

OVERCONFIDENCE, LOSS AVERSION AND DISPOSITION BIASES IN SOY OIL FUTURES TRADERS IN INDIA

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This paper is a maiden attempt at qualitative assessment of incidence and relative importance of three most commonly reported behavioural biases namely overconfidence, loss aversion and disposition biases with respect to traders in commodity futures. Five categories of refined soy oil traders with different trading goals and horizons were identified in Indore area and their responses on the three biases were collected using a questionnaire with 11 questions. Confirmatory factor analysis was used to test the incidence of the three biases and CFA model returned very good fit indices. Overconfidence was most consistent and showed smallest mean scores while loss aversion and disposition showed very similar distributions. Behavioural biases differed across trader categories as well as the trading experience. A three dimensional risk return profile of traders can be modeled which will be useful for financial intermediaries and advisories for customizing their products for traders.

Keywords: *Behavioural Biases, Soy Oil, Overconfidence, Disposition, Loss Aversion, Futures Trading, Commodity Trading.*

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INTRODUCTION

With the availability of internet trading terminals, the number of small traders operating independently in commodity market has increased manifold. These traders frequently subscribe to several trading advisory services, which provide vanilla trade alerts. As the traders belong to different categories have different risk return perceptions, different trading horizons and behavioral biases, there is a need to customize the trading advisory as per the trading profiles of the traders. Behavioral profiling of traders is essential for custom designing of trading portfolios for the clients as per their risk-return profile.

To the best of available knowledge, behavioral profiling of traders in equity or commodity markets has not been studied so far in India. Therefore, this study attempts a trader profiling based on their behavioural biases, with the objective of identifying the latent factors responsible for the trading behavior, with a specific focus on soy oil traders.

Soy oil is the largest traded edible oil in India forming approximately a third of daily trade value in agricultural commodities on three of the major commodity exchanges namely National Commodity and Derivatives Exchange (NCDEX), ACE Commodity exchange (ACE) and Indian Commodity Exchange (ICEX). Refined, bleached, and degummed soy oil is traded on these exchanges as Refined Soy Oil (RSO). Soy oil also has the largest trading footprint across global commodity markets.

OBJECTIVES

This study analyses the three behavioral biases in respect of RSO traders and answers the following research questions-

- Do soy oil traders exhibit overconfidence, loss aversion and disposition biases?
- Do the behavioural biases vary across trader categories of internet traders, professional traders, brokers, institutional traders, and processors?
- Does trading experience has any effect on the behavioural biases?

LITERATURE REVIEW

Behavioral finance literature demonstrates that the individual investor behavior and the decision making process are being affected by various psychological factors. Odean (1998)

states that traders, insiders, and market makers may unconsciously overestimate the precision of their information and rely on it more than warranted. The traders receiving a better than average return may perceive their performance better than the peers, and may trade aggressively. This is known as overconfidence bias. Daniel et. al. (1998), highlight that investors exhibit overconfidence and biased self attribution, i.e., people attribute more credit to their own success. The overconfident investors, according to Glaser and Weber (2007), at the individual level, trade more aggressively.

As overconfident traders increase both trading volume and volatility, Gervais and Odean (2001) find that these traders realize, on average, lower gains. Chuang and Lee (2006) analyse listed companies in US for the period 1963-2001 and show the variety of effects of overconfidence on financial markets. They show that overconfident traders are prone to trade more frequently in relatively riskier stocks following prior market gains. Hirshleifer and Luo (2001) explain the persistence of overconfidence in the market by the fact that overconfident traders are more aggressive than their rational counterparts in exploiting mispricing brought about by noise traders or market makers.

Stratman et. al. (2006) argue that investor's overconfidence is a driver of the disposition effect, which refers to an investor's willingness to hold on to a losing trade and close a winning trade. Unlike the overconfidence effect, which affects the market in general and explains both sides of a given transaction, the disposition effect explains the motivation for only one side of the trade. Kim and Nofsinger (2007) confirm these findings using data from Japanese market. Chou and Wang (2011), using a unique dataset from Taiwan futures exchange which recorded all account level trades and orders, differentiate empirically between overconfidence and disposition effect. Prosad et. al. (2013) report the disposition and overconfidence effects in the Indian equity market and their effect on increase in trading volume at both market level and individual security level.

