INVESTIGATING THE INFLUENCE OF EMOTIONAL BIASES ON THE PROCESS OF INVESTMENT DECISION MAKING: A STUDY OF DELHI-NCR

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ABSTRACT

The purpose of the present study is to investigate the role of different emotional biases on the investment decision making of the individuals. The emotional biases studied include regret aversion bias, herd bias, overconfidence bias, locus of control and disposition effect bias. The research design adopted for the study is descriptive and exploratory in nature. The target population of the study are the individuals who had made any sort of investment from all age groups, gender and profession The sample for the study was chosen through convenience sampling and data was collected using structured and adapted questionnaire from both online and offline modes. The collected data was being analysed using structural equation modelling with the help of SPSS and Amos software. The results showed a significant effect of emotional biases on the investment decision making process of the individuals. The results of the study can be used by the investment experts, agents and professionals in understanding the emotional biases of their clients impacting their investment decisions. Thus, they can provide requisite guidance to the investors for making a rational decision. The major limitation of the study includes that the sample collected for the study is from the region of Delhi only. Also, a limited number of emotional biases are considered for the study. Future studies can be performed with other emotional biases.

Keywords: *Emotional, Bias, Regret, Investment Decision Making, Investors*

INTRODUCTION

Investment is considered to be inevitable for each individual. Investing in any business / avenue like stock market, bank deposits, bullion etc requires proper assessment of different factors, both external and internal. In external factors, investor must consider company's financial statements, inflation, prevailing interest rates, or several supporting letters for the existence of assets **(Sevdalis & Harvey, 2007; Oehler et al., 2018)** while internal factors are mostly psychological and involve cognitive, affective and psychomotor levels **(Statman, 2017)**. Investment success can be defined as a continuous process of meeting investment needs of either generating an income stream for retirement or to secure the capital. Investment success can be achieved only with prudent

and rational decision making which in real sense seems to be challenging.The emergence of psychological biases in behavioral finance tends to shift rational to irrational actions while making investment decisions (Peters, 2003). During investment decision making process, an individual as an investor faces several thoughts and emotions deliberately or involuntarily which impacts the decision making process. These emotions and thoughts has led to the evolution of a new branch of finance known as behavioural finance which studies how cognitive and emotional thought processes influences decision making. In the current study, an attempt is being made to study the influence of emotional biases on the decision making process.

Overconfidence can be described as a condition in which persons felt to be extremely optimistic about their outcome result. Also, whenever performance of the market is high, they believed this is actually because of their performance **(Zahera and Bansal, 2018)**. The another bias, regret aversion happenswhen due to the fear of any negative outcome, investor is not ready to make any kind of decision and holds the feeling of regret afterwards. The regret of not making the right decision at the right time is the reason for the emotional pain that impacts the future decision making of the investor. Regret aversion bias has been researched in many papers **(Loomes and Sugden, 1982**; Bell, 1982). Even many researchers (Kengatharan and Kengatharan, 2014; Lim, 2012; Khan, 2017) found that regret aversion can impact positively on the investment decision making process. **Trueman, (1994)** discussed about the herd bias and concluded that investors facing this bias holds a lot of information but they often ignore the available information and make their decisions on the basis of others. It is believed that when investor is highly influenced by the emotions, often restore to this bias instead of making their own decisions (Kahneman et al., 2011; Shiller, 2003). **Shefrin and Statman (1985)** discussed the disposition effect bias as a tendency of the investors to sell assets that have capital appreciation while holding other assets for a much longer duration. Another bias, locus of control describes how a person perceives all his/her life events. Person inclined more towards internal locus of control consider he/she is responsible for all actions /events of his life while persons inclined towards external locus of control consider fate, destiny etc to control his/her life events. **Rotter (1954)**, describes the bias as the degree to which people believe that they, as opposed to external forces (beyond their influence), have control over the outcome of events in their lives.

