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Impact of Personality Traits on Investment Behavior: The Moderating Role of Financial Literacy.

MUHAMMAD DIYAR KHAN
Riphah International University, Islamabad
Email: mdiyar2006@gmail.com

MUHAMMAD WAQAS
Lecturer in Commerce,
Govt. College of Management Sciences, Swabi
Email: waqas.2p@gmail.com

MUHAMMAD ARIF
Assistant Professor, Department of Management Sciences
University of Swabi, KP,Pakistan
Email: dr.arif@uoswabi.edu.pk

NAVEED HUSSAIN SHAH
Assistant Professor, Department of Management Sciences
University of Swabi, KP,Pakistan
Email: dr.naveedshah@uoswabi.edu.pk

Abstract

The study explored the impact of the personality traits(PT) on the investment behavior (IB) of individual investors trading at Pakistan stock exchange (PSX). It also provides evidence regarding the moderating impact of financial literacy (FL) on personality and investment behavior of individual investors. Data have been collected via self-administered questionnaires from 217 investors of PSE. Results showed that extroversion influence the investment behavior of individuals and FL moderates the relationship between PT and investment behavior. Conscientiousness, openness to experience, and agreeableness influences IB if they are financially literate. In addition to this study proved that financial literacy helps everyone irrespective of age, background or income to make knowledgeable financial decisions. The study also provides empirical evidence that financial literacy strongly impacts the investment behavior of individuals. The study provides guidelines for policymakers to devise policies for investment keeping in view the financial literacy of investors. Moreover, investors prone to extrovert, persist in investing in stock exchange without having financial literacy. In the future, the research may take into consideration the impact of family FL and resources on investment behavior.

Key Words: *Investment Behavior, Financial Literacy, Personality Traits, Individual Investor.*

Introduction

Personality traits have been tested to both short-range and long-range investment objectives by giving particular consideration to the personality classification. Men report spending higher intentions for both long-range and short-range investment activities than women (Mayfield, Perdue, and Wooten, 2008). Financial illiteracy has been considered as the reason for the selection under diversification (Guiso and Jappelli, 2008), too little stock trading (Van Rooij, Lusardi, and Alessi, 2011), unpreparedness for post-retirement times (Lusardi and Mitchell, 2007), wealth lavishness (Van Rooij, Alessi, and Lusardi, 2012), being not capable to make personal offerings (Van Rooij, Kool, and Prast, 2007 and wealth distribution changes (Dvorak and Hanley, 2010). According to Hastings and Mitchell (2011) Investment behavior is associated with the level of FL, while it also impacts the retirement planning, savings, and pensions.

Further studies also spotlight on the decision relevant to financial matters, for example, poor investment choices (Al-Tamimi and Bin Kalli, 2009), financial dissatisfaction (Yoong, See, and Baronovich, 2012), immature financial management (Perry and Morris, 2005), poor financial practice behavior (Robb and Woodyard, 2011), inability to make informed financial decisions (Chen and Volpe, 1998) and worse household financial management behavior (Hilgerth, Hogarth, and Beverly, 2003).

Rooij, Lusardi, and Alessie, (2011) argued that FL is the cause for deficient stock participation and investment behavior. We can say, people with lesser FL are less likely to participate in the stock market which leads them unawareness of the activities of the financial products and markets. These people have a shortage of the necessary financial knowledge which could be helpful to direct them to take benefit of money markets (Guiso and Jappelli, 2008). The current study aims to advance the literature on Big Five personality attributes (i.e., extroversion, agreeableness, neuroticism, conscientiousness and openness to experience) both theoretically and empirically on investment behavior with moderating role of FL between personality and investment behavior.

Theoretical Underpinning and Hypothesis

Neuroticism and Investment Behavior

It is the amount and concentration of motivation required to urge a person's harmful feelings. The more neurotic a human being is, the harder it is for him/her to control his/her sentiments and purchase on a notion, the easier it is for the individual to sense unimportant himself, to be perceptive to other people's criticisms and contempt and to be able to grip pressure (Tsao and Chang 2010). There is a noteworthy connection between the personality trait neuroticism and short-term investment intentions (Mayfield, Perdue, and Wooten, 2008). All effects of each personality dimension were coded to reflect the positive emotional stability rather than neuroticism (Lodi-Smith and Roberts, 2007). Nervous individuals reported a smaller amount of intentionality to engage in short-term investment. This type of character in personality will not tend to have a direct relationship with IB.

