIC CHARACTERISTICS & PERSONALITY TRAITS? EVIDENCE FROM PAKISTAN

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Abstract

The study investigates the influence of demographics (residential area, age, gender, marital status, education background) and personality traits (extraversion, openness, conscientiousness, neuroticism, and agreeableness) on the financial behavioral biases (overconfidence, herding/mass behavior and disposition effect) and risk taking behavior in Pakistan. The study will be beneficial for the financial advisors and individual investors. As it will help financial advisor to know potential behavioral biases in each type of investors while making investment decision and therefore they can advise investors properly to mitigate such biases. Personality dimensions are categorized under Big Five Personality model. Questionnaire survey method is used to collect the data from a Sample size of 225 respondents that includes bankers, finance students as well as investors. Structure equation modeling (SEM) analysis is used to analyze the impact of personality traits and demographics on the investment biases through Amos 20. The results show that big five personality traits have a significant relationship with overconfidence, herding/mass behavior and risk taking except disposition effect.

Keywords: Personality Traits, Investment Biases, Risk Taking, Demographic Characteristics

Introduction

Phycology plays an important role in explaining the financial behavior of investors and making the financial decision. As the psychology is involved in investment decision making, cognitive errors influence the financial decisions. When investors face uncertain conditions they make different decisions (Kahneman & Tverskey, 1979). To make profit from the optimal investment decisions they may follow the professional investor's recommendation or collect the related information from other sources. According to Kahneman and Tverskey (1979)'s prospect theory the psychological factors of investors are responsible for the deviation of actual decision making from rationality, Simon's (1957) argument of the bounded rationality also confirmed the prospect theory. Thus investors often tend to make systematic errors that lead toward acceptable investment choices but don't result in optimal decision.

According to Endler & Magnusson (1976) psychological and external factors are responsible for formation of human behavior. Maital, 1986 directed that behavior of investor will be affected by the personality traits, information interpretation, risk and return and responses of sentiments.

Many researches were conducted for the measurement of the personality using different dimensions i.e. external internal personality by (Rotter, 1966) , Myers-Briggs Type Indicator (MBTI) by (Myers & McCauley ,1985) investor types (BB & K model) by (Bailard T.E et al., 1986) Big five personality traits by (Costa & McCrae, 1992). In this study big five personality traits model is used to discuss relationship between the investment biases and personality traits.

According to some researchers nearly all personality dimensions should be categorized under big five model (Goldberg, 1990; Hogan et al., 1996). The dimensions of the model include Agreeableness, Extraversion, Conscientiousness, Openness and Neuroticism. (Robbins et al., 2008)

Extroverts are in a habit to develop relationships and tend to be assertive, outgoing, and sociable (Robbins et al., 2008). Agreeableness refers to propensity of an individual to comply with others. People that are highly agreeable are warm, cooperative and trusting (Robbins et al., 2008). Individual with this trait have good team work skills but it is negatively related with the leadership.

Conscientiousness refers to individuals that are persistent, organized and dependable (Robbins et al., 2008). But conscientiousness dimension can also be characterized as through, achievement-oriented reliability, and orderly (Rothman & Contzer, 2003). Neuroticism refers to emotional stability and ability of a person to withstand stress. People with Neuroticism tend to be self-confident, calm and secure. Those with high negative scores tend to be nervous, anxious, depressed, and insecure. (Robbins et al., 2008).

The openness to experience dimension addresses one's attraction towards novelty. Highly open people are curious, creative and inventively sensitive (Robbins et al., 2008).

Herding can be described as the replication of one's behavior by many others and often lead to inefficient outcome (Bikhchandani et al.1992). Asch (1952) studied the impact of environment on the human behavior for decision making; individuals predominantly rely on the group opinion instead of their own judgment. Herding is a behavior that follows the majority decisions instead of relying on movements of stock prices (Lin, 2011). Overconfident individuals over estimate their abilities, they act as they have more skills than they actually possesses (Yates 1990). Investors are likely to be over confident as who attribute the previous victories with their personal abilities and bad events or failure with the bad luck or with some environmental reason. To avoid the loss and regret investors tends to sell their stock. Investors suffering from the disposition effect, sell those stocks that have some price volatility. Unknowingly they sell winning stock and retain the losing investment (Barber & Odean 2000).

