



A Study on the Impact of Behavioral Biases on the Investment Pattern of Indian Retail Investors with A Reference to Millennial Generation

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ABSTRACT

The development of a nation's economy is significantly influenced by the capital market, which aids in wealth accumulation and capital raising. Today's generation has a variety of financial instruments, which has given individual investors access to a wide range of investment opportunities. Behavioral finance is one the emerging topic in field of finance, it helps in understanding psychological behaviour of investors. This study focuses on understanding these behaviour and their impact on investment decision. A special reference is given to millennial generation as they are the maximum contributors of total retail investors. The objective of this study is to understand the investment pattern of these millennial retail investors and how they are affected by various behavioral biases. The study is analytical in nature. Research design used in this study is exploratory. The primary data is collected through a structured questionnaire from 100 millennial retail investors of Indian stock market. The collected data is analysed using different statistical tools. The findings of this study reveals millennial retail investors' purpose of investment, factors considered before investing, amount of experience, area of investment, average return and impact of investment biases.

Key terms: Behavioral finance, Millennial generation, Retail investors, Behavioral biases

INTRODUCTION

Stock market is a highly well-organized market which plays a cardinal role in mobilizing and channelizing funds from investors to borrowers with investment safety. Funds which flow from investors are utilized by industries and government for development and expansion which creates job and spurs economic growth. The diversification of financial service sector has resulted in wide range of investment opportunities for individual investors. The investment preference of individuals differ from each other due to different objectives, psychological behavior, limitations and liabilities. Behavioral finance is one of emerging topic in the field of finance. It is a study of psychology and sociology on the behavior of the financial investors. Behavioral biases may be categorized as loss aversion, mental accounting, herd behavior, over confidence, confirmation bias, disposition bias, experiential bias and anchoring. These biases are the irrational behavior of the investors which affect their decision making. The study understands and describes the different categories of behavioral biases and their impact on the investors decision making process in India with a special reference to millennial generation. Millennial is the name given to the generation born from 1981 to 1996. In India, millennials are 34% of the total country's population which makes India youngest major nations in the world. It is said that 66% of the total millennials invest in stocks. Millennials are nearing to their peak earning years which provides them cash to invest, this generation plays a crucial role in India's economic development.

TITLE OF THE STUDY

"A study on the impact of behavioral biases on the investment pattern of Indian retail investors with a special reference to millennial generation".

REVIEW OF LITERATURE

Muskan Sachdeva, RituLehal, Swati Gupta, Sanjay Gupta (2022) highlights the importance of the investors sentiments and their correlation with the real economy, the study reveals that accounting information, self-image and neutral information as top rank factors in influencing decision making process. Mrs Vidya R, Dr Shailaja M L (2021) in their study titled "A study on impact of investors behavioral biases on the returns of the investor's during volatility with reference to Indian capital market" tells investors knowingly or unknowingly may react emotionally during investment decisions with influence of one or more biases and they do not make any decision during volatility. Shilpi Gupta, Dr. Monica Shrivastava (2020) reveal that retail investors of Chhattisgarh suffer from psychological biases and they prefer using shortcuts for making investment decisions. The investment mistakes of an individual is prompted by inherent biases. Rajdeep Kumar Raut, Niladri Das, Rohit Kumar (2018) investigates if the idea of planned behaviour may be used to explain how investors behave while making capital market investments in their research paper titled "Extending the theory of planned behaviour: Impact of past behavioral biases on the investment decision of Indian investors". Dr.SunainaKanojia, Dr.Deepti Singh, Ashutosh Goswami (2018) in their study titled "An empirical analysis of the factors influencing individual investors in Indian stock market" indicate that

investor behaviour is significantly impacted by cognitive dissonance, overconfidence, and representational bias. However, responders' herd behaviour has little effect on them. **E Vijaya (2016)** in her study "An empirical study on behavioral pattern of Indian retail equity investors" has typically focused on the behavioral biases that have the biggest influence on how retail equity investors make decisions and how certain decisions affect investors' performance, such as heuristic, emotional, herding, and market biases.

