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Factors Effecting Investment Decision Making Behavior: The Mediating Role of Information Searches

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Abstract

This study investigates the factors affecting the investment decision making behavior through the mediation role of information searches. Two factors i.e. overconfidence bias and economic expectations are used as independent variables while investment decision making behavior is taken as dependent variable. Information search is used as mediating variable. For this purpose, a survey questionnaire was used to test the hypotheses. The population in this survey was investors of Lahore Stock Exchange of Pakistan and Faisalabad Trading Floor. Total 270 questionnaires were distributed; only 245 of them were received back 11 were not included in the analyses as they were incomplete. Hence, 229 questionnaires were used in the analyses. Simple and multiple regression analysis were used as statistical tool. The results showed positive and significant relationship between economic expectations and investment decision making behavior but when information search was included as mediator the relationship became insignificant and negative; which suggests full mediation in case of economic expectations. Overconfidence bias was also found to have positive and significant relationship with investment decision making behavior which remained significant when information search was added as mediator; suggesting a partial mediation in case of overconfidence.

Keywords: Information searches, Economic expectations, Overconfidence bias, decision making behavior

Introduction

Investment means to put money in any endeavor for additional income. It seems to be fascinating to many individuals because through investment their involvement in taking decisions is possible. Individuals can practice decision making and thus they can judge their ability of taking correct decisions by analysing these results. Traditional finance theories assume that the investment markets and its members are sensible and realistic who are interested in maximizing their riches. But, in many occasions lot of factors like feelings, past experiences and beliefs impact investment decisions and investors act in unexpected, illogical and unwise manner. To understand influence of these elements on investor decision a new field in finance has emerged. This new branch of finance is known as "Behavioral Finance" is an effort to unite this behavioral approach with the traditional finance and economics theories to explain the reasons of irrationality in investment choices of the investors these days. Behavioral Finance deals with the internal and external behavioral factors affecting investors' financial decisions. This research discusses the influence of various elements on investment behavior so it relates to behavioral finance. Behavioral Finance is recently emerged area in finance that indicates observed outcomes of the market along with effect of different psychological biases on the attitude of individuals and firm managers involved in investment decisions.

Information Search

The risk which is faced while making investments creates individual wealth. Due to uncertainty, the investors must face financial loss. The uncertainty of return is lowered when market information is obtained and managed properly. Risk taking theory develops different plans to minimize risk in investment decisions including looking for and obtaining more and more market information to lessen uncertainty of these decisions (Taylor, 1974).

Information search means necessity of seeking advice from many resources before taking any decision of buying investment product (Fodness & Murray, 1997). Information plays a significant role in investment decisions to minimize the risk associated with these decisions (Lin, 2002). More informed investors can make better decisions so they try to look for more market information to lower the uncertainty in investment choices. Well informed investors can handle risk more efficiently because it enables them to reduce uncertainty in investing stock markets. The financial markets and their products are changing rapidly these days so to make better financial decisions professional advice is needed to ensure accuracy of desired information. Rational investors, especially institutional investors must consider all operational and financial aspects and growth prospects of stocks while making investment decisions. Some information is gathered by investors personally. This can be acquired through digital or advice seeking searches in general (Baker & Nofsinger, 2002; Loibl & Hira, 2009).

Overconfidence Bias

Bias causes to show inclination for or against someone or something. In finance, bias is a tendency of the investor to make financial decision while he already has a faith and trust. In making investment judgements in stock exchanges and firms an important role is played by these biases in framing investor decisions. Many biases have been explored by the researchers. The following study focuses on overconfidence bias.

Confidence is self-assurance that arises from approval of one’s own skills, judgement and abilities. It is an internal feeling of a person about himself. Overconfidence is prejudiced way to come across a situation. If a person is overconfident, he over estimates his skills, knowledge, beliefs and judgements and show more confidence than needed in a situation. This overconfidence makes investors think that the investment decisions of other persons are caused by their emotions, perceptions, feelings and moods. But they take their own decisions a result of purposeful and sensible ideas. This attitude leads them to such a level that they find all the stuff in their support but opinions of others as illogical and insensible. They do not care much about the level of risk that is a part of their financial plan. These individuals trade excessively. They do not only trade more but their exposure to risk is also higher. Overconfidence is not a negative phenomenon always. Those who criticize this bias claim that practice of overconfidence leads towards more trade by investors reducing the efficiency of the market as they do not focus risk in investment in a proper way rather they overvalue the expected return and do not pay any attention to realism of market. But another group of critics feel that efficiency of the market is improved because of overconfidence bias as a lot of information is gathered by them. Different opinions of the experts on the influence of overconfidence bias on market efficiency have made this bias controversial and attractive for further research. This study determines the impact of overconfidence on investment decision making behavior and its relationship with information search.