H1: Neuroticism has a negative impact on investment behavior..

Extroversion and Investment Behavior

It of comfort that a person thinking regarding his connection by means of others. The more extroversive a human being is the extra affable he is. He is extra energetic, choral, action-oriented, keen, hence more disposed to seek sensory thrills and enjoyments. As a result, he becomes more ostentatious, and he is inclined toward new things, thoughts, and change (Tsao and Chang, 2010). Extroverts are warm-blooded, gracious and sociable. They think real and ethereal they easily fall in love and fall out of love, they decide easily and exist in present time (Sadi, Asl,

Rostami, Gholipour, and Gholipour, 2011). They are not likely to control themselves. They own declaring weaknesses, low intellectuality, resistance and poor endurance. They exhibit rashness, carelessness, poor ambition and are not bound by principles. Furthermore, they witness flexibility, sense of humor, simulation, docility, living in present are the major characteristics of extroverts (Gholipour, 2007). Both short and long term intentions of the investors are affected by extroversion in personality (Mayfield, Perdue, and Wooten, 2008).

H2: investment behavior is positively affected by Extroversion

Openness to experience and Investment Behavior

It of a human and the person follow those interests. The more open a person is; the more diverse his interest is. The more iconoclastic he is; the higher his preference to withstand this results in more keen to think about diverse views and standpoints, (Tsao and Chang, 2010). "Openness to experience is one of the areas which are used to explain the person's traits in the Five Factor Model. Openness engages six aspects: they are fantasy, artistic sensitivity, attentiveness to inner thoughts, liking for diversity, and rational inquisitiveness." A flexible person tends to agree on new ideas and unusual values and is disposed to receive new social, ethnic and political beliefs. These people have acquired the narrow area of interest but are more stable in their areas and behaviors (Sadi, Asl, Rostami, Gholipour, and Gholipour, (2011). Therefore, it is hypothesized that a person having the openness to experience in personality will tend to do more investment. It is assumed that the correlation between savings and investment would differ with the degree of openness of the economy but found 'no evidence' (Feldstein and Horioka, 1980).

H3: IB is negatively affected by Openness-to-experience.

Agreeableness and Investment Behavior

It is the person fulfills his/ her policies documented by others. The more agreeable a person is; the more gracious he is. Consequently, people start trusting him/ her. The more pleasant his behavior is to others; the better group gets along with him. This kind of human being simply keeps affable affairs with others. The agreeable person considers that all people are born virtuous, want to facilitate others, and are thoughtful (Tsao and Chang 2010).

Agreeable people tend to prioritize the satisfaction of others (Sadi, Asl, Rostami, Gholipour, and Gholipour, 2011). Some studies found that the personality dimension 'agreeableness' had no effect on investment intentions; more research should inspect the generalizability of the relationships among agreeableness and investment behavior (Mayfield, Perdue, and Wooten, (2008).

H4: Agreeableness has a negative impact on investment behavior.

Conscientiousness and Investment Behavior

It is the ability with which a person tracks his targets. The more conscientious a person is; the more she/ he is distinctive, detail-oriented, competent, extremely well thought-out, and temperate. Conscienceless is a propensity towards the improvement of a person's risk potential (Nichelson, 2005). Personality influences the intentions of investors, conscientiousness were both positively and significantly related to short-range investment intentions (Mayfield, Perdue, and Wooten, (2008). Based on these grounds it can be said that conscience person will decide to invest after proper satisfaction.

H5: Conscientiousness has a negative impact on investment behavior.

