

Perceptual Errors: Personality and Moderating Role of Age and Gender in Stock Exchanges

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Abstract: *One of the important factors in stock exchanges is investors' personality. The aim of this study is to identify the common perceptual errors among investors and its relation with their personality considering moderating role of their age and gender. For this purpose, a sample of 200 investors in Tehran's stock market was determined. The data of study were collected using a questionnaire. Then, according to the model, we tried to test hypotheses applying Pearson's linear correlation coefficient. Results show that there is a meaningful relation between perceptual errors and investors' personality. However, considering moderating variables, there is only significant relation between the two dimensions of conscientiousness and openness of personality given investors' gender and perceptual errors.*

Keywords: *Behavioral finance, Perceptual errors, personality, stock exchange*

I. Introduction:

Most financial theories are based on the assumption that investors are logically concerned about increasing their investment and compare investment risk and return. Therefore, they tend to invest in areas which contain high expected returns and lower risks. It seems the assumption of investors' bounded rationality, i.e., they are always seeking to maximize the utility, is not enough to justify the investment behavior and market reaction.

There is evidence that show a lot of behavioral finance patterns are rooted in human existential dimensions and are effective on individual decisions. The level of investment risk that investors are willing to tolerate depends on the psychological characteristics. Besides, investors' decisions may be affected by behavioral factors and perceptual allusions.

Financial behavioral sciences are mainly concerned with how investors normally behave and how they should behave. They attempt to explain what happens in the capital markets and provide justifiable explanations for investors' as well as financial market behaviors. For this purpose, these sciences use psychology and introduce psychological factors into the financial theories and models. The present article follows these lines of thinking.

II. The statement of problem:

For a relatively long time, most researchers in financial field mainly supposed that investors possess full rationality and believed rationality was the best method of decision making. Therefore, investors were recommended to decide rationally-without the interferences of emotions and personal feelings and based on objectivity. But the thing is, the concept of rational human is not clear enough and unambiguous and sometimes some factors result in irrational behaviors. So in general, we can say that Perceptual error is affected by psychological conditions in normal and unusual situation (Mcgoun, 1992). Over confidence biases, availability bias, hindsight bias, escalation of commitment and randomness bias are to some extent related to the investment method in finance management. So we should try to reduce these biases (Shefrin and Belotti, 2008). Studies indicate that one of the factors leading to perceptual biases is investors' personality. Therefore, it seems possible to reduce the effect of these biases in financial behavior by identifying investors' personality traits and their behavioral allusions as well as developing plans (Pompian and Longo, 2004). By doing so, well be able to help investors achieve their long-term financial objectives.

Decision is so mixed with psychological characteristics that it is impossible to study one without another. Such personality traits as extroversion, agreeableness, conscientiousness, neuroticism and openness to experience can be key factors in investors' decisions. Undoubtedly, demographic factors such as age and gender should be taken into account (Gholipour and Saadi, 2009). The main question here is that if there is a relationship between investors' personality and perceptual biases in financial decisions considering their age and gender?

III. Theoretical framework of research:

Various studies have been conducted on the impact of psychological factors on the method of investment. To mention some researchers in this area, Kahneman and Tversky (1992) developed expectation theory and contributed a large share in developing this knowledge, Schneider (1992), Weiss and Budescu (1989) and Thomas (1988) published articles on financial behavior and played an important role in financial management and guiding investors with financial and investment decisions (Filbeck *et al.*, 2005).

Studies by Merikas group (2003) on Greece stock exchange show that the investment decision is not only led by economic profit but also by psychological factors. Findings of these studies revealed that investors do not make full rational decisions, but they combine present information with their feelings and expectations before engaging in investment (Bidgoli, 2008). A research about personality traits and risk aversion has been done in Iran, finding of which show that risk aversion has a meaningful relationship with extroversion property (Khalili, 2009). Another research conducted on the impact of investors' personality and perceptual errors in investment in Tehran stock exchanges showed that there is a direct relationship between extroversion, openness and neuroticism and perceptual errors, while there is a negative relationship between agreeableness and perceptual errors (Gholipour and Saadi, 2009). It can be concluded that personality and investors' perception is the factor that can determine investors' behavior. This conclusion is out of the focus of this study, since we are trying to study the effect of moderating role of age and gender on the relationship between investors' personality and perceptual errors in the stock exchange deals.