Economic Expectations

Economic expectations can be defined as forecasted expectations about economy that what type of the performance a firm will show in the coming period i.e. next month, next year or other duration. These expectations can consist of anticipations about level of employment, output and expansion of the organization, balance of trade and inflation rate in the economy. Economic expectations play a prominent role in investment decision making. These expectations are both about company's future earnings and country's overall economic conditions. Some well-known factors that affect financial decisions of investment are performance of the firm in previous years, anticipated increment of capital and bonus, dividend distribution plans and anticipated profits of the firm etc. The decisions of individual investors regarding firm's investment products are influenced by the economic and social features of investors i.e. sex, age, being single or married, experience of investment and their education level (Obamuyi, 2013).

Rational Expectations Theory

An economist, Robert Lucas who belongs to United States worked on this rational expectation theory which was originally presented by (Muth, 1961). It is defined as a concept that investors take investment decisions which are supported by their rational viewpoints, the experience they have and the information in hand. According to this theory recent economic expectations show the condition of economy in the upcoming period. This concept weakens the prevalent opinion that investor decisions are affected by policies of the government. These investors predict decisions that will be taken by the government in the future by comparing past performance of the authorities. The theory describes that investors make their current economic choices based on these expectations (Muth, 1961).

Prospect Theory

Prospect Theory, a behavioral economic theory describes making investment decisions in the presence of risky environment. This theory opines that when investors must choose among investment opportunities they pass from two different steps. The investors are supposed to revise a difficult judgement to an effortless and easy decision in the first step. This decision is simply based on income and loss. The next step is to make a choice from the simplified decisions formed in the first step. The decision of choosing edited option involves two proportions which include the obvious value of every aspect and weight allocated to these values. When a complicated decision has been divided in these two attributes, the subsequent step to follow is to combine them by the investor. Then the investor must choose that simplified option which has more value among all others (Kahneman & Tversky, 2013).

Objectives of the study

Following objectives are set for the study:

- To determine the impact of overconfidence bias on investment decision making behavior.
- To examine the effect of economic expectations on investment decision making behavior.
- To investigate the impact of overconfidence bias on information search.
- To find out the influence of economic expectations on information search.
- To find out how information search mediates investment decision-making behavior.

Problem Statement

Decisions regarding investments have become significant activities in day to day life. That is why learning about different factors influencing these decisions is needed for timely and accurate decisions of investors. This study determines the factors that influence the desire of investors while making investment decisions. Prior studies have been conducted to analyse the role of information search behavior of investor (Rana, Khan, & Baig, 2014), however only few studies investigated the mediating part of information search behavior between different factors and decision-making behavior. The rationale of this paper is to determine the factors affecting risky decision-making behavior of the individuals of Pakistani stock exchanges.

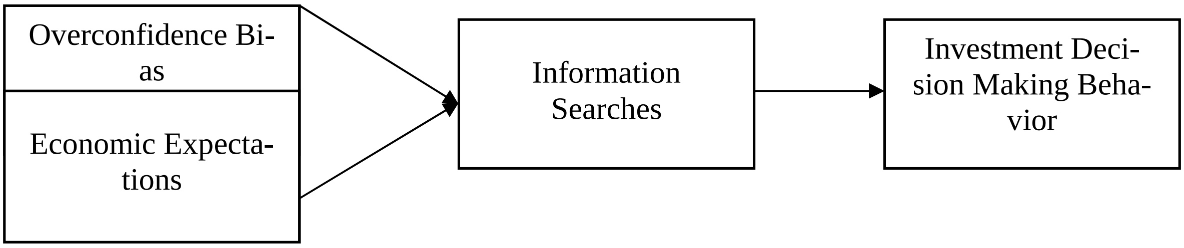

Figure 1 Conceptual framework

Literature Review

Study reported how the search of information affect individual investment decisions while moderated effect of income is tested. A questionnaire was distributed to analyse investor behavior in making investment decisions. It had five constructs i.e. advice seeking and digital information search, stocks or options investment, heuristics and mutual fund investment. Confirmatory factor analysis and hierarchical regression analysis were used as statistical tools. This study of individuals who had been investing for many years concluded that when advice seeking information search improves it causes more investment by individuals with more earnings in stocks and options (Tseng, 2012).

