Lay People Beliefs in Professional and Naïve Stock Investors' Proneness to Judgmental Biases

Ms. Priyanka Saxena[1] Dr. Ranjan A. John[2]
[1]Assistant Professor [2]Director (Establishment & Estate)
[1,2]SHUATS, Allahabad (U.P.), India

Abstract— This paper is an empirical study about lay people beliefs in professional and naïve stock investors proneness to judgmental biases. Such biases are potential threats to the efficiency of financial markets and judgmental biases not a big threat to market efficiency rather the number of lay investors is large. There are various studies showing that investors are generally not rational while deciding for investment or markets may not be efficient and therefore prices may significantly vary from fundamental values because of irrational investors. The objective of the study is to re-standardize a measure for beliefs of lay people and naive investors in professional stock investors in making more rational and less biased judgments .Identification of underlying factors of lay people's beliefs in professional stock investors in making more rational and less biased judgments. The underlying factors of naïve stock investors in making more rational and less biased judgments are also studied. And it was found out whether there is a difference between lay people beliefs in professional stock investors and naïve stock investors in making more rational and less biased judgments. The study is descriptive in nature and survey method used to collect responses from the residents of Gwalior city with sample size was of 198 respondents including 99 lay investors and 99 naïve investors. The paper reviewed the judgmental biases of lay people and naïve investor's in stock market. The result from t Test concluded that the variance between two is same.

Key words: Lay People, Naïve Investors, Judgmental Biases, Stock Market

I. INTRODUCTION

Tekçe and Yelmaz (2015) quoted in their paper that empirical evidence in the behavioral finance literature since long have shown one thing that individuals do not behave rationally. Gärling et al. (2013) in their research said that Early research in behavioral finance have demonstrated that investors are prone to judgmental biases (Gärling et al., 2009; Hirshleifer, 2001). Such biases are potential are threats to the efficiency of financial markets (Fama, 1970, 1998). Feng & Seaholes, (2005) and Hon-Snir et al., (2012) further investigated that judgmental biases not be a big threat to market efficiency unless the number of lay investors is large. It is still remains to determine whether lay investors' judgmental biases have market influences, for instance in stock markets influences on trading volume and price volatility (Coval & Shumway, 2005; Gärling, 2011).More recent researches by Gigerenzer ; Gigerenzer & Gaissmaier, 2011; Todd et al., 2012) has clarified that judgmental biases are more often the outcomes of (fast and frugal) heuristics that are adaptive under the circumstances they are applied. But It is also argued that when full information is not available, lay investors applying such heuristics in financial markets would outperform expert investors using other methods in the arsenal of financial economics. Therefore, it is important to assess what influences lay investors' judgmental biases have in financial markets.

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One of the important reasons for deviations from rationality is overconfidence which has a significant impact on markets. Over confidence affects level of trading volume as well as price formation in the stock markets. Overconfidence may come as a result of aggressive trading behavior which may lead investors to pay a significant amount of commissions. Another thing, overconfident investors may hold riskier portfolios than they should tolerate due to their underestimation of risk. Overconfidence not only affects financial markets and prices, but also individuals as they may make suboptimal investments resulting in deterioration of their wealth. This motivated additional research showing that judgmental biases are less frequent among professional investors than among lay people investing in stock markets or among non-investors (e.g. students).

II. LITERATURE REVIEW

Petersson et al. (2013) quoted in their work that an important issue in behavioral finance is whether investors are prone to judgmental biases and the degree to which these biases are possible to correct. (Fama, 1970; Shiller, 2003) told that if not corrected such biases are potential threats to an efficient market.

Menkhoff, Schmeling, & Schmidt, (2013) have done research trying to show that judgmental biases are less frequent among professional investors than among lay people investing in stock markets or people (e.g. students) who are not investors .

Dufwenberg, Lindquist, & Moore, (2005); Fama, (1998) had a strong belief among finance researchers that professional investors owing to their expertise should be less prone to biases than lay investors are. Such a belief may be generalized from knowledge that in general experts perform better than lay people (Ericsson et al., 2006). However, it has been argued for a long time that in contrast to other types of expertise being a professional investor plays little role for judgmental biases (Camerer & Johnson, 1991; Hirshleifer, 2001). Believing that professional investors are less prone to judgmental biases than lay investors may therefore in itself constitute a bias.