The study discusses the influence of personality traits on investment biases i.e. overconfidence bias, herding behavior and disposition effect. In the study personality traits are categorized under Big five model in that includes the following traits i.e. extraversion, openness, conscientiousness and neuroticism. In addition to this it also discusses the influence of personality traits on demographic variables (gender, age, education background, marital status, residential area) as well as on risk taking.

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.

Objectives:

1. To identify the influence of personality traits on the investment biases.
2. To analyze the impact of demographic variables on the investment biases
3. To examine the effect of personality traits on risk taking behavior.

4. To investigate the influence of demographic variables on risk taking behavior.

Literature Reviews

Lin (2011) assessed the impact of demographics and psychological traits on financial biases for the individual investors in the Taiwan stock market. 554 samples were collected using the questionnaire survey method to analyze the determinants of disposition effect, herding, and overconfidence bias. Two models were used to evaluate the effects of demographic variables and big five personality traits on the investment biases through the Structural Equation Model (SEM) analysis. Results indicated that individual investor's behavioral investment biases were significantly related to four personality traits and some of the demographics. Neuroticism is positively related with disposition effect and herding. Extraversion is positively related with herding. Openness is positively related with overconfidence and herding. Conscientiousness is positively related with disposition effect and overconfidence. Gender has a negative association with overconfidence. Age has positive relationship with overconfidence and disposition effect. Residential area and herding has positive association

Schaefer et al. (2004) assessed the relationship between personality traits personality and overconfidence. A cognitive task was designed to assess the impact of personality type on the overconfidence. Results indicated that there is positive relationship between extraversion and overconfidence however openness leads to confidence but not overconfidence.

Vasakarla & Sharma (2013) investigated the influence of gender on risk taking and overconfidence in making investment decision. Data was collected from168 respondents through questionnaire. Chi square was used as data analysis technique in SPSS. It was found that gender is not significantly related with gender.

Bashir et al. (2013) conducted a study, to analyze the relationship between personality traits, demographics and level of confidence. Questionnaire is used to collect the data from a sample of 100 employees and data is analyzed by using the correlation regression and chi square test of association. Results showed that all personality traits (conscientiousness, emotional stability, agreeableness and openness to experience) are correlated with overconfidence. Regression results showed that there is no linear relationship between personality traits and confidence level.

Zaidi & Tauni (2012) explored the relationship between investor's demographics, personality traits and overconfidence bias in the Lahore stock exchange. Data was collected from a sample size of 200 investors randomly

through questionnaire survey method. Results showed that extroversion, agreeableness and consciousness have a positive relationship with overconfidence bias while Neuroticism has negative relationship with overconfidence. The results also indicated that education level and age don't have a significant relationship with overconfidence bias while there is a positive association between overconfidence bias and investment experience.

Baddeley et al. (2010) identified the determinants of herding behavior and impact of the mass decisions on individual's decision whether to buy or not a stock. Experimental analysis and fixed effect statistical techniques were used to identify the individual's tendencies to follow the herd decision and the impact of herd decision on the individual investor's decision respectively. The results indicated that financial decisions of individuals are influenced by the herd decisions and herding behavior is not homogenous among all individuals but it varies by age, gender and across the personality types.

Zaiane & Abaoub (n.d) investigated the overconfidence bias and the factors that influence the overconfidence in Tunisian stock market. Data was collected through questionnaires and 150 investors were selected as a sample in the Tunisian market. For the data analysis correlation was used as a statistical technique. Results showed that the Tunisian investors were overconfident. And age and income were not related to overconfidence. While gender is a determinant of overconfidence i.e. men show overconfidence while making investment decisions as compare to females.

Tehrani & Gharehkoolchian (2012) identified the determinants of disposition effect in the stock holders. Data was collected from 169 investors in Tehran stock exchange through questionnaires. One way ANOVA, one sample t test, two sample tests and multiple regressions were used as techniques for data analysis. Results indicated that participant's education level and gender are the determinants of disposition effect.