The Moderating Role of FL

Financial literacy has been defined by Morris Altman (2012) in these words"having theknowledge, skills, and confidenceto make responsible financial decisions. "Financial literacy affects financial decision-making; lack of knowledge about necessary financial theories can be associated with the need of retirement planning, poor borrowing behavior and not having a contribution to the stock market (Lusardi 2008). Financial literacy differs by population subgroup, age patterns are notable, in that financial knowledge can be found triggered down in the early and late age while during adolescence it reached to the peak (Lusardi and Mitchell 2011). Financial literacy is found to be particularly low among women, as highlighted in the literature. Lusardi and Mitchell (2008) have drawn the conclusion that financial literacy causes changes in financial behavior. Financial literacy is vital to retirement security too, so we can say that savings and retirement planning are affected by financial literacy significantly. Lauren E. Willis (2008) mentioned that financial behavior while decision-making is either "good" or "bad." Financial and investment behavior is either "responsible" or "irresponsible," "healthy" or "unhealthy". Poor financial behavior is seen by some concerned as reflecting mental instability. A person lacking the knowledge of finance and saving may not be able to manage his earnings in an optimized manner and as a result, he/she will not tend to have a saving behavior

H6: FL moderates the relationship between PT and investment behavior.

Investments Behavior

Generally, investment means is to spend money in the anticipation of some benefit in the future. In finance, the return is the predictable future profit from the investment. The return may consist of capital gain or income, including rental income, interest, dividends etc. Investment normally is the result of acquiring an asset, also called an investment. "as how the investors judge, predict, analyze and review the procedures for decision making, which includes investment psychology, information gathering, defining and understanding, research and analysis", (Lee, Wang, Kao, Chen, and Zhu, 2010). If the asset is available at a price worth investing, it is normally expected either to appreciate in value so that it can be sold at a higher price or to generate income, (or both). Investors generally imagine higher returns from riskier investments, as higher the risk, the higher the income and lower the risk; the lower the income. Financial assets vary from low-risk, low-return investments. Such as high-grade government bonds, to those with higher risk and higher expected proportionate reward, i.e. developing markets stock investments. Investment is the result of perception regarding the area where an investor is intending to invest. Perception is a process with which someone sorts out and explains the environmental stimuli in order to get to communicative experiences, but what causes the investor to get into trouble in his decisions is his misunderstanding of reality (Sadi, Asl, Rostami, Gholipour, and Gholipour, 2011). Gender also has an impact on investment behavior; wealthier male investors appear to enjoy dealing with investments more than their less wealthy female counterparts (Daniel D. and Paul S, 2009). Personality is correlated with investment behavior in the stock market (Rizvi and Fatima, 2015). Results had reflected that the saving and investment molds of the migrated people significantly vary across motherland and the country to which the person is migrated (Christopher D. Carroll, Byung-Kun Rhee and Changyong Rhee 1999).

Data and Methodology

Population and Sample

Data have been collected through questionnaire from individuals having long-term fixed deposits in various branches of a commercial bank and from investors of Pakistan stock exchange. The self-administered questionnaires consisted of 41 questions; containing twenty-three questions regarding personality, five questions each for Openness to experience, Conscientiousness and Neuroticism while four questions each for Extroversion

and Agreeableness. Financial literacy was measured using five questions while thirteen questions were asked regarding the investment behavior. Primary data has been collected by distributing questionnaire among the respondents in the different branches of a commercial bank in Islamabad, Mardan, Rawalpindi, and Swabi; and among the clients of a number of securities exchange companies at Pakistan Stock Exchange (PSE). For the purpose of obtaining results and making an analysis of the data responses of the questionnaire were processed through a computerized software.

Instrumentation

Personality

In this study 23-item Personality traits have been used by Mayfield, C., Perdue, G., and Wooten, K. (2008) to assess this construct. This scale contained five sub-dimensions of personality traits called Big Five: Neuroticism (5 items), Extraversion (4 items), Openness to experience (5 items), Agreeableness (4 items) and Conscientiousness (5 items). The measurement was "Likert scale", which is, 1, "strongly disagree," to 5, "strongly agree"

Financial literacy

Financial literacy has been measured through the scale of 5 items from Van Rooij, Lusardi, and Alessie, (2011). They have used a two-section scale, i.e. "the basic financial literacy" and "advanced financial literacy." scale regarding "basic financial literacy" has been used in this study. Measurement for this construct was also "Likert scale", which is, 1, "strongly disagree," to 5, "strongly agree"

Investment Behavior

o measure the investment behavior, the scale of 13 items by Hoffmann, Post, and Pennings, (2013) has been used. This was a custom scale, unlike the others, were used in this study. Options for the questions were given for this construct.