Kumari (2018) conducted one study in Eastern India and explored the influence of three psychological biases on investment decision making and concluded that all biases have a significant relationship with the decision-making process and also explored the association between bias and the amount of investment and found that investors with a high overconfidence bias have a high investment in the capital market. **Bakara & Yia (2016)** concluded that overconfidence, conservatism and availability bias have significant impacts on the investors' decision making while herding behaviour has no significant impact on the investors' decision making. **Antony & Joseph (2016)** carried out their study in Kerala concluded that the

investors of Kerala were highly influenced with overconfidence bias and regret aversion. Herd behaviour had less effect on their decision-making. **Bashir et al (2013)** reported a weak negative correlation between overconfidence bias and other behavioural bias with the decision making process among Gujarat investors in their study.Because of numerous studies in the area of behavior finance, gradually it became clear that people do hold emotions that hinders rational decision making but also they commit flaws in the decision making because of mistakes in the thinking process known as psychological biases. By understanding these biases and its influence on the investors decision making it may be possible to improve the economic outcomes. Thus this current study is conducted to check the different dimensions of emotional biases hampering prudent decision making and its association with the investment decision making of the individual investors.

REVIEW OF LITERATURE

Overconfidence Bias and Investors Decision Making

Manalu (2022), studies different bias among Malang investors and concluded that representative bias, anchoring bias and overconfidence bias has a positive influence on the decision making. **Yuwono and Elmadiani (2021)** conducted a study on millennial investors to investigate the relationship of different biases on the investment decision making and concluded that availability bias, loss aversion and herding bias have a substantial influence on the decision making while other biases like overconfidence has no influence on the decision making aspect. **Hidayah and Irowati (2021)** analysed multiple variables and concluded that risk perception as well as overconfidence bias significantly influences the investment decision while another variable studied known as regret aversion doesn't influence the decision making among Yogyakarta people. **Rahman and Gan (2020)** conducted a study in Malaysia to explore the behavior factors impacting investment decision making among Generation Y investors. The study was conducted with different human behaviors traits like anger, anxiety, over confidence, herding and self-monitoring. The data was collected using an adapted questionnaire through 502 investors in the age group of 18-36 years. Results showed that behavioral traits like anxiety, overconfidence are negatively related to investment decisions while self- monitoring is positively associated with investment decisions. **Parveen et al. (2020)** in their research has used the technique of fuzzy hierarchical process to check the most influential factors affecting the decision making. The three most influential factors which influence the decision making were the herding bias,loss aversion and overconfidence bias out of all the biases considered with the respondent population consisting of equity investors of Punjab. **Ainia and Lutfi (2019)** in their research conducted through PLS Sem demonstrated that overconfidence bias has a positive influence on the decision making procedure. Higher the level of overconfidence, higher would be the chances for more allocation of the funds for investment. The study is being conducted with 400 responses collected through adapted questionnaire method. **Madaan and Singh (2019)** stated that overconfidence and herding bias have significant positive impact on investment decision while

bias like disposition and anchoring have no significant impact on investment decision making. **Narasimha and Mushinada(2019)** tried to explore the relationship between individual's rationality and behavior biases like self-attribution bias and overconfidence bias in Indian stock market. The data was collected with the help of structured questionnaire from investors having at least five years' experience in stock trading. The sample was collected from five different states i.e. Bengaluru, Hyderabad, Mumbai, Delhi and Kolkata. The data collected was analyzed using structural equation modeling approach to understand the relationship between individual's rationality and behavior biases. The results stated the presence of bias among investors of Indian Stock market. **Jain et al. (2019)** conducted study to rank the behavior biases influencing the investment decision making of individual equity investors. The research was conducted among Punjab investors. The data collected was analyzed using fuzzy analytic hierarchical process and it was stated that the most influential criteria that effect the investment decision making among Punjab investors are herding bias, loss aversion bias and overconfidence bias. **Kumari (2018)** conducted one study in four states of Eastern India i.e. Odisha, west Bengal, Jharkhand and Bihar and explored the influence of three psychological biases on investment decision making and also explored the association between bias and the amount of investment The data was collected from 385 investors of different segments of the Indian capital market and was analyzed using factor analysis, correlation and regression. The results concluded that all biases have a significant relationship with the decision-making process and investors with a high overconfidence bias have a high investment in the capital market. **Hayat and Anwar (2016)** conducted a study to explore the influence of behavioral biases on investment decision making and to find out the moderating role of financial literacy. The structured questionnaire was used to collect data from 180 individuals who had investment in Karachi Stock Exchange and Islamabad Stock Exchange. Regression analysis was performed to explore the said relationship. The results of the study showed that disposition effect, overconfidence and herding have significant positive impact on investment decision among investors of Pakistan.