Status quo is a related but diametrically opposite bias to the overconfidence bias. Hoffmann et. al. (2010) argue that status quo is related to reluctance to trade whereas overconfidence is related to excessive trading. Samuelson and Zeckhauser (1988) define status quo as doing nothing or maintaining one's current or previous decision. Tversky and Shafir (1992) state that choices always produce conflict because investors have difficulties in trading off costs against benefits or comparing risks against value, and thereby they prefer status quo. Tversky

and Kahneman (1981) relate status quo with loss aversion while Samuelson and Zeckhauser (1988) argue that status quo bias may stem from loss aversion, regret aversion, and avoiding cognitive dissonance.

Most investors react to their accumulated losses by avoiding further trading and owning more stocks. They experience a heightened sense of fear of more losses and try to avoid assuming risky trades or suspend all trading temporarily. Kahneman and Tversky (1979) term this as loss aversion. Loss aversion may take hold when an investor desires to hold on to his losing stocks to avoid the regret over a poor decision. This loss aversion can cause traders to hold on to the underperforming stocks to avoid realizing the accrued loss. Traders also avoid selling underperforming stocks to avoid the embarrassment of reporting a loss.

Loss aversion may encourage traders to avoid trading underperforming stocks as they reckon that today's underperforming may eventually outperform today's winning stocks. Loss aversion renders traders to be too conservative in their trading approach. Investors may turn to other conservative investment products such as fixed deposits, unaware that the return on such investments could be negative when inflation is factored in. Consequently, they fail to protect their real wealth. Odeon (1998) reviewed the trading records of 160,000 customers at a large discount brokerage firm through 1987 to 1993 and noted that individual investors projected a significant affinity towards selling winners and holding onto losing stocks. Odeon reported that investors realized gains 1.68 times more frequently than losses. The stocks that were performing well had a 68 percent higher chance of being sold than the poorly performing stocks.

The three commonly reported biases of overconfidence, disposition, and loss aversion are mostly reported out of India. Very few studies on behavioural biases could be located in the Indian context. They are even fewer studies in commodity space. Overconfidence and disposition biases are studied mostly in stock markets vis a vis their impact on the trading volumes (Stratman et al. (2006), Siwar (2011), Daniel et al. (1986), De et al. (2011) etc).

This study is a maiden attempt at qualitative analysis of the behavioural impact of the overconfidence, loss aversion and disposition biases on commodity traders namely, futures traders in soy oil. Confirmatory factor analysis is used to study the differential impact of the three biases on the trading behavior.

RESEARCH METHODOLOGY

Sampling Units, Data and Data Sources

Refined Soy Oil traders are classified into five distinct categories- *Internet traders, Brokers, Professional traders, Institutional traders* and *Processors*. This classification is based on the Commitment of Traders (COT) Report published weekly by the U.S. Commodity Futures Trading Commission (www.cftc.gov).

Internet traders are the traders who place trades on internet terminals either at home or at broker's terminals. These traders trade in smaller lots and have a smaller time horizon for their trades. They also have least access, need or understanding of the fundamental or technical knowledge of the soy oil market. Unlike internet traders, the brokers execute trades on behalf of their clients. They frequently place their own bets as they have inside information of the trends or order placements on the exchanges. Professional Traders category consists of experienced traders working with professional advisory companies. These traders have access to detailed fundamental and technical research and information about the soy oil market, and advise their clients on trading. These three categories of traders are characterized by short to medium term view of the market and settlement of trades on cash basis without any need or interest for physical deliveries of the commodity.

Unlike these three categories of traders, institutional traders and processors maintain longer horizon. They trade in large sizes exceeding 1000 lots of 10 tons each and primarily use the RSO futures for effective price hedging and ensuring supplies for their operations. They base their trading decisions on fundamental and technical analysis of the domestic and international soy oil markets. Institutional traders, however, differ from processors as the institutional traders may or may not be the end users of soy oil whereas the processors are.

Data for the study is collected from Indore region in India, which is the most important centre of soy oil trading in the country. Besides the internet traders, there are a large number of professional traders, brokers, institutional traders and also the processors in Indore and surrounding areas. Indore is also home to Soybean Processors Association of India (SOPA) and is the hub of soy oil business with over 125 processors situated in the Indore region.