RESEARCH GAP

In the past recent researches and study are done on the factors affecting (behavioral biases) investor's decision and their impact. Many authors have concluded that retail investors suffer from various psychological biases in their financial decision making.

In this study, the importance is given to retail investors who are aged between 26 - 41 years also called as millennials. This study helps in understanding their investment behavior and how are they are influenced by different factors of behavioral biases in decision making process.

NEED OF THE STUDY

Typical monetary theories believe in an assumption that traders are rational actors, self-involved and by no means make mistakes however in fact, they have irrational behavior and make errors and mistakes. In the stock market, there are different categories of investors. Some are bearish and consider that expenses are going to fall while a few are bullish and consider expenses are going to rise. On these traits, investors may be classified as aggressive and conservative. In the Indian stock market place, investors commonly choose conservative trading, they generally tend to spend money on securities that are low or mild threat which is one of the factor of behavioral biases.

In India, there is a very small percent of retail investors in capital market which needs to be increased. In order to increase retail investment, more awareness must be promoted. Investors to explore in capital market need to understand and learn about controlling these behavioral biases. With the help of proper market awareness and experience, investors can maximize their returns in stock market. Therefore this study focuses on the different behavioral biases that affect decisions of retail investors which can bring an awareness amongst them. Apart from creating awareness to investors, this study can also help other parties such as stock broking firms, regulators and government.

OBJECTIVES OF THE STUDY

- To gain knowledge about the investment pattern of retail investors.
- To determine the factors that affect investment decisions of retail investors.
- To analyse the biases that affect decision making process of retail investors.
- To determine whether behavioural biases and investment choices are related in anyway.

HYPOTHESES OF THE STUDY

- H_{10} : There is no association between proportion of income channelized and average return on investment ($r=0$)
- H_{11} : There is an association between proportion of income channelized and average return on investment ($r\neq 0$)
- H_{20} : There is no significant difference between factors considered before investing and expected growth rate of investment
- H_{21} : There is a significant difference between factors considered before investing and expected growth rate of investment
- H_{30} : There is no significant difference on the average return of investors' who use various biases for investment
- H_{31} : There is a significant difference on the average return of investors' who use various biases for investment

RESEARCH METHODOLOGY

The study conducted is analytical in nature. Research design used in this study is exploratory. Exploratory research provides a deeper context to research questions. It serves as the hypothetical and theoretical idea to the research problem. This type of research are both qualitative and quantitative in nature. It helps in collecting preliminary information which helps in defining problem and suggesting hypothesis.

POPULATION AND SAMPLE

In this study, population includes retail investors of Indian capital market. Retail investor accounts to a number of 102.6 million in the Indian capital market. The study uses convenience sampling method to choose the respondents. The number of respondents for this study is 100 who are millennial retail investors of Indian Capital Market.

SOURCE OF DATA

The primary data for this study is obtained through structured questionnaire based survey. The respondents are the retail investors of Indian capital market who are aged between 26 – 41 years. The secondary data for this study is collected from various websites, journals, research papers.

STATISTICAL TOOLS

For translating and analyzing the information gathered through organized survey, certain presentation tools aids like bar graphs and charts, and statistical tools like correlation, chi-square, ANOVA and weighted average technique is used.

LIMITATIONS OF THE STUDY

- This study is limited to retail investors who belong to millennials generation.
- The data is collected from a small sample so it may not be true representation of the entire population.