Alquraan et al.(2016) explored the behavioral finance factors influencing the stock investment decision of individual investors at Saudi Stock Market with the help of random sampling using structured questionnaire. The data collected was analyzed using regression and ANOVA test. The findings showed that behavioral finance factors like Loss Averse, Overconfidence and Risk Perception have significant effect on the stock investment decisions of individual investors in Saudi Stock Market, while Herd behavior has insignificant effect.

Herd Bias

Yuwono and Elmadiani (2021) conducted a study on millennial investors to investigate the relationship of different biases on the investment decision making and concluded that availability bias, loss aversion and herding bias have a substantial influence on the decision making while other biases like overconfidence has no influence on the decision making aspect. **Khan (2020)** explored the impact of cognitive biases on investment decisions in Pakistani

market and also explored the moderating role of financial literacy. To conduct the study, adapted structured questionnaire was used and 250 respondents filled the questionnaire. To explore the direct and in direct effects of cognitive biases correlation and regression analysis was performed. The results concluded that herding bias, disposition effect and mental accounting has a positive impact on investment decisions while role of financial literacy as a moderator is both positive and negative as it positively associated with disposition effect while for other biases like herding, mental accountability it has negative impact. **Madaan and Singh (2019)** stated that overconfidence and herding bias have significant positive impact on investment decision while bias like disposition and anchoring have no significant impact on investment decision making. **Jain et al. (2019)** conducted study to rank the behavior biases influencing the investment decision making of individual equity investors. The research was conducted among Punjab investors. The data collected was analyzed using fuzzy analytic hierarchical process and it was stated that the most influential criteria that effect the investment decision making among Punjab investors are herding bias, loss aversion bias and overconfidence bias. **Hayat and Anwar (2016)** conducted a study to explore the influence of behavioral biases on investment decision making and to find out the moderating role of financial literacy. The structured questionnaire was used to collect data from 180 individuals who had investment in Karachi Stock Exchange and Islamabad Stock Exchange. Regression analysis was performed to explore the said relationship. The results of the study showed that disposition effect, overconfidence and herding have significant positive impact on investment decision among investors of Pakistan.

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Regret Aversion

Hidayah and Irowati (2021) analysed multiple variables and concluded that risk perception as well as overconfidence bias significantly influences the investment decision while another variable studied known as regret aversion doesn't influence the decision making among Yogyakarta people

Loss Aversion

Yuwono and Elmadiani (2021) conducted a study on millennial investors to investigate the relationship of different biases on the investment decision making and concluded that availability bias, loss aversion and herding bias have a substantial influence on the decision making while other biases like overconfidence has no influence on the decision making aspect. **Parveen et al. (2020)** in their research has used the technique of fuzzy hierarchical process to check the most influential factors affecting the decision making. The three most influential factors which influence the decision making were the herding bias,loss aversion and overconfidence bias out of all the biases considered with the respondent population consisting of equity investors of Punjab. **Jain et al. (2019)** conducted study to rank the behavior biases influencing the investment decision making of individual equity investors. The research was conducted among Punjab investors. The data collected was analyzed using fuzzy analytic hierarchical process and it was stated that the most influential criteria that effect the investment decision making among Punjab investors are herding bias, loss aversion bias and overconfidence bias. **Alquraan et al.(2016)** explored the behavioral finance factors influencing the stock investment decision of individual investors at Saudi Stock Market with the help of random sampling using structured questionnaire. The data collected was analyzed using regression and ANOVA test. The findings showed that behavioral finance factors like Loss Averse, Overconfidence and Risk Perception have significant effect on the stock investment decisions of individual investors in Saudi Stock Market, while Herd behavior has insignificant effect.

H1 There is a significant association between overconfidence bias and investment decision making

H2 There is a significant association between herding bias and investment decision making.

H3 There is a significant association between regret aversion bias and investment decision making.

H4 There is a significant association between disposition effect and investment decision making.
H5 There is a significant association between loss aversion and investment decision making.

RESEARCH OBJECTIVES

On the basis of available literature done in the past in the domain of emotional biases and investor decision making, the dimensions of emotional bias are being defined using a modified scale. If all the dimensions used are valid and appropriate, it will influence the decision-making process of the investors. To analyse and check the validity of the proposed model, the two models are framed.
Model 1: This model aims to tests the first order confirmatory factor analysis performed between the various emotional bias and investor's decision making. If the model fit indices and other critical ratios are significant, influence of different emotional biases on investor's decision making will be measured.
Model 2: Emotional bias influences the investor's decision making i.e. application of second order Confirmatory Factor analysis. If the model fit indices and other critical ratios is significant, influence of emotional bias as a second order construct on investor's decision making will be measured.