Methodology

The methodology used in this study is a survey research. Survey research studies are for all time carped due to generality problem. Limited responses may also be the main reason forthe variation in results. The response may be biased which may also lead to incorrect outcomes. Therefore, outcomes of this study depend upon respondent's integrity and honesty. Finance researchers always believe survey studies improper as they have observed that; there may be a breach between the people response and their actual performance. They further argue that individual view is often biased to the popular replies and they shun the actual replies. Therefore, they are hesitating to share their true practice and judgment. However, each attempt and effort is made to gather representative data.

Results and Discussion

For obtaining, results and interpretation data was collected from respondents and processed through computerized software. Following is the list of characteristics of the sample used for this study.

Table 1: Characteristics of Sample

	Predictors	Frequency	Percentage
Gender	Male	155	71.4
	Female	62	28.6
	Total	217	100
Age	18-28	42	19.4
	29-38	135	62.2
	39-48	28	12.9
	49 –Above	12	5.5
	Total	217	100
Religion	Islam	214	98.6
	Other	3	1.4
	Total	217	100
Education	Metric	8	3.7
	Intermediate	2	0.9
	Graduation	46	21.2
	Masters	91	41.9
	MS/M.Phil	57	26.3
	PhD	13	6
	Total	217	100
Specialization	Finance	66	30.4
	Non-Finance	151	69.6
	Total	217	100
Work Experience	Below 5 years	56	25.8
	5-10 years	70	32.3
	11-15 Years	59	27.2
	15 -20 Years	18	8.3
	20 and Above	14	6.5
	Total	217	100

Table 1 shows the characteristics of the sample used in this study. First, a higher proportion of male participants than female participants can be seen (Male =71.4%, Female= 28.6%), age brackets shows that young investors mostly participated in the survey (29-38=62.2%), however, the religion of the respondents were Islam only a few were Non-Muslim (1.4%). According to demographics of Pakistan Muslims are 96.4% in our country while the rest are minorities; in education, it is important to see that most of the respondents are well qualified and educated 41.9% were master degree holder while 26.3% were MS/ M. Phil scholars. In specialization, 69.6% were of non-finance specialized and the rest were having a finance academic background. In work experience, most respondents were having lower than five years and 5-10 years' work experience i-e. 25.8% and 32.3% respectively. So it is concluded that respondent of this study was Muslims, mostly in the age bracket of 29-38 years and having experience below 10 years with not having finance related qualification.

Control Variables

For the control of divergence in investment behavior (dependent variable), one-way ANOVA was carried out based on demographic variables considered. The obtained results from the One-way ANOVA (shown in Table 2) pointed out significant differences in investment behavior (dependent variable) across education ($F= 2.537$, $p < .05$). Based

on gender, age, religion, specialization and work experience, there is insignificant difference found in mean values of IB among groups. Consequently, a factor recognized as momentous (i.e. education) was entered as a control variable in the first step of regression analysis.

Table 2 One-way ANOVA

Sources of Variation	I.B.	
	F statistics	p-value
Gender	2.671	0.104
Education	2.537	0.030
Age	1.542	0.205
Religion	0.357	0.541
Specialization	0.308	0.579
Work Experience	2.352	0.550