Jamshidinavid et al. (2012) investigated the impact of the demographic and personality traits on the financial behavior biases in Tehran stock exchange in 2011. A sample size of 215 people was chosen bases on simple random sampling and the data was analyzed by using structural equation modeling through AMOS 6 software. Results indicated that extraversion has a positive influence on confidence. Neuroticism is positively and significantly related with herding and disposition effect. Openness has a positive and significant relationship with herding and overconfidence. Agreeableness has a positive relationship with herding. Conscientiousness has a positive relationship with overconfidence and disposition effect. Age has a negative relationship with herding. Herding behavior is more common in woman than women. High confidence has a positive relationship with the education level.

Estesa & Hosseinib (1988) examined relationship between demographics and level of confidence in the investment decision. An experiment was conducted and 1395 individuals participated in the experiment nationwide. Data was analyzed through regression analysis. The findings of study show that males are more confident in their investment decision than females. And education is also significantly related with the confidence level.

Lin (2012) examined the relationship among the investor's types, risk tolerance and herding biases. The survey was conducted from 389 voluntary investors for the purpose of checking the role of risk tolerance between investor types and herding biases. The study used structural equation modeling (SEM) for analysis and demining the effects of these factors using the LISREL 8.71 Statistic Package as well as AMOS. These results show that "impetuous" investor's type has positive relation with herding behavior and have high risk tolerance. The risk tolerance mediates between the hearing behaviors as well as confidence level. But risk tolerance not mediates between the investors action method for individual investors.

Hypothesis

Huei Lin (2011) identified that three demographic characteristics and four personal characteristics have a significant effect on the three behavioral biases in investment. According to Eagly and Carli (1981) females are more likely to follow the herd behavior as compare to males. Menkhoff et al. (2006) identified that people that do not have college degree are more prone to herding but evidence in gender is not significant Da Costa et al. (2008) found that disposition effect in males is stronger as compare to females. Results of many empirical studies are consistent with the belief that males are more overconfident than the females. (Barber & Odean, 2000b; Acker & Duck, 2008; Bengtsson et al., 2005; Kuo et al., 2005 Bhandari & Deaves, 2006).

All individuals don't have similar herding behavior but it varies by gender, age (Schaefer et al., 2004). Gender has a negative association with overconfidence. Age has positive relationship with overconfidence and disposition effect. Residential area and herding has positive association. Huei Lin (2011) Extraversion has a positive and significant relationship with overconfidence (Schaefer et.al, 2004)

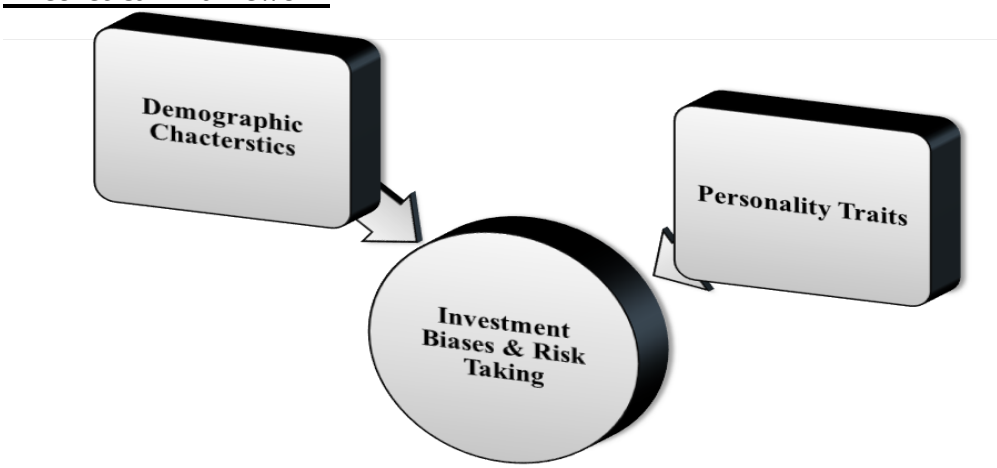
All personality traits (conscientiousness, emotional stability, agreeableness and openness to experience) are correlated with overconfidence (Bashir et. al. 2013). Investors that have the trait of openness buy and sell stock frequently because of the overconfidence. (Barber & Odean, 1999)

Neuroticism is positively and significantly related with herding and disposition effect. Openness has a positive and significant relationship with herding and overconfidence. Agreeableness has a positive relationship with herding. Conscientiousness has a positive relationship with overconfidence and disposition effect (Jamshidinavid et. al. 2012).