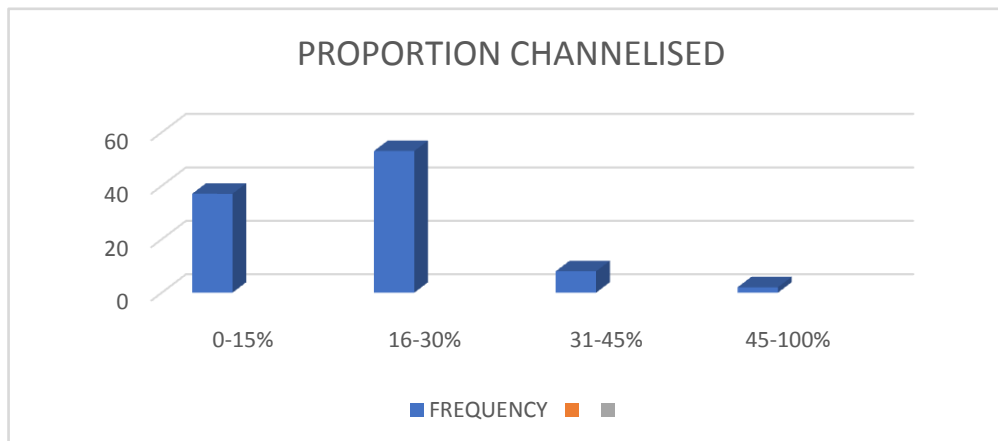
ANALYSIS

(i) TABLE SHOWING PROPORTION OF INCOME CHANNELIZED TOWARDS CAPITAL MARKET BY THE RESPONDENTS

PROPORTION CHANNELISED	FREQUENCY	PERCENTAGE
0-15%	37	37
16-30%	53	53
31-45%	8	8
45-100%	2	2

The above table indicates the respondents' proportion of income channelised towards Indian capital market. Here, 37 respondents have channelised 0-15% of their income towards stock market, 53 respondents have channelised 16-30% of their income whereas 8 respondents have channelised 31-45% of their income and only 2 respondents have channelised 45-100% of their income towards capital market.

GRAPH SHOWING PROPORTION OF INCOME CHANNELIZED TOWARDS CAPITAL MARKET BY THE RESPONDENTS



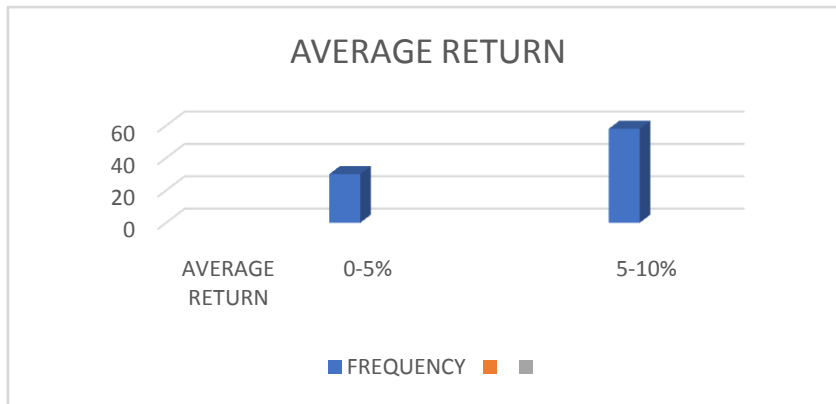
Different investors invest different proportion of their income towards capital market. Most of the financial advisors suggest to invest ten to fifteen percent of their income in mutual funds and also investing their income is tax advantageous. In this survey it can be discern that majority of the investors invest 16-30% of their income in stock market.

(ii) TABLE SHOWING AVERAGE RETURN ON INVESTMENT MADE BY RESPONDENTS

AVERAGE RETURN	FREQUENCY	PERCENTAGE
0-5%	30	30
5-10%	58	58
10-15%	12	12
15-20%	0	0
20-100%	0	0

The above table represents average return on the investment made by respondents. Here 30 respondents' average return on investment is 0-5%, 58 respondents average return on investment is 5-10%, 12 respondents' average return on investment is 10-15%.