Various sources are used for selecting the sample of different trader categories for the survey. The list of internet traders is picked up from the database of the leading commodity trading companies at Indore. There are over 10,000 internet traders registered with them, out of which 70-80 percent remains active. A sample of 380 was drawn from this stratum as per the thumb rule (Field, 2009). Professional traders are approached through two commodity advisory companies namely Capital Via and Matin Capital Advisory. Out of over 300 professional traders associated with these two advisories, a sample of 105 was obtained. Details of brokers are taken from the ACE Exchange and NCDEX member list and a sample of 41 brokers was drawn. The details of institutional traders and processors are taken from SOPA member directory and membership of National Board of Trade (NBOT), Indore and samples of 36 and 29 were collected from these last two categories.

Tool for data Collection

A 27 item questionnaire was administered in a one to one contact with the respondents. The questionnaire comprised of 8 multiple choice questions relating to demography, 8 multiple choice questions on trading style of the traders and 11 Likert response questions relating to the three behavioral biases namely overconfidence, loss aversion, and disposition. A nine point Likert scale measured the responses to items with 1 being “Most Strongly Disagree” to 9 as “Most Strongly Disagree” with 5 as the mid point or “Can’t Say” response to each of the behavioural biases.

A total of 650 respondents were approached with the questionnaires between March 2013 to October 2013. The incomplete surveys were dropped, leaving the final sample size at 591. With 27 items in the questionnaire, the final sample size is more than twenty times the number of measured items, which is adequate as per the thumb rule of sample size that requires the size to be 8-10 times the number of measured items (Field, 2009). The final sample of 591 respondents comprised of 380 internet traders, 105 professional traders, 41 brokers, 36 institutional traders, and 29 processors.

Tools for Data Analysis

The face validity of the questionnaire was tested by submitting the questionnaire to seven traders and academicians at Indore and appropriate corrections were made prior to the data

collection. SPSS 18 was used for the statistical analysis of data. AMOS plugin was used for confirmatory factor analysis.

Pre-tests on data were carried out where the normality of data was checked using histogram plots and internal consistency using Cronbach alpha scores for all the items representing behavioral biases. Based on the frequency of appearance in literature, the behavioural biases of overconfidence, loss aversion, and disposition are treated as the three factors affecting the behavioural biases of the traders. Confirmatory factor analysis was applied on them to assess the relative importance of each factor in traders' decision making process.

Model Fit and Summative Scales

The fit of the CFA model is estimated by several goodness of fit indices such as Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Root Mean Square Error of Approximation (RMSEA) and Standard Root Mean Residual (SRMR).

Following above approach the resulting summative scores of overconfidence, loss aversion, and disposition are computed. The average score range from 1, meaning that the respective bias has virtually no effect on the respective respondent, or in other words the participant is fully rational, to 9, meaning that the respective respondent tends to make decisions that are completely based on the respective bias. In other words the respondent's behaviour is completely intuitive.

Confirmatory Factor Analysis

Figure 1 presents the CFA model fitted to the trader data in the study. Starting with 11 variables, the final model consisted of 7 variables. The model converged with chi squared equal to 19.612 and 10 degrees of freedom. The fit indices for the model are also given in figure 1. As the fit indices CFI, RFI, IFI, NFI, and TLI values are above the preferred level of 0.95 and RMSEA and SRMR are less than 0.05, the model is a good fit.

The construct validity results, placed in Table 2, present the variance extracted (VE), construct reliability, and discriminant validity. As required, the variance extracted were greater than 0.50 and reliability as measured by Cronbach alpha were greater than 0.7 (Hair,

2009) except for Overconfidence (0.597). The final test of discriminant validity, conducted by computing the combined variance extracted (VE) of pairs of factors, was greater than the square of the inter-factor correlations. The factor model passed all the tests of construct validity.

6. Hypothesis Testing

H₀₁: All soy oil futures exhibit behavioural biases.

This hypothesis is tested by a one sample t test for the three behavioural biases. The summative scales on the behavioural biases indicate that a score of 1 indicates rational behavior whereas a score of 9 indicates intuitive behavior. As the minimum possible score is 1, rejection of the null hypothesis of mean equal to 1 will imply that the traders are biased. Hypothesis 1 can be represented as three sub hypotheses as follows:

$$\begin{array}{ll} H_{011}: \mu_{\text{overconfidence}}=1 & H_{A01}: \mu_{\text{overconfidence}}>1 \\ H_{012}: \mu_{\text{loss aversion}}=1 & H_{A02}: \mu_{\text{loss aversion}}>1 \\ H_{013}: \mu_{\text{disposition}}=1 & H_{A03}: \mu_{\text{disposition}}>1 \end{array}$$

The t test is rejected for all three biases (Table 1). The mean scores of the biases exceed one and hence we can conclude that all the soy oil futures traders show incidence of behavioural biases. 95% confidence limits indicate that loss aversion was the most prominent behavioural bias while the overconfidence was the least prominent.