Literature shows that the risk tolerance can have positive or negative association with different personality traits. The BB&K model classifies the personalities into different personality classes and each personality class has different level of association with the risk tolerance or risk taking (Bielard, Biehl and Kaiser). The research by M. M. Barnewall in 1987 compared the active and passive investors. The active investor needs less security and has high level of risk tolerance while passive investors are less risk takers. Further research by M. G. Lipe suggests that emotional states influence the level of risk taking by individuals. The positive emotional state "excitement" leads the individual to be over confident about their ability to take decision. These are high risk takers. While negative emotional state is anxiety that leads to less risk tolerance by investors. Impetuous is a personality trait, the impetuous investors are high risk takers (Nicholson, Soane, Creevy & Willman).

1. There is a relationship between demographic variables and investment biases.
2. Personality traits have an influence on the investment biases.
3. Personality traits have a relationship with risk taking.
4. Demographic variables have significant relationship with the risk taking.

Theoretical Framework



Methodology

Objective of the study is to find out the relation between the demographics variables (age, gender, marital status, education background, and occupation), investors personality traits and behavioral 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 is used. To check the normality of data Kolmogorov Smirnov Test is applied and we also applied the Spearman's Rank correlation to check the strength direction of relation between the variables through the SPSS 16. For the purpose of study a survey was conducted from bankers, finance students, teachers and investors of Pakistan.

225 questionnaires were collected from participant of different cities of Pakistan. Simple random sampling technique is used for this study. Sample includes the finance teachers, finance students, bankers and investors from Gujrat, Sialkot, Gujranwala, Wazirabad, Kharain, Lahore and Islamabad.

Questionnaire was used as a data collection tool, and includes 71 questions. Questionnaire was consisting of 3 sections. First section of the questionnaire demography section it includes age, gender, marital status, education background, and occupation. The second section consists of personality traits like extraversion, neuroticism, conscientiousness, openness, and agreeableness. Third section includes questions about investment biases and risk taking behavior of investors

Demographic data of this study includes 122 male and 103 female, in which 137 are single and 88 are married, 132 individuals belong to the age group of 20-25 years old, 50 between the 26-30 years old, 14 between the 31-35 years old and 4 respondents are older than 41 years old. Educational background of the respondents is MBA, BBA (HONS), Mcom, & Bcom. 30 respondents have the educational background of Bcom, 42 have Mcom, 71 have MBA, & 81 have BBA (HONS). 71 respondents are from Gujrat, 27 live in Sialkot, 18 live in Gujranwala, 16 live in Wazirabad, 17 from Kharain, 48 live in Lahore, and 28 are from Islamabad.

Reliability Of Data

Table 1

#	VARIABLES	CRONBACH α
1	Overconfidence	.590
2	Herding Behavior	.546
3	Disposition Effect	.510
4	Risk Taking	.647
5	Agreeableness	.629
6	Openness	.772
7	Conscientiousness	.658
8	Neuroticism	.808
9	Extraversion	.698

To check the reliability of data Cronbach Alpha is used and if its values are closer to 1 the questionnaire will be more reliable. The cronbach alpha for questions related to the neuroticism is .808 and for questions regarding the openness is 0.772. As the average of cronbach alpha values for all the variables is greater than the 0.5, it shows the reliability of the questionnaire.

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 investment biases and risk taking. In this way, we analyzed a suitable regression model between these two variables. 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 and risk taking 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 biases and risk taking behavior of investors except disposition effect.

$$y = \alpha + \beta x$$

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 and risk taking. According to model the 1st and 4th hypothesis were accepted of present study except disposition because it has no relationship with any personality traits.