GRAPH SHOWING AVERAGE RETURN ON INVESTMENT MADE BY RESPONDENTS



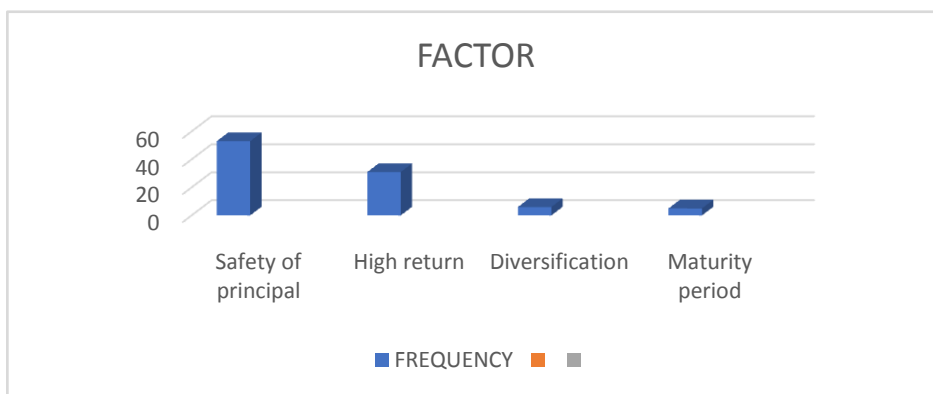
The above bar diagram is graphical representation of average return on the investment made by respondents. Here majority of the investors earn less than five percent. According to financial investors anything above seven percent is considered good here majority of investors earn a average return around 5-10%.

(iii) TABLE SHOWING FACTORS CONSIDERED BY RESPONDENTS' BEFORE INVESTING

FACTOR	FREQUENCY	PERCENTAGE
Safety of principal	53	53
High return	31	31
Diversification	6	6
Maturity period	5	5

The above table indicates factors investors consider before investing. Here 53 respondents consider safety of principal as main factor whereas 31 respondents consider high return, 6 respondents consider diversification and remaining 5 respondents consider maturity period.

GRAPH SHOWING FACTORS CONSIDERED BY RESPONDENTS' BEFORE INVESTING



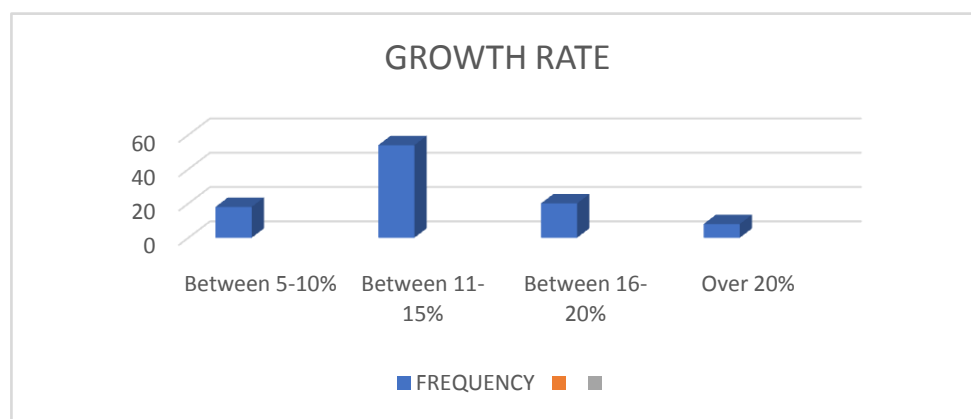
The above bar graph is a representation of factors investors consider before investing. There are different factors influence investors in investment portfolio management. Here majority investors consider safety of principal as the factor they consider before investing or channelising their funds.