*IB = Investment Behavior

Correlation Analysis

Table 3 Showing the Means, Standard Deviations, Correlations, and Reliabilities

	Mean	S.D	1	2	3	4	5	6	7	8	9	10	11	12	13
Gender	0.29	0.45													
Education	4.04	1.04	-.094												
Age	2.05	0.73	-.289**	.046											
Religion	1.01	0.11	.187**	-.119	-.007										
Specialization	1.70	0.46	.063	-.060	.041	.078									
Work Experience	1.37	1.14	-.180**	-.079	.671**	-.039	.014								
Neuroticism	2.73	0.72	.097	-.127	-.268**	-.120	-.079	-.282**	(.748)						
Extraversion	3.35	0.83	-.137*	.095	-.023	-.337**	-.038	-.037	-.145*	(.785)					
Openness to- Experience	3.19	0.76	.005	.028	-.068	-.268**	.178**	-.026	.126	.335**	(.743)				
Agreeableness	3.23	0.89	-.014	.036	-.060	-.252**	.190**	-.020	.119	.340**	.964**	(.776)			
Conscientiousness	3.07	0.84	-.041	.051	-.061	-.105	.110	-.049	.011	.055	.018	-.001	(.739)		
Financial Literacy	2.28	0.84	.079	-.379**	-.021	.213**	-.067	-.140*	-.059	-.077	-.203**	-.231**	.022*	(.792)	
Investment Behavior	2.64	0.45	.147*	-.138*	-.056	-.047	.010	-.141*	-.048	.126	-.121	-.111	.001	.706***	(.670)

n = 217; alpha reliabilities are shown in parentheses, *=p < .05. **=p < .01. ***=p < .001. ns = not significant For gender, 0, “male”; 1, “female” ,For Qualification, 1,“Metric”; 2 “Intermediate”; 3 “Bachelors”; 4 “Masters”; 5 “MS/M. Phil”;6 “Doctorate”. Age ranges from 1, “18 to 28”; 2, “29 to 38”; 3, “39 to 48”; 4, “48 or above”. For Religion, 1, “Islam”; 2, “Non-Muslim”, For Specialization, 1, “Finance”; 2, “Non Finance”, Work Experience ranges from, 0 “less than 5 year”; 1, 5 to 10 years; 2, “11 to 15 years”; 3, “16 to 20 years”; 4 “21 and above”.

Table 3 indicates that extraversion has a strong positive correlation with investment behavior (0.141, p< 0.05), which presented support for hypothesis 2 as in the study results by Tsao and Chang (2010), Mayfield, C., Perdue, G., and Wooten, K. (2008), Lodi-Smith, and Roberts, (2007). However, neuroticism, openness to experience, agreeableness and conscientiousness were found having no direct association with investment behavior (-0.048, p = ns), (0.126, p = ns), (-0.121, p = ns), and (-0.111, p = ns) respectively, which are contrary to hypothesis 1, 3, 4 and 5. However studies support the insignificant relationship of the agreeableness and investment behavior as it is supposed that sometimes mood changes the pattern of the investment behavior, a happy person will behave in a different way as compared to the sad one, Trang and Khoung (2016). So the hypothesis of this study may also be not supported due to the mood of the investors of PSE and other respondents.

Table 4 Showing the Results of Regression Analysis.

Predictors	Investment Behavior		
	β	R^2	ΔR^2
Step 1			
Control variables		0.024	0.024
Step 2			
Neuroticism	0.061		
Extraversion	0.14		
Openness to experience	0.149		
Agreeableness	0.122		
Conscientiousness	-0.013	0.440***	0.415***
Financial Literacy	0.694		
Step 3			
FL x Neuroticism	-0.226		
FL x Extraversion	0.648		
FL x Openness	-1.412		
FL x Agreeableness	-0.993		
FL x Conscientiousness	0.475	0.486**	0.047**

n = 217; FL=Financial Literacy, *=p < .05. **=p < .01; ***=p < .001; ns = not significant.

Figure 1:Interactive effect of extraversion and financial literacy on investment behavior

