
Impact of biases (anchoring bias, representative bias and framing bias) on the decision making of investors of Quetta.

Akhter Javed

¹ Affiliation 1; marmar.raazi@gmail.com

² Affiliation 2; khanakhi444@gmail.com

* Correspondence: e-mail@e-mail.com; Tel.: (optional; include country code; if there are multiple corresponding authors, add author initials)

Abstract: Behavioral finance is a comparatively new dimension in the field of finance. This is concerned with the behavioral patterns and the investments intents of investors that to what extent the investor is partial to the rational theory of finance. Behavioral finance directs that how the investors should behave while engaging into investment process and how could the biased behavior affect the investment markets (Kim, 2008) and this help them to behave rationally (Bhatla, 2009). In fact, the conventionality between investor's emotion and decision is the base of behavioral finance. This research is carried out on the investors of Quetta, particularly to assess their behavioral tendency to that is affected or not while making an investment decision. The investors are mainly from the field of real estate, goldsmiths and technological logistics. This is a quantitative research and data collection has been done by the tool of questionnaires. The data analysis shows that the investors are highly influenced by behavior biases (anchoring, representative and framing bias). They resultantly make investment errors due to insufficient market information, misperception of events and the perplexity of judgment of event that is likely to take place in investment market. These unplanned and unanticipated investment decisions, which are sometimes considered well judged by investors, lead to least or no profitability margin in investment market. Consequently, the ultimate objective of investment is corroded by the psychological intentions of investor.

Citation: Lastname, F.; Lastname, F.; Lastname, F. Title. BIT College 2021, 13, x. <https://doi.org/xxxx/xxxx>

Academic Editor: Firstname Lastname

Received: date

Accepted: date

Published: date

Keywords: 1; Behavioral finance 2; Investor's decision making 3; Investment market

Publisher's Note: BIT stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The field of behavioral finance is naïve as compared to the other financial disciplines in management sciences. The convergence of psychology and financial sciences was first propounded in the professor seldon's work "psychology of stock market and festinger's "study of cognitive dissonance. Further, pratt's study of investor's risk aversion and utility function was formatted in order to obstruct the risk depression factor from behavioral bias. All these disciplinary studies led to the formation of the study of behavioral sciences.

Behavioral finance is the study of factors that are effectual in turning the rational tendency, as suggested in traditional finance theory, of decision making of investors. As propounded in prospect theory “the behavior intends are more likely to implicate the decisions of investor for the relative choice of investment (Kahneman and Amos, 1979).” After the crisis of 2008, this theory was generally observed in many different ways. This field of study provided the way forward while confronting with the blended problems. The researchers are to adopt the way forwards in biased influence, which are more predictable to create errors (Maule and Hodgkinson, 2002). The surveys were to assess the credibility of rational investment departments among investors (Mark KY & WH Imp, 2017).

- **Behavioral biases and their effects on decision making of investors**

This research was carried out for the assessment of investment decisions that are under influence of behavioral biases (anchoring, representative and framing bias). The anchoring bias occurs when investor make decisions on the basis of already available data and that decision is likely to have adverse effect on investment process. This error occurs in the relative choice of things (Chapman G. B. & Bornstein, 1996). The market information is always temporal in nature and there are always the chances for it to transmogrify according to the trends. As investor always remain interest and profit centered, this urge him to carry the information that is beneficial and supportive to his stance. In such influence, investor overlook the halts of investment market and may sometime subvert the importance of present-day information. Other than this, investor use another way to formulate an investment strategy in which he chose to have one value point which could be adduced as base point and then adjust it to get the final value. In this instance the initial value may have been assumed on the bases of inadequate market information which resultantly creates ambiguity in final value at larger (Van Boven, & Gilovich, 2004). Resultantly, it effects the investor’s decision-making bias and render impact on investment (Tversky and Kahneman, 1974).

The representative bias is defined as the virtue of similitude between two events occurred in certain time (Gilovich et al, 1983). Such bias occurs when the tendency of two analogical event is confused to render the same result in the investment market. Investors are likely to consider the prolific outcome of an investment to extend in the future (Subash, 2012). This makes them to adopt the same strategy in investment resultantly making a dysfunction in investment decision making process (Pompain, 2012). This, another words, is comprehended as the overreaction upon the investment decision making process as suggested by Antunovich and Laster, (1998). This overreaction may lead its influence in two possible situations: firstly, when investor relies upon the past eventual information which had been used in another time span. Secondly investor is likely to detract by glancing upon the similitude of events and rather to fathom out the trending market statistics. Such cessations may result in negative outcomes on investment.