H₀₂: Trader categories exhibit identical biases.

This hypothesis attempts to test for the differences across trader categories. As the traders across categories have different trading objectives they are likely to exhibit differences in their behavioural biases.

$$H_{02}: \mu_{\text{internet traders}} = \mu_{\text{professional traders}} = \mu_{\text{brokers}} = \mu_{\text{institutional traders}} = \mu_{\text{processors}}$$

H_{A2}: At least one mean is unequal.

One way ANOVA is carried out to test the equality of means. A rejection of equality of means across trader categories will indicate that the traders exhibit unequal effects of behavioural biases.

The null hypotheses of equality of means are rejected for overconfidence, loss aversion, and disposition (Table 2). This means at least one of the means is unequal. Post hoc Tukey HSD test (Table A1) for multiple comparison reveals that we fail to reject the hypotheses of equality of means for the pairs of internet traders and institutional traders (category 1 and 4) and professional traders and processors (category 2 and 4) for overconfidence bias.

We fail to reject the hypotheses of equality of means for the pairs of professional traders and processors (category 2 and 4) and institutional traders and processors (category 4 and 5) for loss aversion.

We further fail to reject the null of equality of means for the pair of institutional traders and processors for disposition bias.

H₀₃: Trading experience has no effect on the behavioural biases.

To test this hypothesis we carry out ANOVA to test the equality of means across trading experience.

$$H_{02}: \mu_{<3 \text{ years}} = \mu_{3-5 \text{ years}} = \mu_{5-10 \text{ years}} = \mu_{>10 \text{ years}}$$

H_{A2}: At least one mean is different

The hypotheses that the trading experience has no effect on the trader biases are rejected for over confidence, loss aversion, and disposition. This means that mean scores of at least one pair are not equal for all the three biases. Post hoc Tukey HSD test (Table A2) reveals that we fail to reject the equality of mean hypothesis for the pair of category 2 and 3 (3-5 years and 5-10 years) for overconfidence; and category 3 and 4 (5-10 years and >10 years) for both loss aversion and disposition.

Analysis and Interpretation

The soy oil futures traders showed the presence of all three behavioural biases. The standard deviation and means of the overconfidence, loss aversion, and disposition were plotted to see

the relative incidence of these biases for soy oil traders (Figure 2). The diameters of the circles were kept proportional to the standard deviation. It was found that the incidence of overconfidence was most consistent while loss aversion was least inconsistent. Further the futures traders showed a trend in the mean scores of the behavioural biases. Overconfidence was lowest while disposition was next and loss aversion was highest in the soy oil futures traders. Loss aversion thus represented the most important behavioural bias as the traders strived to conserve their capital.

Figure 3 presents the mean and standard deviation of the distributions of the scores of three behavioural biases for the five categories of traders. All traders except brokers showed comparable mean scores on overconfidence. Brokers showed highest mean scores on overconfidence. Internet traders showed most consistent scores.

The trader categories showed almost identical distributions on both loss aversion and disposition. Processors showed highest spread while internet traders showed largest mean scores. Professional traders showed the lowest mean scores (Figure 3).

One way ANOVA on trader categories revealed unequal mean scores across the five trader categories. This result was expected as the trader categories differ in their trading horizon and market views. Post hoc Tukey HSD tests showed that the pairs of internet traders and institutional traders and professional traders and processors show no significant differences in mean scores of biases. Pairs of professional traders and processors and institutional traders and processors showed no significant difference in mean scores of loss aversion. Institutional traders and processors showed no significant difference in disposition. In other words professional traders and processors showed similar biases on overconfidence and loss aversion. Institutional traders and processors show similar mean scores on loss aversion and disposition.

ANOVA for trading experience rejected the null hypothesis for the equality of the mean scores on overconfidence, loss aversion and disposition biases. In other words the hypothesis that trading experience had no effect on the behavioural biases was rejected. Post hoc Tukey test showed that traders with 3-5 years and 5-10 years experience showed no significant difference in overconfidence while those with 5-10 and >10 years showed similar scores on loss aversion and disposition.