RESEARCH METHODOLOGY

The present study is descriptive and exploratory in nature. The data for the research work is collected from the Delhi -NCR region covering all categories of financial investors who undertakes investments among various avenues like investment of fund in stock market, investment of funds in mutual funds, in traditional banking system, in dynamic real estate, bullion, etc. With the help of available literature, an adapted and structured questionnaire was framed and was circulated via both online and offline mode for collecting responses. The study used convenience sampling method for circulating online and offline questionnaires. The questionnaire is distributed to nearly 800 respondents however only 570 responses are considered for the analysis because of missing information. Analysis of data was performed using structural equation modelling performed with SPSS software.
Following table1 highlights the demographic profile of the respondents.

Table 1: Demographic Statistics.

Demographic	N	Percentage
Gender		
Male	367	64.4%
Female	203	35.6%
Education		
Graduate	247	43.3%
Post- Graduate	172	30.2%
Others	151	26.8%

Age		
Between 20-30 years	119	20.9%
30-40 years	222	38.9%
40-50 years	131	23%
Above 50 years	98	17.2%
Investment Options		
Stock market	145	25.4%
Derivative	99	17.4%
Bank Deposits	157	27.5%
Real Estate	75	13.2%
Bullion	72	12.6%
Others	22	3.9%

RESEARCH INSTRUMENTS

The dependent variable of the study i.e. investor's decision making was measured with the help of an adapted scale comprising of five statements taken from the study of Scott and Bruce (1995). The independent variable used in the study is various emotional biases which are measured with the help of previous research works. The scale used for herding bias and overconfidence was adopted from the research work done by Antony and Joseph (2017) while scale for regret aversion was taken by the studies conducted by Waweru et al (2008) Another scale adopted for measuring locus of control bias is Rasheed,Rafique, Zahid & Akhtar (2018)) while the scale used for disposition effect was taken from the studies of Khan (2020)

CONFIRMATORY SAMPLE RESULTS

For the determination of the measurement model confirmatory factor analysis (CFA) was performed using the sample size of 570 respondents collected from the Delhi-NCR region. The measurement model is run using the AMOS software. In total, 745 responses were collected and were coded into SPSS version 18 for data filtration and checking for missing frequencies. Out of the total responses of 745, only 570 were found to be complete in each aspect and used for doing the final analysis.

For model 1 as depicted in Fig 1 (fit indices) are p-Value < 0.001, chi-square = 646.864, df = 309, CMIN/df = 2.093, the value of comparative fit index (CFI) = 0.954, whereas value of goodness-of-fit index (GFI) = 0.918, Tucker–Lewis index (TLI) = 0.948 and badness of fit indicated as root mean square error of approximation (RMSEA)= 0.044. The regression weights, SE, CR, p value of each item of each construct is shown in the table 2 and it has been observed that all constructs are reliable and valid as the individual factor loadings of all items are above the threshold limit of 0.7 (Hair et al., 2006).