The framing bias is referred as an illusionary trend, which is much implicate the investment in market (Druckman J, 2001). Framing bias is the discernment of any event that has to occur in the investment market, but the tendency of comprehension is influenced by investors own intents and interests. A frame

refers to the mental structure that people create to organize and simplify the world (Russo and Schoemaker, 1989). The investor, when given the glaring outlook of profitability margin and risk aversion, is more prone to framing bias (Bateman and Zeithaml, 1989). Investor is intended to get more profit and better outcome of investment on high-risk option. This supports the idea that while getting more profitability margin, investor can look up to the option that have a high risk simultaneously (Kühberger & Wiener, 2012). In such type of events, investor overlook the factual data and went on for the high-risk choices as those are framed in better understanding. Another example of this bias is “Two-side-framing”, in which negative information is delivered in a positive way resulting in framing bias. The Two-side-framing provides investor with a sense that he has sufficient knowledge to partake in investment and there will be less risk as the decision will be taken upon the least present information. Such framing problem can create a complex state of maladjustments in investment decision making process.

- **Purpose of study**

The objectives of the study were to find out

1. Anchoring bias has negative impact on financial decision of investors.
2. There is negative association between representative bias and financial decision of investors.
3. Framing bias has negative impact on financial decision of investors.

The research that has been conducted was to investigate the propensity of investors of Quetta. This was basically centered to conclude that how much the investors of Quetta are prone to the behavioral biases or are rational in their investment decision making process. The research was also carried out in order to calculate the margin of influence that is consequential with these behavioral biases. This study was primarily done by taking into account, the gold smiths, real-estate and technological logistic investors. The basic problem that the investor as mentioned, considered rational in all investment ventures. Thereby it was to ascertain that there is a considerable chunk of investors who are not rational and are in a cumbersome influence of biases. Consequently they make errors like delusion, omission and fallacy (Shefrin, 2010).

2. Materials and Methods

A contextual framework for research is a coherent and logical scheme based on views, beliefs, and values that guide the choices made by researchers. It entails a theoretical examination of a branch of knowledge, body of methods and principles, with methodologies from different disciplines depending on their historical development. This results in a methodology continuum (Cooper, Barry, 2012). As described in definition, research methodology is the course of action that is employed in order to obtain the ultimate result of research. The “research philosophy” of this work was to highlight the relationship between dependent variable (investor’s decision making and independent variables (anchoring bias, representative bias and framing bias). This study has employed descriptive type of research design.

The sampling size of this study was 150 respondents. The convenient sampling approach was adopted in order to reach the suggested sampling size. The tool of acquiring data was questionnaires. The questionnaire consists of two segmentations A and B. In first section, the respondents were to address their demographics. In section B, the respondents were to fill their experience regarding research. Each question was given a range of five likert scale consisting of: Strongly disagree, disagree, neutral, agree and strongly agree. The questionnaires were ran through cronbach alpha to assess the reliability of questions asked. It was made sure that all questionnaires were given to the relevant respondents from the fields, which can be prolific for this study. To avoid linguistic inconvenience, the questionnaires were also formulated in Urdu language. It was given directly to respondents using a wait and respond strategy.

The data was analyzed through the process multiple linear regression. It was done by entering data in the form of standardized entries. It was then coded into numerical formation and was then transmitted into SPSS 2.1 for further analysis. Respondents were categorized as per their registered responses.