CONCLUSION

The three commonly reported behavioural biases viz., overconfidence; loss aversion and disposition were studied for the soy oil futures traders. It was found that all traders were afflicted with behavioural biases. Mean scores of behavioural biases were different across trader categories in general.

Trading experience had a significant effect on the behavioural biases. Overconfidence was most consistent bias with loss aversion being least consistent. Soy oil traders showed largest magnitudes of loss aversion indicating the desire to control or minimise the loss in trading.

The behavioural biases of overconfidence, loss aversion and disposition of traders can be modeled as a three dimensional behavioural and their risk return profiles can be obtained. These profiles will be immensely useful for the financial and professional trading advisories in customizing their products to suit the trading or investment goals of the clients.

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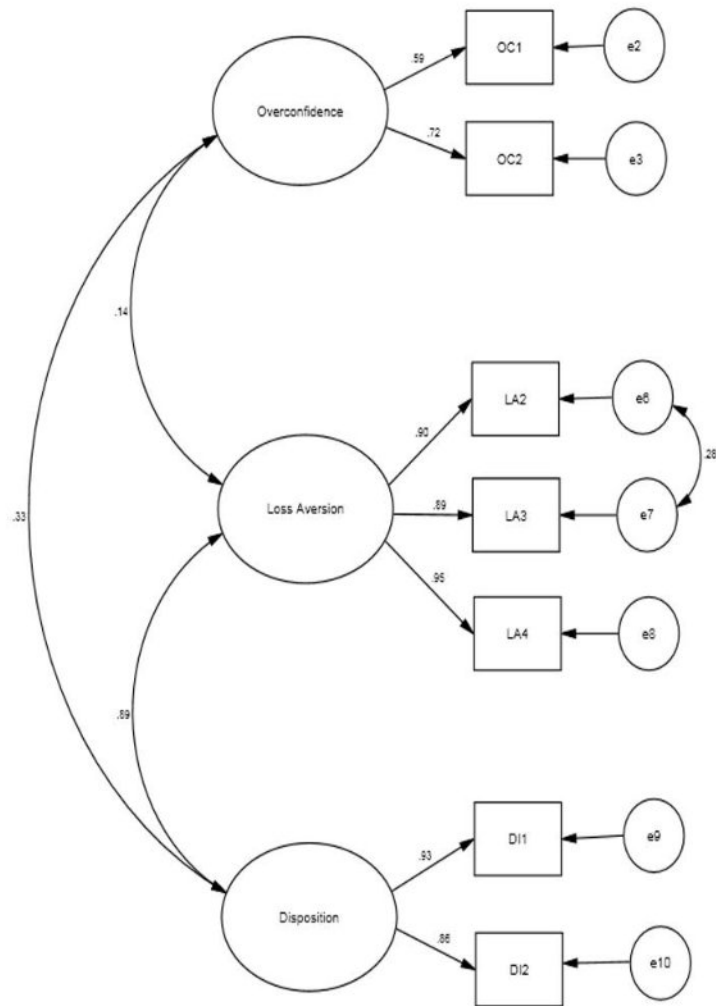
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APPENDIX



Model Fit Summary								
Model	NFI	RFI	IFI	TLI	CFI	CMIN/DF	RMSEA	SRMR
	Delta1	rho1	Delta2	rho2				
Default model	0.994	0.987	0.997	0.994	0.997	1.961	0.040	0.025