Mittal (2010) found that the investment decisions of the investors are influenced by their biases and prejudices. Demographic factors like gender, age, income, education,

wealth and marital status also influence investment decision-making.

Carlander et al investigated the relationship between overall trust in and satisfaction with banks, for the study sample of 293 participants were used. The likert scale was used to test whether the satisfaction, overall trust were three proposed determinants of competence, benevolence, and transparency, and quality of personal services. To analyze the relation equation modeling was used. The result shows a direct effect of overall trust on satisfaction, direct effects of competence on overall trust and indirect effects on satisfaction, direct effects of benevolence on overall trust and indirect effects on satisfaction, and direct effects of transparency on overall trust and indirect effects on satisfaction, and indirect effects of perceived quality of personal services on overall trust and satisfaction through competence, benevolence, and transparency. Practical implications – The research emphasizes the importance of quality of personal services for overall trust in and satisfaction with banks.

Wermers (1999) analyzed the trading activity of the mutual fund industry for the period from 1975 to 1994 to determine that whether the funds "herd" when they trade stocks and to investigate the impact of herding on stock prices. He find little herding by mutual funds in the average stock, Also find much higher levels in trades of small stocks and in trading by growth-oriented funds. Stocks that herds buy outperform stocks that they sell by 4 percent during the following six months; this return difference is much more pronounced among small stocks.

Lee & Fang (2011) analyzed the impact of foreign institutional herding on low turnover stocks in the Taiwan stock market. In the study panel threshold regression was used to analyze the impact of institutional herding behavior on abnormal stock returns in Taiwan. The finding shows the significant evidence of a threshold effect which divides the stocks into higher -turnover and lower -turnover firms. It was found that there is an apparent increase in the subsequent abnormal returns on lower-turnover stocks bought in bulk by foreign investors.

Nofsinger (2005) Behavioral finance illustrates how financial decisions were influenced by cognitive errors, emotion, and mood. The general level of optimism/pessimism in society affects the emotions of most financial decision-makers at the same time which creates biased financial decisions that are correlated across society. Hypothesis were tested which leads to three important outcomes. First, social mood affects the decisions of corporate managers, consumers and investors. High (low) social mood causes an increase of decisions biased by optimism (pessimism) and impact aggregate investment and business activity. Change in social mood and stock market help as a measure to forecast future financial and economic activity.

Barberis & Thaler (2003) argued that some financial phenomena can plausibly be understood using models in which some agents are not fully rational. The field has two building blocks: limits to arbitrage, which argues that it can be difficult for rational traders to undo the dislocations caused by less rational traders; and psychology, which catalogues the kinds of deviations from full rationality we might expect to see. They discussed these two topics, and then present a number of behavioral finance applications: to the aggregate stock market, to the cross-section of average returns, to individual trading behavior, and to corporate finance. They closed by assessing progress in the field and speculating about its future course.

Finucane et.al (2000) examined the inverse relationship between perceived risk and perceived benefits. The relationship was examined under two condition one when the time pressure condition and outcomes was expected that time pressure strengthened the relationship.

Chang & Khorana (2000) examined the investment behavior of market participants of US, Hong Kong, Japan, South Korea, and Taiwan and found that there is no evidence of herding on the part of market participants in the US and Hong Kong , partial evidence of herding in Japan and significant herding for South Korea and Taiwan. Furthermore the study showed that macroeconomic information rather than firm-specific information have a more significant impact on investor behavior in markets which exhibit herding.

Cavalheiro et.al (2011) in order to test the level of risk influence the survey was done in Brazil and finding showed that less tolerant individuals look for safer options for their investments. The results indicated a misattribution bias for the case of the decision process in individuals with positive humor who have shown to be more tolerant to risk

A. Objectives

1) To re-standardized a measure for beliefs of lay people and naive investors in professional stock investors in making more rational and less biased judgments
2) To identify the underlying factors of lay people's beliefs in professional stock investors in making more rational and less biased judgments
3) To identify the underlying factors of naïve stock investors in making more rational and less biased judgments
4) To find out whether there is a difference between lay people beliefs in professional stock investors and naïve stock investors in making more rational and less biased judgments
5) To identify avenue for future research.