3. Results

3.1 Descriptive analysis

In descriptive analysis of representative bias, the data shows that the mean of 176 items is 4.0625, standard deviation is .52881, skewness is .711 (std.error .183) and kurtosis is -.281 (std.error .364). In descriptive analysis of anchoring bias, the data shows that the mean of 176 items is 3.7740, standard deviation is .74302, skewness is -1.255 (std.error .172) and kurtosis is 2.712 (std.error .342). In descriptive analysis of framing bias, the data shows that the mean of 176 items is 3.7057, standard deviation is .63997, skewness is .127 (std.error .183) and kurtosis is -.422 (std.error .364). In descriptive analysis of investor's decision making, the data shows that the mean of 176 items is 3.7773, standard deviation is .57206, skewness is -.615 (std.error .183) and kurtosis is 2.712 (std.error .342). All data has been presented in tabling format shown in table 3.1

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Representative bias	176	4.0625	.52881	.711	.183	-.281	.364
Framing bias	176	3.7057	.63997	.127	.183	-.422	.364
Investment decision	176	3.7773	.57206	-.615	.183	1.058	.364
Anchoring bias	176	3.7740	.74302	-1.255	.172	2.712	.342
Valid N (list wise)	176						

Table 3.1

3.2 Cronbach alpha

The cronbach alpha of anchoring bias items shows a value of 0.824, which is above 0.70. It means that the questions of anchoring bias are highly reliable. The cronbach alpha of representative bias shows a value of 0.777, which is above 0.70. It means that the questions

Variables	Number of items	Cronbach alpha	Type
Anchoring bias	5	.824	Highly reliable
Representative bias	5	.777	Moderate reliable
Framing bias	5	.754	Moderate reliable
Investor's decision	5	.766	Moderate reliable

of representative bias are highly reliable. The cronbach alpha of framing bias shows a value of 0.754, which is above 0.70. It means that the questions of framing bias are

highly reliable. The cronbach alpha of investor's decision making shows the value of 0.766, which is above 0.70. It means that the questions of investor's decision making are highly reliable. The data has been presented in tabling format shown in figure 3.2

3.4 Correlation analysis

The results of the study show that there is weak negative significant relationship between anchoring bias and investors decision making ($r = -0.072$) and $p < 0.01$. The results of the study shows that there is a moderate negative significant relationship between representative bias and investor's decision-making process ($r = -0.374$) and $p < 0.01$. The results of the study shows that there is a moderate negative insignificant relationship between framing bias and investor's decision-making process ($r = -0.481$) and $p > 0.01$. Data has been tabled in figure 3.4

Figure 3.4

Variable name	Investor's decision	Anchoring Bias	Representative Bias	Framing Bias
Investor's decision	1			
Anch Bias	-0.072	1		
Repr bias	- 0.374	-0.014	1	
Framing Bias	-0.481	-0.082	0.598	1

3.5 Multiple linear regression

Multiple linear regression was applied on the data obtained, which shows that 1% change in anchoring bias will have 28% of total effect on investor's decision making. Where standard error is .090 and significance remain 0.00. Same regression was secondly applied on representative bias, which signifies that 1% change in representative bias will have 14% of total effect on investor's decision-making process. Here standard error remains .074 and significance remains 0.00. Same result was then applied on framing bias, which shows that 1% of change in framing bias will affects 35% of investor's decision-making process. Here standard error remains .050 and significance is 0.00. Lastly the collective effect of all biases on investor's decision-making process is 49.4%, signifying a reasonable effect. The data is tabled in figure 3.5

Figure 3.5

Variables	Beta	T statistics	Standard error	Adjusted R2	Significance
Constant	1.973	5.490	.359	0.494	
Anchoring bias	-0.28	-567	.090		0.000
Rep bias	-0.147	1.645	.074		0.000
Framing bias	- 0.354	4.773	.050		0.000

4. Discussion

The research objectives of the study were to assess the effects of anchoring bias, representative bias and framing bias on the investor's decision making of investors from the fields of goldsmiths, real estates and technological logistics from the dominion of Quetta. The controlling or independent variable of the study were the biases(anchoring, representative and framing bias), however the controlled or dependent variable of the study was investor's decision making process by registering the responses of concerned respondents.

To examine the relationship, the researcher proposed that there is a negative effect of biases (anchoring bias, representative bias and framing bias) on the decision making of investors of Quetta, contrary to the foundations of prospect theory which suggest that investor should be rational.

The statistical tool of descriptive statistics was employed which shows the mean controlled variable anchoring bias is 3.7740, representative bias is 4.0625 and framing bias is 3.7057. The mean of controlling variable investor's decision making stood at 3.7773, signifying the varying number in study. Similarly for the purpose of data collection, the researcher employed questionnaires collection, for which it was necessary to obtain the insight of frequency of questions asked in research. The cronbach alpha of anchoring bias questions shows .824 which is highly reliable. Cronbach alpha of representative bias shows a value of .777 which is moderate reliable, and the cronbach alpha of framing bias shows the value of .754 which is moderate reliable. For independent variable, the value of .766 of investor decision making shows a moderate reliability.