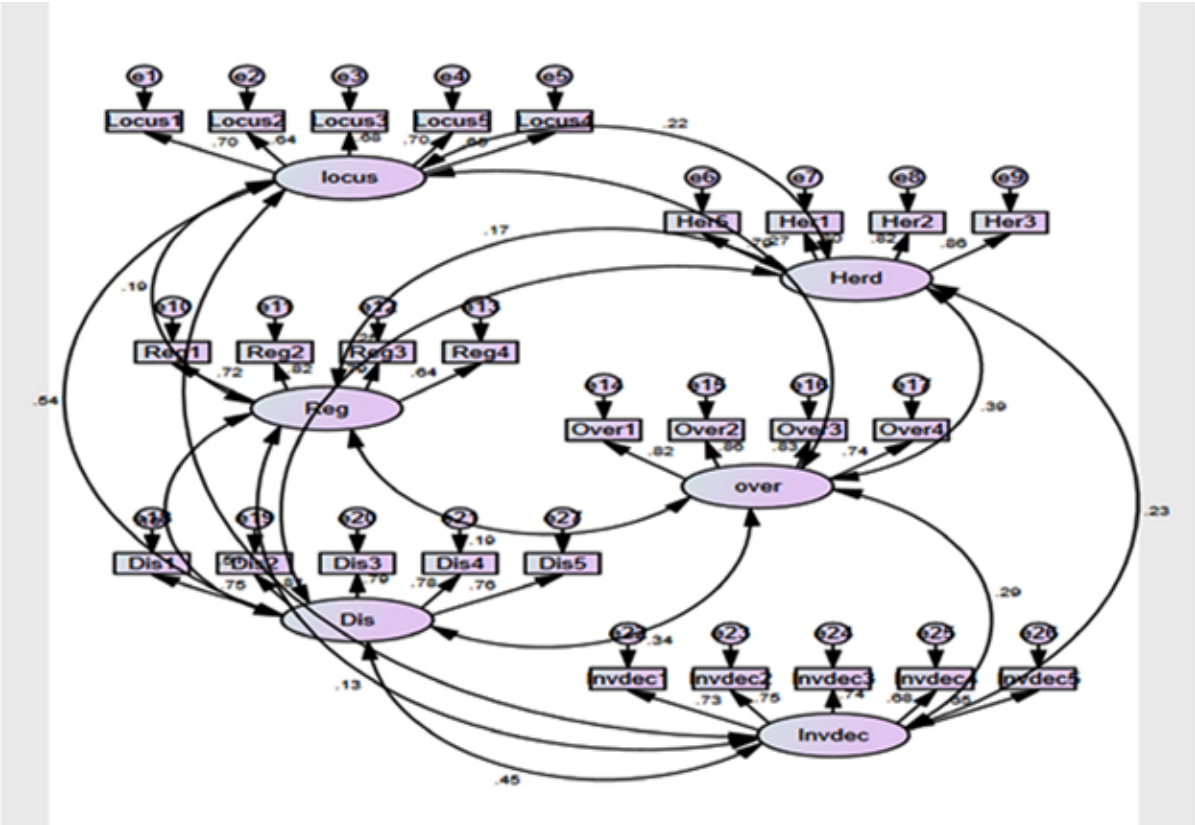

Figure 1: Model 1(Confirmatory Factor Analysis between Emotional Bias and Investment Decision Making)

Table 2: Model 1, Regression weight Measurement.

Item	Construct	Estimate	Regression weight	S.E.	C.R.	P
Locus1	Locus of Control Bias	1	0.705			
Locus2		0.916	0.639	0.069	13.246	***
Locus3		0.98	0.676	0.07	13.905	***
Locus5		0.985	0.704	0.068	14.376	***
Locus4		0.866	0.655	0.064	13.526	***
Her5	Herd Bias	1	0.788			
Her1		1.028	0.805	0.051	20.325	***
Her2		1.111	0.825	0.053	20.921	***
Her3		1.125	0.86	0.051	21.898	***

Reg1	Regret Aversion Bias	1	0.717			
Reg2		1.358	0.816	0.081	16.756	***
Reg3		1.369	0.792	0.083	16.487	***
Reg4		1.164	0.636	0.085	13.637	***
Over1	Over confidence Bias	1	0.815			
Over2		1.037	0.856	0.046	22.761	***
Over3		0.958	0.83	0.044	21.977	***
Over4		0.894	0.743	0.047	19.073	***
Dis1	Disposition Effect	1	0.748			
Dis2		1.054	0.813	0.055	19.131	***
Dis3		1.039	0.792	0.056	18.644	***
Dis4		0.936	0.775	0.051	18.228	***
Dis5		0.95	0.765	0.053	17.962	***
Invdec1	Investors Decision Making	1	0.732			
Invdec2		0.992	0.746	0.061	16.138	***
Invdec3		1.001	0.742	0.062	16.066	***
Invdec4		0.85	0.676	0.058	14.74	***
Invdec5		0.823	0.648	0.058	14.14	***

CONSTRUCT VALIDITY AND RELIABILITY

Convergent and discriminant validity for all the constructs are established for all the constructs used in the study as mentioned in the following table 3 . Validity statistics presents CR of all constructs are more than the threshold limit of 0.7 i.e CR of regret aversion (0.831) overconfidence (0.885) herd bias(0.891) locus of control (0.808) and disposition effect (0.885) and Average variance explained AVE more than threshold limit of 0.05 i.e. regret aversion (0.553) overconfidence (0.659) herd bias(0.672) locus of control (0.457) and disposition effect (0.607) while the AVE of all constructs are more than MSV i.e. AVE> MSV and AVE > ASV.