(iv) TABLE SHOWING EXPECTED GROWTH RATE OF RESPONDENTS' INVESTMENT

GROWTH RATE	FREQUENCY	PERCENTAGE
Between 5-10%	18	18
Between 11-15%	54	54
Between 16-20%	20	20
Over 20%	8	8

The above table interprets about rate of growth investors expects on investments made by them. Here 18 respondents expects 5-10% growth rate, 54 respondents expects 11-15% growth rate, 20 respondents expects 16-20% growth rate whereas remaining 8 respondents expects more than 20% growth rate.

GRAPH SHOWING EXPECTED GROWTH RATE OF RESPONDENTS' INVESTMENT



The above graph is a representation of expected growth rate of investments channelised by investors. According to financial investors anything above 7% is considered as a realistic and good return. Here majority investors expect their investment to grow between 11-15%.

(v) Correlation test

to find an association between proportion of income channelised and average return on channelised investment.

HYPOTHESIS 1:

H0 : There is no association between proportion of income channelised and average return on channelised investment. ($r=0$)

H1 : There is an association between proportion of income channelised and average return on channelised investment. ($r \neq 0$)

		IN GENERAL TERMS, WHAT PROPORTION OF YOUR INCOME HAVE YOU CHANNELISED TOWARDS CAPITAL MARKET	WHAT IS THE AVERAGE RETURN ON YOUR CHANNELISED INVESTMENT
IN GENERAL TERMS, WHAT PROPORTION OF YOUR INCOME HAVE YOU CHANNELISED TOWARDS CAPITAL MARKET	Pearson Correlation	1	.011
	Sig. (2-tailed)		.910
	N	100	100
WHAT IS THE AVERAGE RETURN ON YOUR CHANNELISED INVESTMENT	Pearson Correlation	.011	1
	Sig. (2-tailed)	.910	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

INTERPRETATION

Pearson correlation co-efficient between proportion of income channelised and average return on channelised investment is +0.011 which shows there is a positive relationship between these two. Hence there is a significant relationship between proportion of income channelised and average return on channelised investment because its correlation coefficient is different from zero.

(vi) Chi-Square test

to find significant difference between factors considered before investing and expected growth rate of investment

HYPOTHESIS 2:

H₂₀: There is no significant difference between factors considered before investing and expected growth rate of investment

H₂₁: There is a significant difference between factors considered before investing and expected growth rate of investment

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.215 ^a	12	.287
Likelihood Ratio	17.107	12	.146
Linear-by-Linear Association	.925	1	.336
N of Valid Cases	100		

a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .48.

INTERPRETATION

The Pearson's coefficient between factors considered before investing and expected growth rate of investment is +0.287. From the preceding table it can be seen that the level of significance is 0.05 and level of freedom table value is 12 which indicates that the probability is 21.026. Hence, null hypothesis is accepted and alternative hypothesis is rejected

(vii) ANOVA test

to find significant difference on the average return of investors' who use various biases for investment.

HYPOTHESIS 3:

H₃₀: There is no significant difference on the average return of investors' who use various biases for investment.

H₃₁: There is a significant difference on the average return of investors' who use various biases for investment.

		Sum of Squares	df	Mean Square	F	Sig.
I INVEST IN STOCK ON RECOMMENDATION OF FRIENDS OR RELATIVES	Between Groups	.291	2	.145	.299	.742
	Within Groups	47.149	97	.486		
	Total	47.440	99			
OTHER INVESTORS DECISION OF BUYING/SELLING, CHOOSING STOCK TYPE, STOCK VOLUME WILL HAVE IMPACT ON MY INVESTMENT DECISIONS	Between Groups	.214	2	.107	.101	.904
	Within Groups	103.026	97	1.062		
	Total	103.240	99			
I AVOID SELLING SHARES THAT HAVE	Between Groups	.659	2	.329	.378	.687
	Within Groups	84.651	97	.873		