Research model and hypotheses:

Based on current studies, we develop research conceptual model as follows:

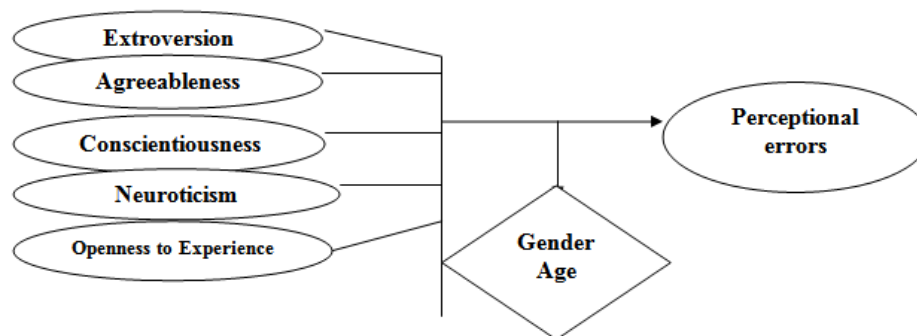


Figure 1: research model

According to the model, the following research hypotheses are proposed:

1. There is a meaningful relationship between extroversion and perceptual errors, considering investors' age and gender in Tehran stock exchanges.
2. There is a meaningful relationship between conscientiousness and perceptual errors, considering investors' age and gender in Tehran stock exchanges.
3. There is a significant relationship between agreeableness and perceptual errors, considering investors' age and gender in Tehran stock exchanges.
4. There is a significant relationship between neuroticism and perceptual errors, considering investors' age and gender in Tehran stock exchanges.
5. There is a meaningful relationship between openness to experience and perceptual errors, considering investors' age and gender in Tehran stock exchanges.

In this article, we assess the relationship between the variables of the model in the form of hypotheses. Each variable in the model is defined as follows:

Extroversion - An extroverted person usually focuses on and affected by external and objective elements. Extroverted people are really concerned about external elements. They do not consider their intentional deeds the result of intellectual evaluation but the effect of external element (Khalili, 2009).

Agreeableness - Agreeableness reflects individual differences in social co operations. This dimension refers to the person's tendency to respect the others (Gholipour and Saadi, 2009).

Conscientiousness - Conscientiousness refers to the person's reliability. Conscientious people are responsible, stable, structured and trustworthy (Nichelson, 2005, pp 157-179).

Neuroticism - Neuroticisms refers to those who lack enough and efficient activity for solving their personal problems. They are self-centered and selfish people who look for superior goals (Gholipour and Saadi, 2009).

Openness to Experience - This refers to flexibility and approval of new ideas and uncommon values. A flexible person is susceptible to accept new political, social and ethnic beliefs (Khalili, 2009).

Over Confidence Bias - In its simplest sense, it can define as an inopportune belief toward a witnessed reasoning, judgment and cognitive abilities. Over confidence bias plays an important role in stock business (Zhu, 2003).

Availability Bias - Availability bias is defined as tendency toward making a decision and judgment based on available and easily accessible data. Human mind tends to decide quickly using available data (Kim and Nofsinger, 2008).

Escalation of Commitment - Another error of decision making-escalation of commitment- occurs when there are successive decision-making processes. Escalation of commitment refers to the argument that even if there is a wrong decision and the consequences confirm this, the person insists on continuing the action more intensely (Saadi and Gholipour, 2009).

Randomness Bias - Human perception is more or less affected by luck and superstitions. What causes decision making results unfavorably from luck and superstitions is that human defines and interprets lucks and coincidences in a superstitious way (Saadi and Gholipour, 2009).

Hindsight Bias - Sometimes people tend to believe that they can predict the consequences of an incident correctly after the incident happens (Anderson, 1993).

IV. Research implementation method:

This research is regarded descriptive in terms of implementation and applied in terms of purposes. Research sample includes 200 investors of Tehran stock exchange selected randomly. In this study, we used the Likert response scale range for data collection. The validity of the questionnaire was determined based on experts view. Cronbach's alpha coefficient was also used to evaluate questionnaire's reliability. To this end, first a pilot questionnaire consisting of 30 questions was designed. The results are brought in table 1.