B. Research Methodology

The study is descriptive in nature. Survey method will be used to complete it. All the residents of Gwalior city will act as population of study. Individual respondent will act as sampling element. Sample size was of 198 respondents including 99 lay investors and 99 naïve investors. Non-probability quota sampling method will be used. For the purpose of data collection, a re-standardized questionnaire (based on Peterson et. al (2015)) will be used. The scale is Likert type and possessed a sensitivity of 5, where the extreme values namely 1 and 5 represented least agreement and most agreement respectively. Reliability Test will be applied to check to reliability of the questionnaires with the help of Cronbach Alpha. Principal Component Analysis will be applied to find out the underlying factor of lay people beliefs in professional stock investors and naïve stock investors' beliefs in professional stock investors t-test will be

used to find out difference between lay people beliefs and naïve stock investors.

III. Results and Discussions

Questions were constructed based on Peterson et a. (2015) to measure beliefs in that stock investors are overconfident, optimistically biased, influenced by affect, and influenced by others (herding or social influence). Statements were also included to measure beliefs in that professional and naive stock investors are rational.

In the study the questionnaire was administered to investors who invest by themselves as well as through brokers. It is expected that investors who invest by themselves due to their knowledge of finance would believe that professional investors are more rational and less biased than naïve investors are. In contrast, it is expected that who invest through brokers and brokers, being exposed to text-book descriptions of judgmental biases (e.g., Bazerman and Moore, 2008), would believe that professional stock investors are equally biased as naïve investors are.

IV. Method

Two hundred and fifty respondents' investors who invest by themselves as well as through brokers, were administered with the questionnaire. Participants rated how much they would agree to each statement on a seven-point scale ranging from 1 (do not agree) to 5 (agree completely).

The reliability measures of questionnaire (combined) were computed by using SPSS software. Cranach alpha reliability coefficients were computed to calculated reliability of all items in the questionnaire.

V. Reliability Statistics

Reliability Statistics	
Cranach's Alpha	N of Items
.740	25

It was in the above table the value of Cranach alpha was 0.740 which was greater than 0.6. It is considered that reliability of all measure is adequate. So the statements in the questionnaire were treated as reliable statements.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.639
Bartlett's Test of Sphericity	Approx. Chi-Square	930.675
	Df	300
	Sig.	.000

The value of KMO above .6 indicates that the sample was adequate for factor analysis and the value of Bartlett's sphericity significant at .000 indicates that the data is not duplicated. The data matrix is different from identity matrix.

VI. Factor Analysis of Investors Psychology

Factor Name	Total Eigen values	% of variance	Items converged	Factors loads
Rationally	1.994	7.978	R-1 Take into account profit forecasts	.590
			R-2 Purchase currently undervalued stock shares	.553
			R-3 Analyze reports from stock companies	.723
			R-4 Take risk into account when investing in stocks	.528
Social influence	1.874	7.497	R-5 Study and rate the forecasts of various industrial sectors.	.787
			R-23 Purchase only popular shares.	.462
			R-25 Disregards own information and follow the majority	.574
Active influence	1.867	7.470	R-16 Influenced by current mood.	.489
			R-17 Carried away by economic climate.	.666
			R-18 Make bad investments due to strong emotion influences.	.681
Self-decision	1.833	7.334	R-10 Regard own competence superior to what is actually is	.742
			R-24 Purchase and sell the same shares as the majority does	.468
			R-8 Consider own decision base to be better than it is	.675
Sentiment	1.723	6.890	R-15 Expectations too high about stock price increases	.587
			R-19 Allow feelings to guide decisions too much	.589
			R-21 Act similarly to others given the same information	.678
Optimistic	1.643	6.573	R-11 Too optimistic about stock market development	.719
			R-12Underestimate probability of stock market decline	.695
Positively	1.560	6.241	R-13Perceptions of stock market development are overly optimistic	.512
			R-14 Guided by wishful thinking	.835
Over confidence	1.497	5.990	R-6 Overestimate own ability to make good investments	.632
			R-7 Confuse chance influences with own competence	.752

Trust and prediction	1.448	5.792	R-9 Believe to be able to predict stock development better than what is possible	.442
			R-20 Trust feeling too much	.840