Figure 1: Three factor CFA model with fit indices

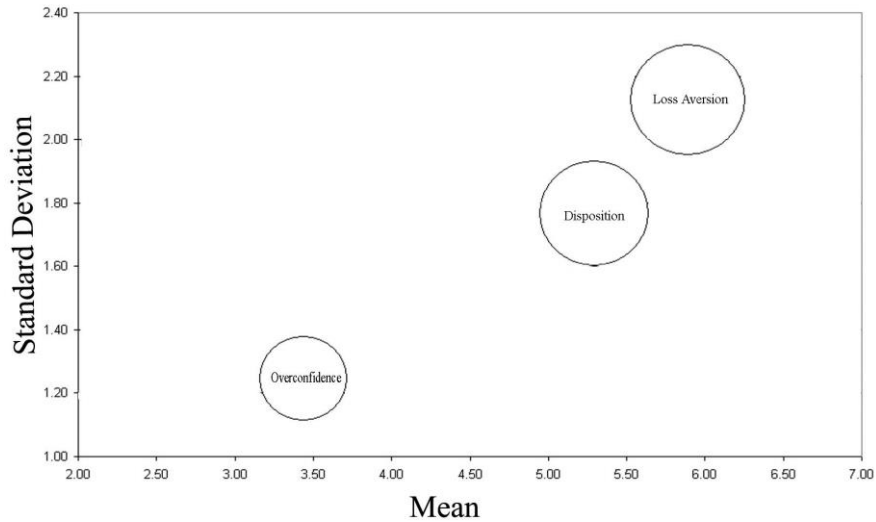


Figure 2: Behavioral biases of Soy Oil Traders

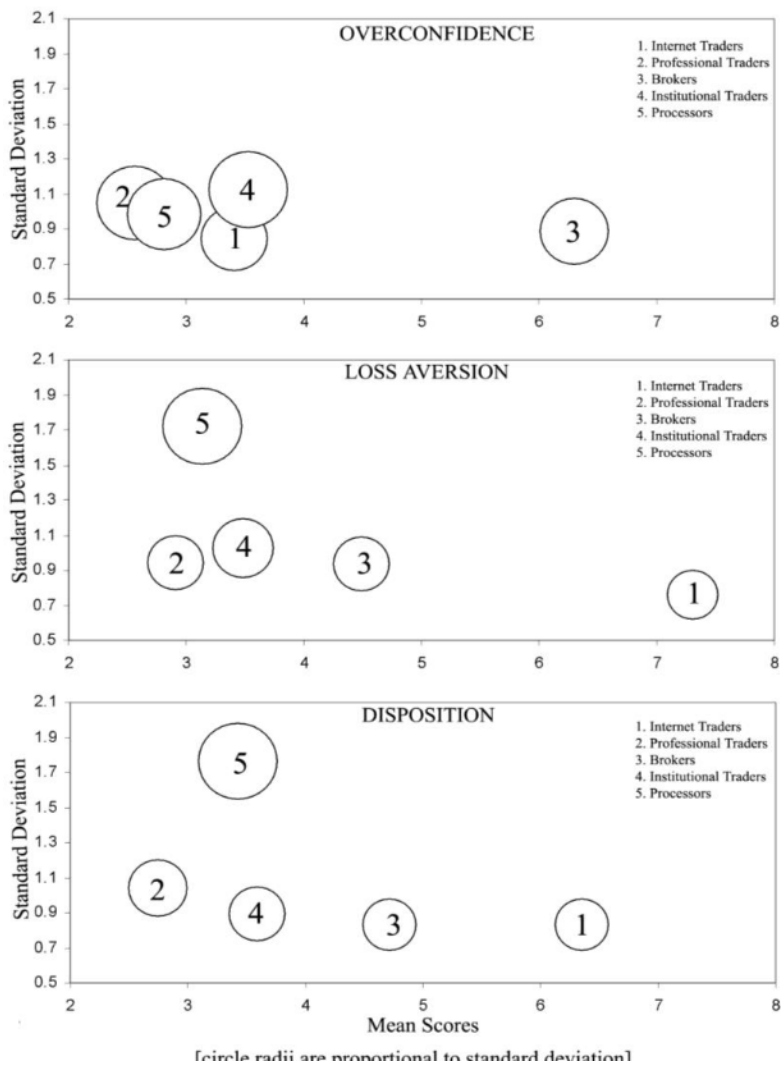


Table 1: Variable Description

S. No.	Bias Name	Bias Description
1	OC1	I am an experienced trader
2	OC2	My forecast on market is better than that of my friends and relatives.
3	LA2	I feel nervous when my holdings lose value.
4	LA3	I will not increase my trades when the market hits a bottom.
5	LA4	When it comes to trading, no loss of capital invested is more important than returns.
6	DI1	I prefer to sell soy oil futures when prices recently increased.
7	DI2	I prefer to keep holding on to trades if their current market price is lower than the price I paid

Table 2: Construct Validity Tests

	Overconfidence	Loss	Disposition	F1-F2	F1-F3	F2-F3
	(F1)	Aversion (F2)	(F3)	Pairwise		
Variance Extracted(VE)	0.656	0.915	0.866	0.618	0.645	0.609
Reliability(Cronbach Alpha)	0.597	0.945	0.886			
Correlation Coefficient				0.14	0.33	-0.89
Discriminant Validity				Yes	Yes	Yes

Table 3: One-Sample Test

	Test Value = 1						Result
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
Overconfidence	47.641	590	.000	2.440	2.34	2.54	Reject Null
Loss Aversion	56.025	590	.000	4.893	4.72	5.06	Reject Null
Disposition	59.142	590	.000	4.297	4.15	4.44	Reject Null