The data was primary data, collected from the respondents in person. The researcher then employed correlation to ascertain the relation between controlling and controlled variable. Which signifies that there is a strong negative impact of dependent variable on independent variable.

The regression analysis was employed to conclude the negative impact of biases on the investor's decision making. (Saposnik G, 2016) found that there is negative implications of biases on the financial market. (Howard marks, 2010) found that the biases are more liable to provide investors with limited outcomes of investment, which is all due to their irrational tendency of assuming or seeing things and ultimately have negative impacts on financial decisions. (Thaler and Johnson, 2002) found that there is much higher chances of low outcomes when, in the influence of bias, the investor charts out financial plan,

which will resultantly have negative implications on investment. All these are supporting to the proposed hypotheses of the study.

From the evidences of various studies and analysis, this shows that there is negative impact of financial biases (anchoring bias, representative bias and framing bias) on the decision making of the investors of Quetta.

Limitations and remedies

The field of behavioral finance is a vast amalgamation of human psychological tendencies. This provides the researchers to study innumerable subjects of rational and irrational behaviors in financial markets. This study could be further carried out for the assessment of other behavioral biases and heuristics that are effective in influencing the investor's decision-making process. The study could may further include confirmation bias, hindsight bias, endowment effect self-serving effect and optimism effect in psychological sciences. The sphere of research could further be expanded across Pakistan and then in South Asian region. As the research sphere will expand, this will have a high number of respondents registering their response, which will surely create a firm research foundation.

References

1. Rickman, J. (2011). The Implications of Framing Effects for Citizen Competence. *Political Behavior*, 23 (3), 225-256.
2. Tversky, A., & Kahneman, D. (1981). The Framing of Decisions and the Psychology of Choice. *Behavioral Decision Making*, 25-41.
3. Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211 (4481), 453-458.
4. Arkes, Hal R. (1991). Costs and benefits of judgment errors: Implications for debasing. *Psychological Bulletin*, 110(3), 486–498.
5. Tversky, A & Kahneman, D, (1970) Belief in the law of small numbers. *Psychological Bulletin* 1971, Vol. 76, No. 2, 105-110.
6. Strack, F & Mussweiler, T, (2000) Explaining the enigmatic anchoring affect: Mechanisms of selective accessibility. *Journal of Personality and Social Psychology*, 1997, Vol. 73, No. 3, 437-446.
7. James, N. Druckman, (2009) the implications of framing effects on citizens competence. *Political Behavior*, Vol. 23, No. 3.
8. Chapman, G. B., & Bornstein, B. H. (1996). The more you ask for the more you get: Anchoring in personal injury verdicts. *Applied Cognitive Psychology*, 10, 519–540.
9. Teovanović P. Individual Differences in Anchoring Effect: Evidence for the Role of Insufficient Adjustment. *Eur J Psychol*. 2019, 15 (1):8-24.
10. Mark, KY Mak & WH ip. (2017). an exploratory study of investment behavior of investors. *International Journal of Engineering Business Management* Volume 9: 1–12.
11. Amos Tversky; Daniel Kahneman, (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, New Series. Vol. 185, No. 4157.
12. Denisa Valsová, (2016). Behavioral Finance and Its Practical Implications for Investment Professionals. Research published State University of New York Empire State College 2016.
13. Benartzi, (2013). Behavioral Biases and Firm Behavior: Evidence from Kenyan Retail Shops *AMERICAN ECONOMIC REVIEW* VOL. 103, NO. 3, MAY 2013.
14. Daiva jurevicinai, (2012). Behavioral Finance: The Emergence and Development Trends. *Social and Behavioral Sciences* 82 (2013) 870 – 876.
15. Dimitrios Kourtidis, Zeljko Sevi, Prodromos Chatzoglou. (2011). Investors' trading activity: A behavioural perspective and empirical results. *The Journal of Socio-Economics*, 548–557.
16. Saposnik G, Redelmeier D, Ruff CC, Tobler PN. Cognitive biases associated with medical decisions: a systematic review. *BMC Med Inform Decis Mak*. 2016, 16 (1):138.