Table 3: Model 1, Convergent Validity and Discriminant Validity Measurement.

	CR	**AVE**	**MSV**	**ASV**	**Dis**	**locus**	**Herd**	**Reg**	**over**	**Invdec**
Dis	0.885	0.607	0.286	0.138	0.779					
locus	0.808	0.557	0.286	0.141	0.535	0.676				

Herd	0.891	0.672	0.155	0.070	0.248	0.223	0.820			
Reg	0.831	0.553	0.037	0.029	0.160	0.193	0.170	0.744		
over	0.885	0.659	0.155	0.092	0.335	0.273	0.394	0.190	0.812	
Invdec	0.835	0.504	0.256	0.123	0.454	0.506	0.232	0.128	0.285	0.710

CONFIRMATORY FACTOR ANALYSIS WITH SECOND ORDER CONSTRUCT

Another model 2 was framed, which attempts to explain confirmatory factor analysis between emotional bias as a second order construct of different emotional biases and investors decision making as depicted in Figure 2.

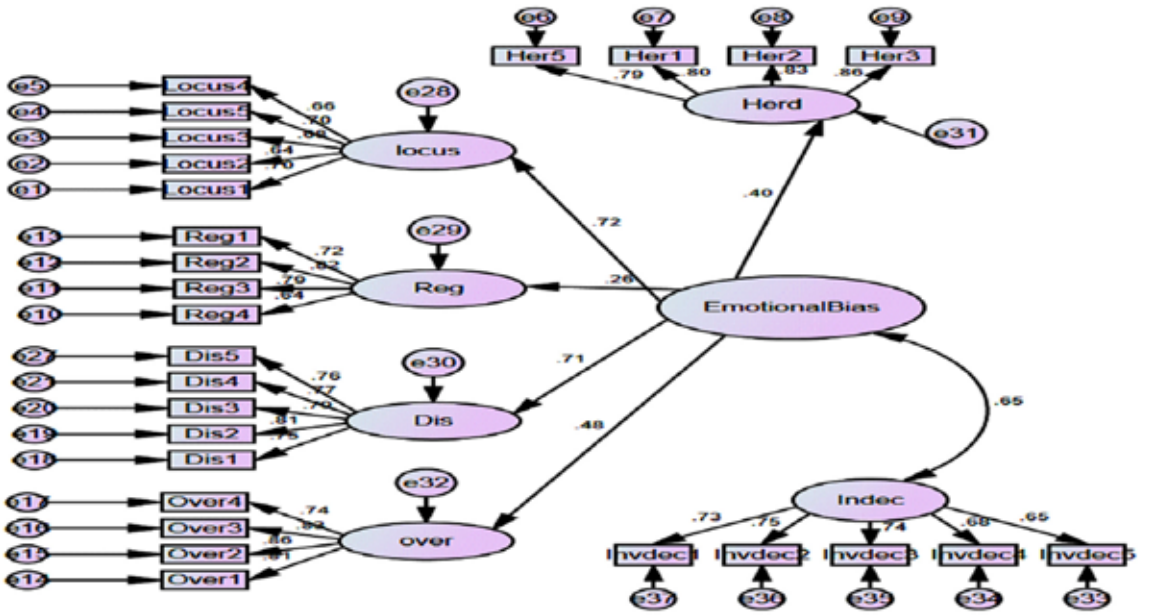

Figure 2: Model 2 CFA between Emotional Bias as a Second Order construct and investment Decision Making.

For the above model 2, emotional bias is conceptualized as a second order composite of different first order constructs like regret aversion bias, overconfidence bias, locus of control bias, herd bias and dis bias. The basic condition to test the model as a second order construct is the presence of multicollinearity among various Zero order constructs. The correlation between Locus of control & Overconfidence (0.56) overconfidence and herd behaviour (.62), locus of control and herd behaviour (0.632),overconfidence and regret aversion(0.512), All correlation statistics except one are greater than 0.5, the minimum threshold limit .