Similar the model II was constructed to analyze the influence of demographic characteristics on the investment biases and risk taking behavior. But the results of this study of correlation show that demographic variables are not significantly related with investment biases and risk taking behavior. So the 2nd model is not fit it conclude that 2nd and 4th hypothesis are rejected of present study. Demographic characteristics are not significantly related with investment biases and risk taking.

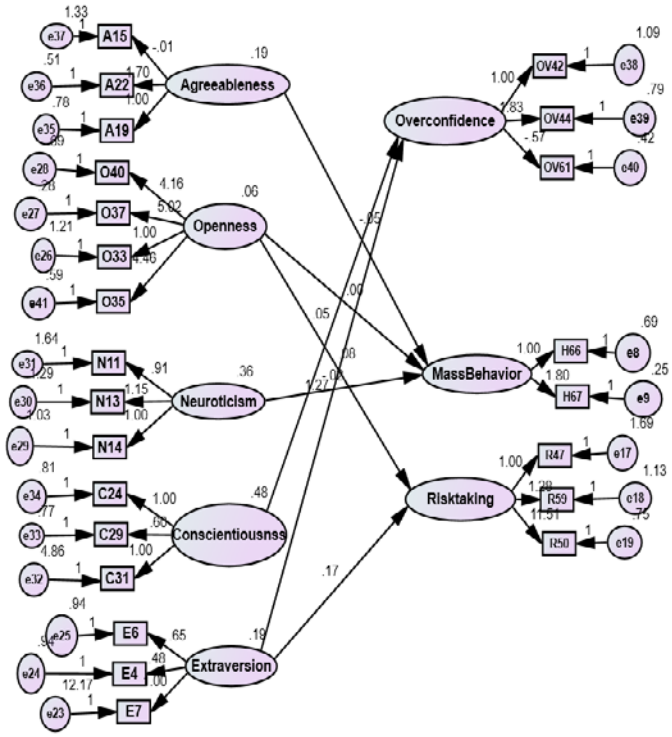


Figure # 1: The Structure relationship between Personality Traits and Investment Biases & Risk Taking

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

Chi- Square = 703.224

D.F = 248

Probability Value = .000

Table 2

#	Fitness Criteria	Results
1	**GFI**	**.983**
2	**AGFI**	**.959**
3	**NFI**	**.935**
4	**IFI**	**.977**
5	**TLI**	**.993**
6	**CFI**	**.996**
7	**RMSEA**	**.015**

Goodness of Fit index (GFI) = 0.983, Adjusted Goodness of fit index (AGFI) = 0.959, NFI =0.935, IFI =0.977, TLI=.993, and CFI = .996 fulfill the criteria of fitness of model all have value greater than 0.9. The Root Mean Square Error Approximation has value less than 0.08 which is .0.15 and also meets the criteria. Chi-square is 703.224 with the degree of freedom 248 and P-value is 0.00 the SEM model is fit and 2nd and 3rd hypothesis is accepted. The personality traits are significantly related with investment traits and risk taking. But personality trait has no significant relationship with disposition effect. But the other dependent variable are significantly related with other biases and risk taking. GFI, AGFI ,NFI, IFI, TLI ,and CFI closer to 1 and RMSEA has value less than 0.05 it show that model is more fit and appropriate.

Similar the model II was constructed to analyze the influence of demographic variable on behavioral biases (overconfidence, herding, disposition effect, and risk taking).The results of Table 5 show that there is no significant relationship between demographic variable and investment biases and risk taking behavior. So the 2nd model is not probable to draw and 1st and 4th hypothesis are rejected.

Table 3

#	RELATIONSHIP	Estimates	S.E	P-Values
1	Mass Behavior<---Agreeableness	**-0.048**	**.149**	**.746**
2	Mass Behavior<---Openness	**-0.03**	**.079**	**.971**
3	Mass Behavior<--- Neuroticism	**-0.23**	**.079**	**.767**
4	Risk Taking <--- Openness	**.078**	**.111**	**.479**
5	Risk Taking <--- Extraversion	**.169**	**.249**	**.498**
6	Overconfidence <--- Conscientiousness	**.047**	**.080**	**.557**
7	Overconfidence<--- Extraversion	**1.273**	**.826**	**.123**

Agreeableness, openness and neuroticism influences mass behavior significantly and negatively. Neuroticism has more strong relation with mass behavior as compare to Agreeableness and Openness. Conscientiousness and Extraversion significantly and positively influences overconfidence. Extraversion has greater influence on overconfidence as compare to Conscientiousness. Openness and Extraversion influences risk taking significantly and positively. Extraversion has more influence on risk taking as compare to openness.