Table 4: ANOVA for Trader Categories

		Sum of Squares	df	Mean Square	F	Sig.
Overconfidence	Between Groups	425.337	4	106.334	127.354	.000
	Within Groups	489.280	586	.835		
	Total	914.618	590			
Loss Aversion	Between Groups	2194.134	4	548.534	689.894	.000
	Within Groups	465.928	586	.795		
	Total	2660.062	590			
Disposition	Between Groups	1303.908	4	325.977	355.903	.000
	Within Groups	536.726	586	.916		
	Total	1840.635	590			

Table 5: ANOVA for Trading Experience

		Sum of Squares	Df	Mean Square	F	Sig.
Overconfidence	Between Groups	146.976	3	48.992	37.463	.000
	Within Groups	767.642	587	1.308		
	Total	914.618	590			
Loss Aversion	Between Groups	1252.364	3	417.455	174.076	.000
	Within Groups	1407.698	587	2.398		
	Total	2660.062	590			
Disposition	Between Groups	622.628	3	207.543	100.022	.000
	Within Groups	1218.006	587	2.075		
	Total	1840.635	590			

APPENDIX

Table A1: Multiple Comparisons (Trader Category)

Dependent Variable	(I) Traderscategory	(J) Traderscategory	Tukey HSD					95% Confidence Interval	
			Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound		
Overconfidence	1	2	.821	.101	.000	.55	1.10		
		3	-2.898	.150	.000	-3.31	-2.49		
		4	-.121	.159	.942	-.56	.31		
		5	.596	.176	.007	.11	1.08		
	2	1	-.821	.101	.000	-1.10	-.55		
		3	-3.719	.168	.000	-4.18	-3.26		
		4	-.942	.176	.000	-1.42	-.46		
		5	-.225	.192	.767	-.75	.30		
	3	1	2.898	.150	.000	2.49	3.31		
		2	3.719	.168	.000	3.26	4.18		
		4	2.777	.209	.000	2.21	3.35		
		5	3.495	.222	.000	2.89	4.10		
	4	1	.121	.159	.942	-.31	.56		
		2	.942	.176	.000	.46	1.42		
		3	-2.777	.209	.000	-3.35	-2.21		
		5	.717	.228	.015	.09	1.34		
	5	1	-.596	.176	.007	-1.08	-.11		
		2	.225	.192	.767	-.30	.75		
		3	-3.495	.222	.000	-4.10	-2.89		
		4	-.717	.228	.015	-1.34	-.09		
Loss Aversion	1	2	4.384	.098	.000	4.11	4.65		
		3	2.808	.147	.000	2.41	3.21		
		4	3.823	.155	.000	3.40	4.25		
		5	4.166	.172	.000	3.70	4.64		
	2	1	-4.384	.098	.000	-4.65	-4.11		
		3	-1.575	.164	.000	-2.02	-1.13		
		4	-.561	.172	.010	-1.03	-.09		
		5	-.217	.187	.773	-.73	.29		
	3	1	-2.808	.147	.000	-3.21	-2.41		
		2	1.575	.164	.000	1.13	2.02		
		4	1.014	.204	.000	.46	1.57		
		5	1.358	.216	.000	.77	1.95		
	4	1	-3.823	.155	.000	-4.25	-3.40		
		2	.561	.172	.010	.09	1.03		
		3	-1.014	.204	.000	-1.57	-.46		
		5	.344	.222	.534	-.27	.95		
	5	1	-4.166	.172	.000	-4.64	-3.70		
		2	.217	.187	.773	-.29	.73		
		3	-1.358	.216	.000	-1.95	-.77		
		4	-.344	.222	.534	-.95	.27		
Disposition	1	2	3.565	.106	.000	3.28	3.85		

	3	1.636	.157	.000	1.21	2.07
	4	2.758	.167	.000	2.30	3.21
	5	2.924	.184	.000	2.42	3.43
2	1	-3.565	.106	.000	-3.85	-3.28
	3	-1.929	.176	.000	-2.41	-1.45
	4	-.807	.185	.000	-1.31	-.30
	5	-.641	.201	.013	-1.19	-.09
3	1	-1.636	.157	.000	-2.07	-1.21
	2	1.929	.176	.000	1.45	2.41
	4	1.122	.219	.000	.52	1.72
	5	1.288	.232	.000	.65	1.92
4	1	-2.758	.167	.000	-3.21	-2.30
	2	.807	.185	.000	.30	1.31
	3	-1.122	.219	.000	-1.72	-.52
	5	.166	.239	.957	-.49	.82
5	1	-2.924	.184	.000	-3.43	-2.42
	2	.641	.201	.013	.09	1.19
	3	-1.288	.232	.000	-1.92	-.65
	4	-.166	.239	.957	-.82	.49