VII. Description of Investor Psychology Factors

1) Rationally: - This factor has included the most important determinant of research total variance 7.978. Major elements of this factor include "R-1. Take into account profit forecasts. (0.590)". "R-22 Purchase currently undervalued stock shares. (0.553)". "R-3 Analyze reports from stock companies. (0.723)". "R-4 Take risk into account when investing in stocks. (0.528)".
2) Social influence: - This factor is included has the most important determinant of research total variance 7.497. Major elements of this factor include "R-5. Study and rate the forecasts of various industrial sectors. (0.787)". "R-23 Purchase only popular shares. (0.462)". "R-25 Disregards own information and follow the majority. (0.574)".
3) Active influence: - This factor is included has the most important determinant of research total variance 7.470. Major elements of this factor include "R-16.Influenced by current mood. (0.489)". "R-17 Carried away by economic climate. (0.666)". R-18 Make bad investments due to strong emotion influences. (0.681)".
4) Self-decision: - This factor is included has the most important determinant of research total variance 7.334. Major elements of this factor include "R-10 Regard own competence superior to what is actually is. (0.742)". "R-24 Purchase and sell the same shares as the majority does (0.468)". "R-8 Consider own decision base to be better than it is. (0.675)".
5) Sentiment: - This factor is included has the most important determinant of research total variance 6.890. Major elements of this factor include "R-15.Expectations too high about stock price increases. (0.587)". "R-19 Allow feelings to guide decisions too much. (0.589)". "R-21 Act similarly to others given the same information. (0.678)".
6) Optimistic: - This factor is included has the most important determinant of research total variance 6.573. Major elements of this factor include "R-11 Too optimistic about stock market development. (0.719)". "R-12 Underestimate probability of stock market decline. (0.695)".
7) Positively: - This factor is included has the most important determinant of research total variance 6.241. Major elements of this factor include "R-13 Perceptions of stock market development are overly optimistic. (0.512)". "R-14 Guided by wishful thinking (0.835)".
8) Over confidence: - This factor is included has the most important determinant of research total variance 5.990. Major elements of this factor include "R-6 Overestimate own ability to make good investments (0.632)". "R-7 Confuse chance influences with own competence. (0.752)".
9) Trust and prediction: - This factor is included has the most important determinant of research total variance 5.792. Major elements of this factor include "R-9 Believe to be able to predict stock development better than what is possible (0.442)". "R-20 Trust feeling too much. (0.840)".

VIII. Independent Sample T-test

The independent-samples t-test, compares the means between two unrelated groups on the same continuous, dependent variable. Here the two unrelated groups are of Lay and Naïve investors.

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
VAR00001	Equal variances assumed	1.273	.261	-1.972	196	.050	-3.78756	1.92019	-7.57445	-.00068
	Equal variances not assumed			-1.865	74.929	.066	-3.78756	2.03119	-7.83397	.25884

Here from the above table it can be inferred that the assumption of Equal variances assumed is not rejected as the F value is 1.273 at a significance level of 26.1%. This implies that the variance between two groups is same i.e. the beliefs of lay people and naive investors in professional stock investors in making more rational and less biased judgments is same.

IX. Discussion and Suggestions

The paper reviewed the judgmental biases of lay people and naïve investor's in stock market. The result concluded that the variance between two is same. On the contrary (Menkhoff, 2013) found less proneness among professionals than lay people in stock market. Our result showed both naïve and lay

people are less influenced by various factors and are more rational. Since research factors showed the psychology of both investors in Social and Active influence, Self-decision, Sentiment, Optimistic, Positively, Over confidence, Trust, prediction and rational. Factors related to rationally and social influence reduces the biases among naïve and lay people as found by Ericsson et al., 2006. There are increased possibilities the people have accurate knowledge about stock market as they are expertise being a professional investor. The lay people strong have a strong influence of social and trust as their investment decision are influenced by experts of media. As found in Mittal (2010) that demographic factors also influence investment decision. The finding shows that professional investors & lay people are believed to have personal experience on both rational and confident may reflect an intuitive association between decisiveness.

The role of confidence situation that leads to portray over confidence, knowledge, how to improve stock return, financial literacy, mass media, positive and negative announcement, regular monitoring of stocks, demographic factors such as income, funds, age are suggested as the determinants for further studies.

X. Conclusion

The study was conducted with the basic objectives finding out the factors for beliefs of lay people and naive investors in professional stock investors in making more rational and less biased judgments and further to find out differences between the beliefs of lay people and naive investors in professional stock investors in making more rational and less biased judgment. The study resulted in standardization of a measure for beliefs of lay and naïve investors. Further eight factors emerged out which provides basics for development of such beliefs. The factors were:.

Later in the study t test results showed that the beliefs of lay people and naive investors in professional stock investors in making more rational and less biased judgments is same.

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