Neuroticism has a positively significant relationship with mass behavior/ herding. It means that the investors will invest based on others ideas and opinions and try to keep disadvantageous stocks for higher prices; these results are similar to those of (Schaefer & Williams (2004) and i Lin (2011).

Similarly, openness has a positively significant relationship with herding/mass behavior. It means that the investors with the trait of openness would prefer to seek new investment information, i.e. newspaper and institutional investors' suggestions so that would result in herding behavior. In addition, the type of investors is more overconfidence than other investors that is corresponding to the findings of Barber & Odean (1999) and Huei Lin(2011).

After checking the normality of the data through Kolmogorov Smirnov Test and results shows that data of only neuroticism is normal and all other variable data non-normal due to this reason Spearman Rank Correlation Test is applied in the study. According to Table 4 correlation between extraversion and overconfidence is positive and highly significant. Correlation between extraversion and risk taking is positive and significant. Relationship of extraversion with herding is insignificantly positive while between extraversion and disposition effect is negatively insignificant.

Neuroticism has insignificant and negative relationship with overconfidence and risk taking. Neuroticism has positive and significant

relationship with herding. And Neuroticism has negative and insignificant relationship with disposition effect.

Conscientiousness has positive and significant relationship with overconfidence while positive and insignificant relationship with risk taking and herding. Conscientiousness has negative and insignificant relationship with disposition effect. Agreeableness has a positive and insignificant relationship with herding behavior.

Table 4

#	PERSONALITY TRAITS	DEPENDENT VARIABLES			
		Overconfidence	**Disposition**	**Herding**	**Risk Taking**
1	Extraversion	**.206****	**-.050**	**.094**	**.130**
2	Neuroticism	**-.109**	**-.013**	**-.183****	**-.172****
3	Agreeableness	**.198****	**.015**	**.053**	**.107**
4	Openness	**.617****	**.032**	**.311****	**.587****
5	Conscientiousness	**.131***	**-.046**	**-.006**	**.080**

According to results of the correlation the relationship of demographic variables with investment biases and risk taking is not significant. Gender has a negative relationship with investment biases and demographic variables. Age is negatively related with disposition effect and positively related with overconfidence, herding and risk taking. On the base of results as the person become older disposition effect decreases while overconfidence, herding and risk taking increases. Marital status has a negative relationship with investment biases while negative relation with risk taking. Residential area investment is positively related with investment biases while negatively related with risk taking behavior. The residential area is insignificantly related with investment biases i.e. herding/mass behavior, overconfidence and disposition effect.

Table 5

#	DEMOGRAPHIC CHARACTERISTIS	DEPENDENT VARIABLES			
		Overconfidence	**Disposition**	**Herding**	**Risk Taking**
1	Gender	-0.28	-0.13	-0.71	-0.50
2	Age	0.056	-.099	.127	.093
3	Marital Status	-1.71	-0.50	-0.83	.203
4	Education Background	-1.28	-0.37	-0.35	-0.95
5	Residential Area	.012	0.032	0.007	-.120
6	Occupation	-.136	-0.092	-.114	-.124

Conclusion:

This paper examines the relationship of demographics and Big Five personality Traits with investment biases and risk taking behavior by constructing the two structure equation models. The conclusion of this study that personality traits influence the two investment biases (overconfidence and herding behavior) and risk taking behavior while demographics do not have significant relationship with investment biases and risk taking behavior. On the basis of given data 2nd and 3rd hypothesis are accepted and 1st and 4th are rejected showed that demographic characteristics has no significant relationship with investment biases (herding, disposition effect, and overconfidence) and risk taking. On the basis of the results some suggestions can be given for the investors that are as follows.