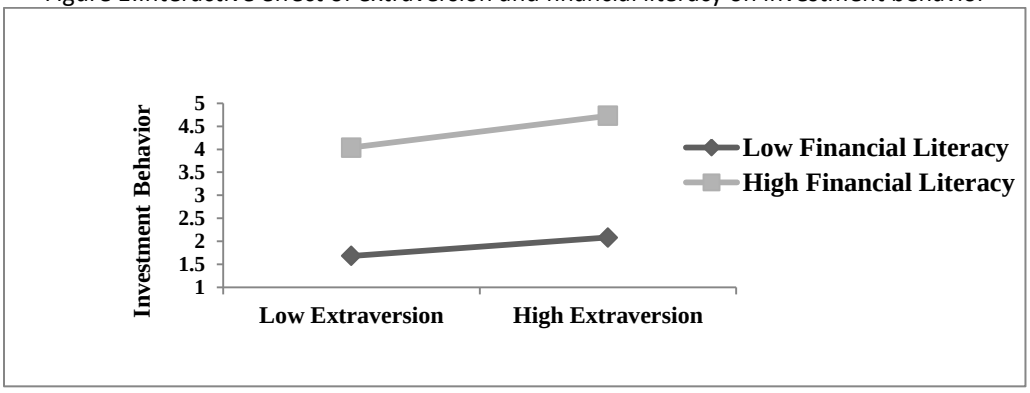

Figure 1 illustrates the positive extraversion – investment behavior relationship was strong when financial literacy was lofty, which holds hypothesis 7.

Figure 2:Interactive effect of openness and financial literacy on investment behavior

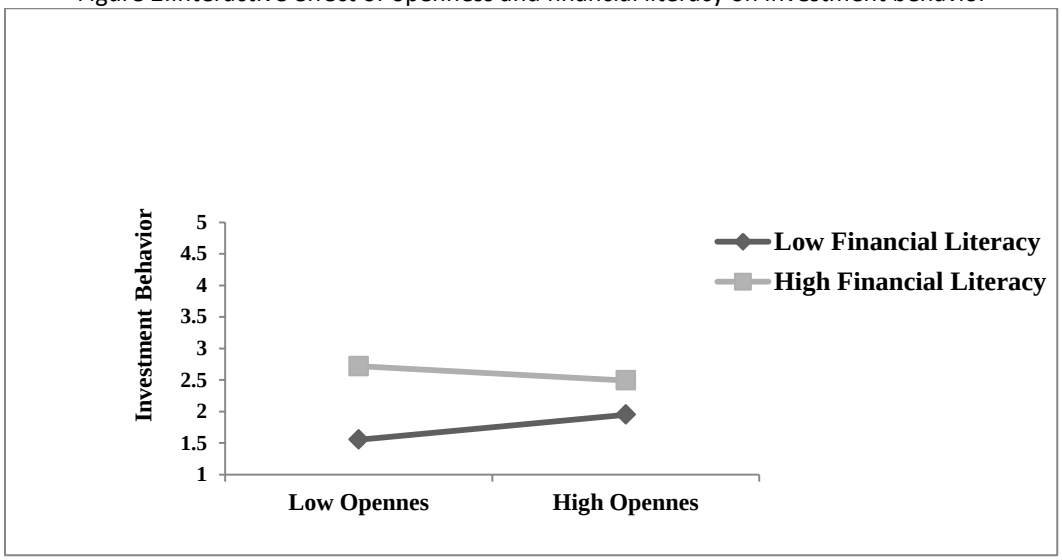

Figure 2 shows that openness to experience – the investmentbehavior affiliation was too much negatively stronger when financial literacy was high consequently supports to hypothesis 8.

Figure 3:Interactive effect of agreeableness and financial literacy on investment behavior.