The mediating role of information search between earnings and behavior of making investment decisions was studied (Rana et al., 2014). Questionnaire was used to test the hypotheses. The data was collected from the investors of busiest Pakistani stock exchanges in Islamabad, Karachi and Lahore. Information searches, heuristics and education showed that they had positive and significant impact on investment decisions. Study concluded that wealthy investors were more concerned to get information from financial experts but the poor investors were not much concerned. The investment in risky assets increases when they get more advice.

Investment decisions are risky and uncertain. In the study distributed questionnaire were received back from 3,759 individuals of the US (Lin, 2002). Multiple Regression analysis was used as statistical tool. It was found that personal differences regarding investment decisions, individual characteristics and demographic features of the investors affect their search for information. Personal differences in this study regarding investment are risk, money invested and relevant knowhow.

Investigation of the factors that determine the risk attitude of investors (Sitkin & Weingart, 1995). Study explored the usefulness of placing propensity and perception of risk in model of investment decisions. A survey consisting of thirty-eight master's students of an organizational behavior class was conducted. Hierarchical regression analysis was used to test the potential mediation effects. Three tests of mediation were conducted. The study concluded that a risk behavior model with mediation is better than that model where individual impact of many variables is determined separately.

Basic factors are investigated to check their impact on risky decisions of individuals (Obamuyi, 2013). An adapted survey questionnaire was used for analysis which was originally prepared (Al-Tamimi & Hashim, 2005). The researcher applied t-test, analysis of variance and post hoc test in this analysis. The outcome indicated that there are some factors that are most influencing on the risky financial choices of the persons engaged in investment. These factors include the policy of distributing dividends, how did the company shares performed in the previous years, expected stock split or increase in the firm's capital or bonus, firm's future income and behavior of investors that show their desire of getting wealthy soon.

Main behavioral factors are determined; influencing the investment choices of individuals making investment in Islamabad Stock Exchange by (Qadri & Shabbir, 2014). Data were collected through questionnaires from the investors and brokers of Islamabad Stock Exchange distributed. The study found that overconfident investors in Islamabad Stock Exchange trade more rapidly due to their skills, knowledge and experience.

Concluded that efficiency of the market is not always reduced due to the irrational behavior of the investors (Shah, Raza, & Khurshid, 2012). Extra time along with extra resources is used to gather additional information by investors who are considered overconfident. She investigated that the bias of overconfidence exists when the investors make investment decisions. The efficiency of the market and overconfidence of investors while investing showed significant and positive association.

Impact of behavior of investors on firm's investment decisions explored (Malmendier & Tate, 2005). Overconfidence in executives persuades overestimation of the investment options and they find external finance to be over expensive. They like to make investment when internal finance is available to them. The study concludes that investments decisions get more return when chief executive officers are found to be overconfident. The relationship between investment and its return is significantly affected by other personal traits than overconfidence. These traits include professional history, designation in the firm and qualification. The review of literature reveals that the investment decisions of the investors are not rational. Many internal and external factors influence these decisions. Only few of these studies have examined whether information searches mediate effects of these variables on decision-making behavior or not though separate influence of information search on investment decision making has been studied in the past. In this light, this research explores and examines the mediating effect of information searches on investment decision making behavior of investors by conducting a survey analysis.

Methodology

A questionnaire has been adapted from past literature to collect data from potential investors for analysis. The questionnaires are handed over to investors of Lahore stock exchange. Total 270 questionnaires are distributed, out of which 245 questionnaires are returned by respondents. The response rate of the investors is 90.7%. Five of the received questionnaires are incomplete and 11 are filled by irrelevant persons so these 16 questionnaires are rejected. Hence the number of questionnaires used in the analysis is 229. The sampling technique to be used in this study is convenience sampling. Descriptive analysis and multiple regression analysis are used to analyse the collected data. Table 1 shows the results of Cronbach's alpha which is used to test the reliability and it shows overall reliability to be 0.894 and EFA is used to test the validity of questionnaire. An item with factor loading above 0.4 is considered practically significant. All the items in questionnaire have factor loading above 0.4 except 1 item with 0.38 factor loading but it is not amended here as all the items included in the questionnaires are adapted from valid questionnaires from the past research.