Investors with the trait of agreeableness, Neuroticism 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 Conscientiousness should consult with the financial planners and experienced individuals as well as confirm the market information to avoid the formation of overconfidence bias.

Investors with the traits of openness and Neuroticism should make the decision of selling and keeping the investment after carefully evaluating investment's prospective pros and cons carefully in order to avoid the bias of disposition effect.

References:

Acker, D., Duck &N.W. (2008). Cross-cultural overconfidence and biased self-attribution. J. Soc. Econ. 37: 1815-1824.

Baddeley, M., Burke, C., Schultz, W., & Toblar, P. (2010). Impacts Of Personality On Herding In Financial Decision-Making

Barber.B.M., Odean, T.(1999) "The courage of misguided convictions," Financial Analysts Journal, 55(6), 41-55.

Bashir, T.B., Fazal, s., Shabeer, I., Aslam, W., & Jelani , G.(2013). IOSR Journal of Business and Management, 10, 2319-7668

Barber, B.M., Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. Q. J. Eco, 116(1), 261-292

Barber, B.M., & Odean,T. (2000b). Trading is hazardous toyour wealth, The common stock investment performance of individual investors. J. Financ., 55(2), 773-806

Bailard, T.E., Biehl, D. L., & Kaiser, R .W.(1986). Personal Money Management (5th ed.). Chicago, Ill.: Science Research Associates

Barber, B. M., & Odean, T. (1999). The Courage of Misguided Convictions. Financial Analysts Journal.

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.

Bondt, W. F. (1993). Betting on Trends: Intuitive Forecast of financial risk and returns. International Journal of Forecasting, 335-371.

Biais, B., Hilton, D., Mazurier, K., & Pouget, S. (2004). Judgmental overconfidence, self-monitoring and trading performance in an experimental financial market. The Review of Economic Studies, 287-312.

Costa, P. T. Jr., & McCrae, R.R.(1992). Revised NEO Personality Inventory and NEO Five-Factor Inventory: Professional Manual. FL: Psychological Assessment Resources

Camerer,C.F. (2000). "Prospect theory in the wild: evidence from the field," in Choices, values and frames, Kahneman D. & Tversky A. (eds), Russell Sage, New York and Cambridge University Press, Cambridge

DaCosta, N., Mineto, C., DaSilva, S. (2008). Disposition effect and gender. Appl. Econ. Lett., 15(6), 411-416

Daniel, K., Hirshleifer, D., & Subrahmanyam, A. (1998). Investor Psychology and Security Market under- and Overreactions. The Journal of Finance, 1839-1885.

Endler,N. S., & Magnusson, D.(1976) "Toward an interactional psychology and personality,"Psychol. Bull, 83(5), 956-974

Eagly, A.H., Carli ,L.L., (1981). Sex of researchers and sex-typed communications as determinants of sex differences in influence ability: A meta-analysis of social influence studies. Psychol. Bul, 90(1), 1-20.

Estesa, R., & Hosseinib, J. (1988). The Gender Gap on Wall Street: An Empirical Analysis of Confidence in Investment Decision Making. The Journal of Psychology: Interdisciplinary and Applied, 122(6).

Fredman, A. J. (1996, February). Wrestling with risk: a multiheaded concept with no single measure. Associates of America Individual Investors. 25-30.

Goldberg, L.R. (1990). An alternative "description of personality": The big five factor structure. Journal of Personality and Social Psychology, 59, 1216-1229.

Hogan, R., Hogan, J. & Roberts, B.W. (1996). Personality measurement and employment decisions: Questions and Answers. American Psychologist, 51, 469-477.