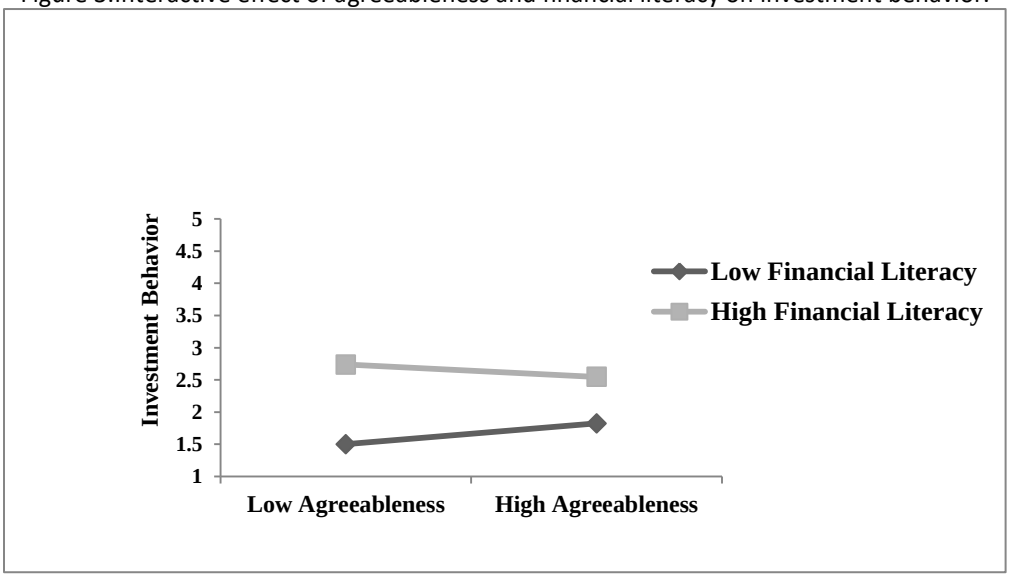

Figure 3 shows that agreeableness – investment behavior relationship was also much negatively stronger when financial literacy was high thus supports to hypothesis 9.

Figure 4: Interactive effect of conscientiousness and financial literacy on investment behavior

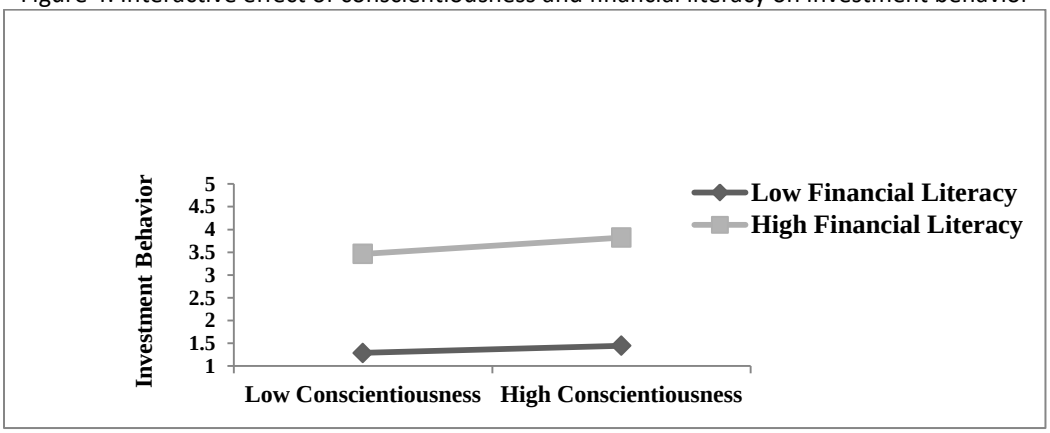

Figure 4 illustrates the positive conscientiousness – investment behavior relationship was weaker when financial literacy was low, which supports hypothesis 10.

Discussion

Pragmatic examination is backing the majority of the projected suppositions of the study. Extraversion was seen to positively affect investment behavior of the investors and had a direct impact on the investment behavior this finding was in line the previous research of Tsao and Chang (2010), Sadi, Asl, Rostami, Gholipour, and Gholipour (2011), Gholipour, (2007) and Mayfield et.al, (2008). Surprisingly, openness to experience was found no relationship and impact with investment behavior was contrary and study of Sadi, Asl, Rostami, Gholipour, and Gholipour (2011); Tsao and Chang (2010). The response of the investors also depend greatly on the mood according to the findings of Phung, and Khuong (2016) but some researchers have found no relationship of openness to experience that supports our results like Feldstein and Horioka (1980).