Table 1: Table of Cronbach's alpha research variables

Variable Name	Cronbachs Alpha Percent
Perceptual errors	88.2
Neuroticism	91.9
Conscientiousness	93.8
Agreeableness	78.4
Openness to Experience	92.9
Extroversion	91.4
Independent variable	87

Research Findings:

In order to analyze data, we used the indicators of descriptive and inferential statistics. For this purpose, first each variable is described as a statistical index by SPSS software. Then, Pearson's correlation coefficient was used to test research hypotheses. Results from research variables are shown in table 2.

Table 2: Table of descriptive research variables

Variable	Mean	Std. Deviation
Perceptual errors	3.46	0.427
Neuroticism	3	1.017
Conscientiousness	4.03	0.599
Agreeableness	3.30	0.691
Openness to Experience	3.95	0.522
Extroversion	3.20	0.658

Accordingly, results from the application of inferential methods, SPSS software output to and Pearson's correlation coefficients are shown in table 3.

Table 3: Test conclusion of research hypothesis

Hypothesis	Valid	R	R Square	β	Sig.	Result
1	Extroversion	0.253	0.064	- 0.253	0.000	confirmation
	Age			0.000	0.997	not confirmation
	gender			- 0.128	0.068	not confirmation
2	Conscientiousness	0.244	0.059	0.244	0.001	confirmation
	Age			0.010	0.883	not confirmation
	gender			- 0.190	0.006	confirmation

3	Agreeableness	0.274	0.075	- 0.274	0.000	confirmation
	Age			0.005	0.941	not confirmation
	gender			- 0.129	0.064	not confirmation
4	Neuroticism	0.535	0.286	0.535	0.000	confirmation
	Age			0.039	0.522	not confirmation
	gender			- 0.011	0.863	not confirmation
5	Openness to Experience	0.268	0.072	0.268	0.000	confirmation
	Age			0.034	0.621	not confirmation
	gender			- 0.240	0.001	confirmation

V. Discussion:

After having tested the hypotheses of research, we found out that generally in Tehran stock exchanges, there is a reciprocal relationships between investors' personality and their perceptual errors in financial decisions, so that the two moderating variables of age and gender have minor effect on their financial decisions. In other words, by identifying personality dimensions, we can diagnose related perceptual errors and provide appropriate measures for resolving them. Neuroticism and perceptual errors have been identified with more significant relation. This relation is also more important in this field of study. Agreeableness and openness are in the lower places of significance. Extroversion and conscientiousness respectively have the least important impact on investors' perceptual errors in business and financial decisions.

VI. Conclusions:

Based on the results from research tests, we can conclude that investment returns can be improved if psychology is used in the financial and economic sciences. As mentioned earlier, personality factors have a significant impact on the investment performance. Even rational people make behavioral mistakes in some cases because cognitive errors lead to limited knowledge or deviation from the truth, so that irrational reactions may occur. With the greater existing recognition of these errors and their causes, we can make a better judgment and optimal decisions. Besides, through true understanding of behavioral processes and their consequences which are very important for financial planners, we'll be able to develop strategies. Therefore, an awareness of the role of psychological factors in investment decisions improves decisions and financial performance results to a large extent. After identifying successful investors' decision patterns, we can find out how they could get out of these help mental traps. This can also stock exchange which is one of the pillars of the economic growth and development along with the development of the national economy.

Research finding suggest that extroversion and agreeableness are negatively related to perceptual errors. Individuals with low extroversion and agreeableness should be offered courses on the control of perceptual errors. On the other hand, since there is a positive relationship between neuroticism and perceptual errors, people with higher neuroticism need to be taught how to overcome anxiety and build confidence through counseling service. Given that there is a negative relationship between conscientiousness and openness perceptual errors in stock and this personality trait is lower in women, it is suggested to organize training courses on increasing independence. This can be achieved by both providing more responsibilities in social community and information to investors through mass media. Thus, it is crucial to develop programs to decrease the impact of deviations in investors' decisions and help investors achieve financial objectives.

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