Huei- wenlin(2011),"Elucidating rational biases: Evidence from the Taiwanese

Jamshidinavid, B., Chavoshani, C., & Amiri , S. (2012).The Impact of Demographic and Psychological Characteristics on the Investment Prejudices in Tehran Stock , European Journal of Business and Social Sciences, 1(5), 41-53

Kahneman, D., Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica. 47(2), 263-291.
Kuo, M.H., Kuo, N.F., Chiu,Y.C., Fan, P.H. (2005). Gender and investment behavior: On Taiwanese individual investors. J. Financ. Stud, 13(2), 1-28
Leal, C. C., Armada, M. J., & Duque, J. L. (2010). Are All Individual Investors Equally Prone to the Disposition Effect All the Time? New Evidences from a Small Market. Frontiers in Finance and Economics, 38-68 .
Lin, H.-W. (2011). Does the Disposition Effect Exhibit during Financial Crisis? International Conference on Economics and Finance Research.
Lin, H.-W. (2011). Elucidating rational investment decisions and behavioral biases: Evidence from the Taiwanese stock market. African Journal of Business Management, 1630-1641.
Lin, H.-W. (2011). Elucidating the Influence of Demographics and Psychological Traits on Investment Biases. World Academy of Science, Engineering and Technology.
Lin, H.-W. (2012). How Herding Bias could be derived from Individual Investor Types and Risk Tolerance? World Academy of Science, Engineering and Technology.
Mittra, S. (1995). Practicing Financial Planning: A Complete Guide for Professionals. Michigan: Mittra & Associates
Menkhoff, L., Schmidt, U., & Brozynski,T. (2006). The impact of experience on risk taking, overconfidence, and herding of fundmanagers: Complementary survey evidence. Eur. Econ. Rev, 50, 1753-1766.
Maital,S., Filer, R.,& Simon, J.(1986) "What do people bring to the stock market (beside money)?" The Economic Psychology of Stock Market Behavior, In B. Gilad and S. Kaish (Eds.), Handbook of Behavioral Economics Behavioral Macroeconomics, Greenwich, Connecticut, JAI Press Inc, 273-307
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.
McCrae, R.R., & Costa, P.T. (1997). Personality trait structure as human universal. American Psychologist, 52, 509-516.
Overconfidence Bias .Interdisciplinary Journal Of Contemporary Research In Business, 4(6)
Othman's., Contzer, E.P. (2003). The Big Five Personality Dimensions and Job Performance. SA Journal of Industrial Psychology, 29 (1), 68- 74
Peter S. Yoo. (1994). Age Distributions and Returns of Financial Assets. FEDERAL RESERVE BANK OF ST. LOUIS.
Poterba, J. M. (2001). Demographic Structure and Asset Returns. The Review of Economics and Statistics, 565-584.

Pallier & Gerry, (2002).,"The role of individual differences in the accuracy of confidence judgments." The Journal of General Psychology 129.3
P. S. Schaefer, C. C. Williams, A. S. Goodie, and, W. K. Campbell, Overconfidence and the Big Five," J. Res. Pers., vol. 38, pp. 473-480, 2004.
Rothmann, S; E.P. Coetzer., (2013)"The big five personality dimensions and job performance". SA Journal of Industrial Psychology 29.
Rotter, J.B.(1966)."Generalized expectancies for internal versus external control of reinforcements,"Psychol. Monogr, 80, 1-27.
Robbins, Stephen. P, Judge, Timothy. A, (2008), Organizational Behavior, Prentise Hall, 100-110
Schaefer, P. S., Williams, C.C., Goodie, & Campbell, W.k.(2004) "Overconfidence and the Big Five,"J. Res. Pers, 38,473-480
Scharfstein DS, Stein JC (1990). Herd behavior and investment. Am. Econ. Rev. 80(3): 465-479.
Tehrani, R., & Gharehkoolchian, N. (2012). Factors Affecting the Disposition Effect in Tehran Stock Market. International Business Research, 5(3).
Yates, J. F. (1990). Judgment and Decision making. Englewood Cliffs, NJ: Prentice Hall. Stock market", Africa Journal of Business management vol.5 (5).pp.1630-1341.
Zaidi, F.B., & Tauni, M.T.(2012).Influence of Investor's Personality Traits and Demographics on Investors"
Zaiane, z., & abaoub,E. (n.d). Investors Overconfidence: A survey on the Tunisian Stock Market. Retrieved from http://www.cass.city.ac.uk/__data/assets/pdf_file/0011/67817/Zaiane.pdf