Hypotheses of the study:

This study tests the following hypotheses:

H1: Economic expectations of investor have positive influence on investment decision making behavior.

H2: Economic expectations of investor have positive influence on information search.

H3: Information search has positive impact on investment decision making behavior.

H4: Information search mediates the relationship between economic expectations and investment decision making behavior.

H5: Overconfidence bias has positive influence on investment decision making behavior.

H6: Overconfidence bias has positive influence on information search.

H7: Information search mediates the relationship between overconfidence bias and investment decision making behavior.

Table1: Reliability Test

Variables	**Cronbach's Alpha**	**Items**
All Variables	0.894	26
Overconfidence Bias	0.788	7
Information Search	0.714	7
Economic Expectations	0.615	6
Decision making Behavior	0.703	6

Table 2: Exploratory Factor Analysis

Variables	Items	Factor Loadings
Information Search	I like to discuss financial options before making a decision about them.	0.88
	I would need advice on investment options from professional financial advisors in making financial decision.	0.52
	I would need advice on investment options from family/friends in making financial decision	0.66
	I would like to search for information from magazines and brochures from financial institutions to help making financial decision.	0.66
	I would like to search for information about a firm's expected earnings before investing in a firm.	0.67
	I would like to search for information about firm's financial statements before investing there.	0.59
	I would like to search for information about firm status in industry before investing there.	0.65
Decision Making Behavior	I consider levels of risk associated with particular stocks before investing in stock market.	0.55
	I would like to realize the gain as soon as the stock increases in price.	0.63
	I make sure that my investment in stocks has a high degree of safety investment decision making.	0.67
	In my opinion, it is safe to invest in local stocks rather than to buy international stocks.	0.72
	Considering a stock purchased one month ago for Rs.100, it is found that the stock is now selling at Rs.110. After hold, the stock for one more period, there are 50-50 odds between gaining an additional Rs.10 or "breaking even" I would like to sell the stock to realize the Rs.10-gains now.	0.55

Variables	Items	Factor Loadings
Over Confidence Bias	I make riskier investments for maximum gain.	0.38
	I feel myself qualified to make investment decisions.	0.54
	I feel I can predict future share prices better than others.	0.74
	I think that I have complete knowledge of stock market.	0.73
	I am confident of my ability to do better than others in picking stocks.	0.63
	I believe that my investment will pay higher dividends as compared to others' investment.	0.53
	I think the stocks (shares) of the company I like the most, are good enough for long term investment.	0.42
Economic Expectations	I think the company which I dislike the most will pay less returns on stocks.	0.40
	I think that economic conditions of the country directly affect stock prices in stock market.	0.44
	I consider future economic conditions of the country before taking investment decisions.	0.52
	I think it is best time to invest in shares when economic conditions in the country are good.	0.53
	Any event affecting international financial market will also affect local share prices.	0.45
	I think that the future return on the stock, from a company with strong performance during the past three to five years, is likely to be higher.	0.52
	I think that the future return on the stock, from a company with weak performance during the past three to five years, is likely to be lower.	0.59

Results and Discussion

The results of descriptive statistics, correlation analysis and regression analysis are described in tables 3, 4 and 5 respectively. The first hypothesis of the study has been supported where a significant relationship between economic expectations and decision-making behavior is supposed. The 33.2% change in the decision-making behavior is being explained by economic expectations of the investors. The remaining 66.8% effect on decision making behavior is due to other factors in this equation. As significance of predictor and outcome variables relationship is required for further test run, so now when they have been found significantly associated next relationship can be tested.

In the second equation of first model the effect of information search on economic expectations is 39.4% and β is 0.628 so the relationship is positive and p-value is 0.000 and is <0.05 showing the relationship to be significant so second hypothesis is also accepted in this analysis. The results of third relationship show impact of information search on decision making behavior as positive and significant (R2=0.887, β= 0.942, P= 0.000). So, the H3 hypothesis has also been accepted here and 88.7% impact of information search is found on decision making. The last equation of the first model is to find the association among dependent variable i.e. decision-making behavior with mediating variable i.e. information search and predictor i.e. economic expectations at the same time. The values of R- square in this analysis of the relationship of variables are 0.332 and 0.888 again. The value of β is -0.26 which shows negative relationship between the economic expectations and the outcome when mediator is added. It means if information about market is properly collected by investors before investing then economic expectations influence their decisions in a negative way.