The significant test results for goodness of fit indices of for emotional bias the model fit indices stood at chi-square = 424.355, df = 204, CMIN/df = 2.08, the value of comparative fit index (CFI) = 0.964, whereas value of goodness-of-fit index (GFI) = 0.935, Tucker–Lewis index (TLI) = 0.959 and badness of fit indicated as root mean square error of approximation (RMSEA) = 0.044
The factor loading of for emotional constructs are regret aversion (.287), overconfidence (.514), locus of control (.667) herd bias (.429) and dis (.707)thus the composite reliability emotional bias is 0.759 above the threshold limit of 0.7 and AVE is coming out to be 0.296, although below the threshold limit of 0.05 but if CR > 0.06, AVE less than 0.05 is acceptable as the convergent validity of the construct is still adequate (Fornell & Larcker, 1981) as depicted in Table 4 The CR and AVE of emotional bias fulfil the condition of CR> AVE as 0.759 is greater than 0.296. Thus from the results, emotional bias can be presented as a second order construct which includes different Zero order constructs like regret aversion, overconfidence locus of control, disposition effect and herd bias.

Table 4: (CR and AVE of Emotional bias as a second order construct).

Zero Order Construct	Estimate	S.E.	C.R.	Factor Loading	P
Reg	1			0.287	
Herd	1.336	0.314	4.258	0.429	***
Over	1.639	0.367	4.46	0.514	***
Dis	1.857	0.403	4.604	0.707	***
Locus	1.416	0.311	4.559	0.667	***

In addition, to do a comparative analysis among the two proposed study models (Model 1 and Model 3), Akaike Information Criterion (AIC) (Akaike, 1974), test is performed. As per the previous literature and interpretation of this test, the proposed study model whose AIC statistics score is minimum will be preferred. The AIC value of Model 1 is coming out to be 884.864while the statistical score of Model 2 is 811.042as shown in Table No.5. Thus, AIC test analysis shows that the emotional bias (Model) as a second-order factor is chosen over all other direct effects.

Table No. 5 Model Fit Indices.

Model	CMIN	GFI	TLI	CFI	RMSEA	AIC
Measurement Model 1	2.093	.918	.948	.954	.044	884.864
Measurement Model 2	2.173	.914	0.944	0.949	0.045	811.042

PATH ANALYSIS

From the above models model 1 and 2, regression analysis is performed by imputing the data. Regression is performed with different emotional biases as the independent variable and investment decision making as the dependent. Results of regression analysis are presented in table 6.

Amongst all emotional biases,locus of control explained the highest variation in the investor's decision making with as r-square is thirty two percent with F value equal to 268.771 and t-statistics equal to 16.394. Another emotional bias followed is disposition effect bias explaining twenty six percent variation with f and t statistics equal to 205.936 and 14.350 respectively. The least variation explained id nearly two percent by the regret aversion bias but with significant f and t value equal to 16.418 and 4.052 respectively. The other two biases explaining seven percent and eleven percent variation in the decision-making process is herd bias and overconfidence bias of the investors.

Similarly, multiple regression analysis shows all emotional bias taken together as individual independent variable explains thirty eight percent variation in the investor's decision making (38.3) with f-statistics 70.155 at 0.000 p- value which is less than the variation explained by emotional bias as a second order condition as mentioned in table No. 4.7.1 Although the regression results are acceptable and significant but not all emotional bias turns out to be significant as t-value of bias are dis(5.660), overconfidence(2.357) locus of Control (8.799) are significant as t- value are greater than 2 but for other two bias, t-statistics stood at herd bias (1.704) and regret aversion (0.253), thus insignificant.

Table 6: Path Analysis Statistics.

IDV	R	R square	F value	T value	Standardised Beta	sig value	Durbin Watson	Hypothesis
Overconfidence	.335	.112	71.595	8.461	0.335	***	1.923	H2a
Regret Aversion	0.168	0.028	16.418	4.052	0.168	***	1.865	H2b
Locus								
of Control	0.567	0.321	268.771	16.394	0.567	***	1.901	H2c
Herd Bias	0.273	0.075	45.896	6.775	0.273	***	1.867	H2d
Disposition Effect	.516	0.266	205.936	14.350	0.516	***	1.976	H2e
Emotional Bias	0.771	0.595	834.675	28.891	0.771	***	1.848	H2