Table A2: Multiple Comparisons

Tukey HSD

Dependent Variable	(I) TradingExperience	(J) TradingExperience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Overconfidence	1	2	.362	.108	.005	.08	.64
		3	1.144	.337	.004	.28	2.01
		4	-1.011	.130	.000	-1.35	-.68
	2	1	-.362	.108	.005	-.64	-.08
		3	.783	.341	.100	-.10	1.66
		4	-1.373	.139	.000	-1.73	-1.01
	3	1	-1.144	.337	.004	-2.01	-.28
		2	-.783	.341	.100	-1.66	.10
		4	-2.156	.348	.000	-3.05	-1.26
	4	1	1.011	.130	.000	.68	1.35
		2	1.373	.139	.000	1.01	1.73
		3	2.156	.348	.000	1.26	3.05
Loss Aversion	1	2	2.269	.146	.000	1.89	2.65
		3	3.754	.456	.000	2.58	4.93
		4	3.529	.176	.000	3.08	3.98
	2	1	-2.269	.146	.000	-2.65	-1.89
		3	1.484	.461	.007	.30	2.67
		4	1.260	.189	.000	.77	1.75
	3	1	-3.754	.456	.000	-4.93	-2.58
		2	-1.484	.461	.007	-2.67	-.30
		4	-.224	.472	.964	-1.44	.99

	4	1	-3.529	.176	.000	-3.98	-3.08
		2	-1.260	.189	.000	-1.75	-.77
		3	.224	.472	.964	-.99	1.44
Disposition	1	2	1.741	.136	.000	1.39	2.09
		3	2.942	.424	.000	1.85	4.03
		4	2.331	.164	.000	1.91	2.75
	2	1	-1.741	.136	.000	-2.09	-1.39
		3	1.201	.429	.027	.10	2.31
		4	.590	.176	.005	.14	1.04
	3	1	-2.942	.424	.000	-4.03	-1.85
		2	-1.201	.429	.027	-2.31	-.10
		4	-.611	.439	.505	-1.74	.52
	4	1	-2.331	.164	.000	-2.75	-1.91
		2	-.590	.176	.005	-1.04	-.14
		3	.611	.439	.505	-.52	1.74

A3. QUESTIONNAIRE

Q1. Name and address.

Q2. Center

(1) Indore

(2) Mandsaur

(3) Harda

Q3. Age:

(1) <30

(2) 30-40

(3) 40-50

(4) >50

Q4. Gender:

(1) Male

(2) Female

Q5. Marital Status:

(1) Married

(2) Single

Q6. Education:

(1) High School

(2) Intermediate

(3) Graduate

(4) Post Graduate

(5) Others (specify) _____

Q7. Annual family income:

(1) <50000

(2) 50-100,000

(3) 100,000-200,000

(4) >200,000

Q8. Who is the principal decision maker in your house?

(1) You

(2) someone else

Q9. Years of trading Experience:

- (1) <3 yrs
- (2) 3-5 yrs
- (3) 5-10 yrs
- (4) >10yrs

Q10. Are you a-

- (1) Day Trader
- (2) Swing Trader
- (3) Position Trader

Q11. What is the rupee volume of trades that you make per week?

- (1) <50 lakhs
- (2) 50lakhs -1Crore
- (3) 1 Crore-5 Crore
- (4) >5 Crore

Q12. Are you a:

- (1) Internet Trader
- (2) Professional Trader.
- (3) Broker
- (4) Institutional Trader
- (5) Processors

Q13. Do you trade:

- (1) Yourself
- (2) With professional advice
- (3) others(specify) _____

Q14. Do you trade with

- (1) Stop loss
- (2) Target Price
- (3) Max profit

Q 15 Do you trade based on

- (1) Business TV
- (2) Professional Advisory
- (3) Mandi data
- (4) None of these

Q16. Do you trade with

- (1) Technical Analysis
- (2) Fundamental Analysis
- (3) None of these