Table 3: Descriptive Statistics

Variables	N	Min	Max	Mean	Std. D.	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	S.E.	Statistic	S.E.
Economic Expectations	230	2.00	5.00	3.6797	.70303	-.237	.160	-.570	.320
Information Search	230	1.80	5.00	3.7272	.66996	-.259	.160	-.125	.320
Decision Making Behavior	230	1.60	5.00	3.7700	.66215	-.453	.160	.854	.320
Over Confidence	230	2.20	5.00	3.8506	.67200	-.466	.160	-.178	.320

Table 4: Correlation Matrix

		Economic Expectations	Information Search	Decision Making Behavior	Confidence Bias
Economic Expectations	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	230			
Information Search	Pearson Correlation	.628	1		
	Sig. (2-tailed)	.000			
	N	230	230		
Decision Making behavior	Pearson Correlation	.575	.942	1	
	Sig. (2-tailed)	.000	.000		
	N	230	230	230	
Confidence Bias	Pearson Correlation	.474	.671	.804	1
	Sig. (2-tailed)	.000	.000	.000	
	N	230	230	230	230

Table 5: Results of Regression Analysis

Regression Paths	R^2	t	β	P
Economic Expectations → decision making behavior	0 .332	10.615	0.576	0.000
Economic Expectations → information search	0.394	12.183	0.628	0.000
Information search → decision making behavior	0.887	42.305	0.942	0.000
Economic Expectations → information search →	0.888	33.477	-0.026	0.362
DM behavior	0.647	20.379	0.804	0.000
Overconfidence bias → decision making behavior	0.451	13.675	0.671	0.000
Overconfidence bias → information search	0.941	14.382	0.732	0.000
Overconfidence bias → information search →				
DM behavior				

In the second model overconfidence bias is the predictor variable, decision making behavior is the dependent variable and information search is the mediating variable. In the first equation, the association between over confidence bias and decision-making behavior is assessed and the results show the level of significance to be positive and significant (R2=0.647, β= 0.804, P= 0.000).

When information search is taken as outcome variable and overconfidence bias as predictor the results indicate the positive and significant relationship between overconfidence and the mediator as β= 0.671, p=0.000<0.05, t=13.675 and R2=0.451 so 45.1% change in information search is being explained by overconfidence bias and B=0.669 in the test result. The relationship between information search and decision-making behavior has already been proved positive and significant. The fourth relationship to be determined is between overconfidence bias and investment decision making behavior by the mediation of information search behavior. The values of R2 are 0.647 and 0.941 for overconfidence bias and information search respectively. The effect of overconfidence bias on decision making behavior is now 64.7% and 94.1% on information search. β values of both variables show positive relationships. The relationship of overconfidence bias with decision making behavior remains significant and positive even after adding the mediating effect of information search.

Sobel test is run to test multiple linear regressions on the data. In the first test, economic expectation is taken as predictor, decision making behavior is the outcome variable and information search is the mediating variable. The existence of full mediation is found in the model. Total effect on independent variable on dependent variable is 54.16% and mediation reduces the effect by 2% so the indirect effect on the decision-making behavior is 56.62%. The second Sobel test is run to determine the effect of over confidence bias on decision making behavior in the presence of information search as a mediator. The over confidence bias influenced investment decision behavior in the mediating effect by 30.78%. This significance shows partial mediation in the model and indirect impact of mediator in the model is 48.35%.

Conclusion and Recommendations

The major drawback of this research is that this research draws conclusions about the investors of a market so it does not show the investment behavior of the investors of other cities of the country. The results are concluded from the data of investors investing in Lahore Stock Exchange and one branch working under its supervision in another city. Further only one bias i.e. over confidence bias is being considered in the study. Although this bias is one of the more influencing and existing bias among the investors but choosing only one bias is not sufficient to understand influence of biases on investor behavior.

Although the variables included in the study have been researched by many researchers in the past but it still needs further work due to the controversy of the results as many studies conclude with totally opposite results. Information search has been added as mediator in this search. Further research can be conducted on the variables influencing on decisions making behavior of investors by mediating different variables in the frame work as investors are not rational always and their investment decision are influenced by different emotions, attitudes and biases.

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