DISCUSSION AND IMPLICATIONS

Out of all emotional biases, locus of control bias is found to have the most significant impact on the decision making followed by disposition effect bias and overconfidence bias. The minimum influence is of regret aversion bias preceded by herding bias. If all the emotional bias are taken together than a collective influence

is created on the investment decision making when studied in the context of individual investors of Delhi-NCR region. The findings of the study are compatible with the previous studies indicating a significant association between emotional biases and investment decision making. The findings of the study are in line with the studies conducted Khan (2020) among Pakistani Investors and Rahman & Gan (2020) among Malaysian investors and Madaan &Singh (2019) wherein a significant influence was found among herding bias and disposition effect and investment decisions. Mushinada &Veluri (2019) also found the significant positive association amongst overconfidence bias and investment decision making. A similar findings are also presented for the disposition effect and overconfidence in the study performed by Prosad, Kapoor,Sengupta and Roychoudhary (2019) and Mushinada & Veluri (2018) among stock market investors. Alquraan, Alqisie and Shorafa (2016) for Saudi investors stated that loss Averse, overconfidence are significant predictors of investment decisions while herd bias turns out to be insignificant factor for investment decision making. A similar finding for overconfidence bias is suggested by Tekçe, Yilmaz and Bildik (2016) for Turkish investors.

Narasimha & Mushinada (2019) performed one research work in five states of India to conclude a significant association of herding bais and overconfidence bias with the decision making. Jain, Walia and Gupta (2019) also performed a study and found herding bias, loss aversion bias and overconfidence bias to be significant factors in decision making among Punjabi investors. A study conducted by Kumari (2018) in the eastern India found overconfidence bias to the most crucial bias influencing investment decision making. Hayat &Anwar (2016) and Jhandir & Elahi (2014) also stated a significant role of disposition effect, overconfidence and herding bias on investment decision . Antony & Joseph (2016) among Kerala investors concluded overconfidence bias and regret aversion have the maximum influence on the investors while the herd behavior had the minimum influence on the investors . Gupta & Ahmed (2016) and Wamae (2013) stated that experienced investors are more influenced by loss aversion and regret aversion bias at the time of decision making as compare to the less experienced investors while Hidayah, E., & Irowati, N. W. (2021) quoted no significant role of regret aversion on the decision making. Bashir, Rasheed, Raftar, Fatima and Maqsood (2013) reported a weak but significant association of overconfidence bias on the decision making whereas Ainia, N. S. N., & Lutfi, L. (2019) and Setiawan, Y. C., Atahau, A. D. R., & Robiyanto, R. (2018) stated higher the overconfidence bias, more chances for larger allotment of funds. Parveen, S., Satti, Z. W., Subhan, Q. A., & Jamil, S. (2020) and Yuwono, W., & Elmadiani, C. (2021) provided a sequence of bias according to their influences on the decision making wherein herding bias,loss aversion and overconfidence bias holds the positions.

The present study focuses on the conceptualisation of emotional bias and recognises five dimensions for the same which can influence the investor's decision making. In the study, standardised scales are used to avoid the issue of reliability and validity concerns. The models developed in the study supported the five different biases that lead to emotional bias to be

fit for the statistics, and also acknowledged that emotional bias significantly predicts the investor's decision making process. Emotional bias has been considered as a significant determinant of investor's decision making. The analysis of this study demonstrated that emotional bias, made up of five factors, influences an investor's decision making process .Rational decision making is a prerequisite to achieve the financial goals. Thus, an understanding of one's emotional bias and its influence on the decision making process would certainly help the investors in making better and informed decisions.

LIMITATIONS, FUTURE RESEARCH, AND CONCLUDING THOUGHTS

The research model provides a significant contribution in the field of behaviour finance. It will help the financial advisors and planners in understanding the different emotional biases of their clients. Thus, would be able to combat the adverse effect of emotional biases on the investment decision making by making suitable strategies. Financial educators can use the findings of the study to make investors aware of their own emotional biases with the help of seminars, workshops, discussion sessions etc. A total of five variables were found to be crucial in defining emotional bias of an individual investor and the results were analysed using Structural equation modelling, providing affirmation that emotional bias affects investor's decision making. However, the present research work suffers from limitations also. Firstly, to study and examine the numerous scopes of emotional bias, response size considered for the study is only 570 investors from selected regions of Delhi–NCR. In addition, the methodology used involved the usage of the SEM analysis, which has its own limitations. Moreover, only five emotional biases are studied but there exists many others biases also, which can be studied and explored. The influence of demographic factors like age, gender, occupation etc could also be investigated. Although a standardized questionnaire was used in the study, there are chances of prejudices. All of these limitations have provided a scope for future study.

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