Similarly, neuroticism was also not shown any impact on the investment behavior as contrary to this study Lodi-Smith, and Roberts (2007). This may be because of the reality that the partakers of the study were previously frustrated due to the political and social problems & constraints and family problems. Pakistan is a developing country and investment pattern of the people of Pakistan is not affected by nature and personality they have. Meanwhile, agreeableness was found to have an insignificant relation with investment behavior. These findings were not in accordance with the earlier research results of Mayfield, Perdue, and Wooten (2008), and Sadi, Asl, Rostami, Gholipour, and Gholipour (2011). Contrary results may be due to the fact that Pakistan Stock Exchange is very much affected by the political environment of the country. Phung and Khuong (2016) Sometimes mood also affects the investment behavior Protests and threats of the opposition political parties of Pakistan to the government may have affected the agreeable investors to show against the basic theme of the aspect of the personality and its definition and the hypothesis was not supported.

Similarly, conscientiousness was also found having no relationship to investment behavior. These findings were also contrary to those of Nichelson (2005). Contrary results may be due to the fact that Pakistan Stock Exchange is very much affected by the political environment of the country. Protests and threats of strikes of the general public to the ruling party of the government may have affected the conscientiousness investors to show against the supposed hypothesis. Moderated effect of financial literacy, in the relationship between neuroticism and investment behavior, was not seen to be significant as contrary to the hypothesis. This may be due to the reality that the participants of the study were previously frustrated due to the political and social problems & constraints and domestic and personal problems. Investment pattern of the Pakistani people is not affected by nature and

personality type. However, the moderated effect of financial literacy was found in the relationship between conscientiousness, agreeableness, extraversion, and openness to experience which were all in accordance with the proposed hypothesis of this study as per the previous literature and findings of the researchers. Financial literacy moderated positively between extraversion and investment behavior, negatively between openness-to-experience and investment behavior, positively between agreeableness and investment behavior and also positively between conscientiousness and investment behavior.

Conclusion

This research incorporated 217 respondents who were chosen with the adoption of convenience sampling technique. To extend the research generalizibility, prospect researchers are suggested to employ a bigger and additional assorted sample in their studies. To stay away from common method bias, future endeavors must keep in consideration the usage of various sources of data gathering and longitudinal design. The sample consist the greater part of early on career human resources and young investors/ people (age ranges from 29--38 years 62.2% while age range from 39—48year were only12.9%) such figures/factors may bound the generalizability of the results. For that reason a vigilance is defensible in this regard. This research studies the combined effect of big five on investment behavior, as well as financial literacy as a moderator. It is suggested that researchers may study the individual effect on other variables; financial literacy may also be used as an independent variable to find out its impact on investment behavior as well as on saving behavior. It is further suggested that the same study may be conducted in other economies it may show variation in results.

This empirical study provided a base for the researchers that financial literacy significantly changes the investment behavior keeping personality traits as the driving force for change in investment behavior. As this study provides that though there is not a significant impact of the Big five i.e. neuroticism, extraversion, conscientiousness, openness to experience and agreeableness on the investment behavior (except the extraversion which had a direct positive impact on the investment behavior). FL significantly moderates the connection between the PT and investment behavior (except the neuroticism, whose relationship with investment behavior did not exist when financial literacy moderates its relationship with and investment behavior).The outcome of this study holds the important useful implications particularly as consideration of investor behavior in the presence of the futures trading in Pakistan. As the investor behavior creates the overreaction in the futures trading market in Pakistan and the relationship is highly significant, with the implementation of this research in the electronic trading market helps all kinds of investors in their decision the process of future trading and act as a decision support system.

Organizational managers and policymakers of the financial institutions, in particular, are recommended to keep an eye on the financial literacy of the areas for making investment portfolio and offering to the general public in the case of corporations. Financial literacy is mainly affected by the universities and training institutions who provides the business and financial education. Policymakers of the commercial banks are also suggested by the results and findings of this study to target those potential customers who have some financial literacy. It has been confirmed and proved by this study that financial literacy has been significantly affecting the investment behavior while launching long-term investment products like fixed accounts and house building plans. Policymakers and managers are suggested to take a keen interest in the population's financial literacy. This study also provides a basic picture and foundation for the policymaker and managers to revise their policies for investment and market survey for attracting investment from the market to keep a look on the market's financial literacy. People have a different type of personality, but this personality is affected by low and high financial literacy while making financial decisions about investment. potential researchers are strongly recommended to perform the same research in the stock markets of other countries of the world in order to improve the generalizability of these conclusions.

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