DECREASED IN VALUE AND READILY SELL SHARES THAT HAVE INCREASED IN VALUE	Total	85.310	99			
AFTER A PRIOR LOSS, YOU BECOME MORE RISK AVERSE	Between Groups	.624	2	.312	.328	.721
	Within Groups	92.336	97	.952		
	Total	92.960	99			
I FEEL VERY CONFIDENT WITH MY INVESTMENT OPTIONS, EVEN WITHOUT BEING SUPPORTED BY RIGHT INFORMATION	Between Groups	1.475	2	.738	.705	.497
	Within Groups	101.565	97	1.047		
	Total	103.040	99			
I BELIEVE THAT WHEN I MAKE PROFIT IN INVESTING, THE ACHIEVEMENT IS DUE TO MY OWN ABILITY	Between Groups	.949	2	.474	.426	.654
	Within Groups	108.011	97	1.114		
	Total	108.960	99			
I SET ASIDE MONEY SLOWLY AS PLANNED TO MAKE AN INVESTMENT	Between Groups	3.361	2	1.680	1.979	.144
	Within Groups	82.349	97	.849		
	Total	85.710	99			
I RECORD MY PERSONAL EXPENSES	Between Groups	2.663	2	1.331	1.380	.257
	Within Groups	92.630	96	.965		
	Total	95.293	98			
I PREFER TO BUY LOCAL STOCKS THAN INTERNATIONAL STOCKS BECAUSE THE INFORMATION OF LOCAL STOCKS ARE MORE AVAILABLE	Between Groups	1.688	2	.844	1.059	.351
	Within Groups	77.312	97	.797		
	Total	79.000	99			
I BECOME HESITANT WHEN I GET NEW INFORMATION ABOUT THE INVESTMENT I WOULD TAKE	Between Groups	2.125	2	1.062	1.134	.326
	Within Groups	90.875	97	.937		
	Total	93.000	99			
I INVEST IN THE STOCK ONLY AFTER COLLECTING AND VERIFYING ALL INFORMATION	Between Groups	.688	2	.344	.761	.470
	Within Groups	43.822	97	.452		
	Total	44.510	99			
I INVEST IN STOCK ONLY AFTER MAKING SURE IT MAKES GOOD MONEY	Between Groups	1.003	2	.502	.781	.461
	Within Groups	61.623	96	.642		
	Total	62.626	98			
I PREFER TO INVEST IN THE WELL KNOWN COMPANIES THAT HAVE WIDER MEDIA COVERAGE	Between Groups	1.439	2	.720	1.519	.224
	Within Groups	45.951	97	.474		
	Total	47.390	99			
I PREFER TO INVEST IN THE COMPANIES	Between Groups	2.443	2	1.222	1.475	.234
	Within Groups	80.317	97	.828		

WHICH I KNOW THEIR HISTORY AND MANAGEMENT	Total	82.760	99			
I PREFER TO QUICKLY SELL STOCK WHOSE PRICE ARE RECENTLY INCREASED	Between Groups	3.015	2	1.508	1.690	.190
	Within Groups	86.545	97	.892		
	Total	89.560	99			
I PREFER NOT TO QUICKLY DISPOSE THE STOCK WHOSE PRICE STARTED TO DECREASE	Between Groups	2.841	2	1.420	1.362	.261
	Within Groups	101.159	97	1.043		
	Total	104.000	99			
I THINK WE CAN FORECAST THE FUTURE VALUE OF THE STOCKS ON THE BASIS OF ITS PAST PERFORMANCE	Between Groups	.545	2	.273	.214	.808
	Within Groups	123.565	97	1.274		
	Total	124.110	99			
I PREFER TO DEPEND ON THE PAST PERFORMANCE OF THE STOCK WHEN I TAKE MY INVESTMENT DECISION OVER ANY OTHER INIDICES	Between Groups	1.163	2	.581	.425	.655
	Within Groups	132.597	97	1.367		
	Total	133.760	99			

INTERPRETATION

From the preceding table it can be seen that the level of significance is 0.05 and all biases' level of significance is above 0.05, degree of freedom table value is 2 which indicates that the probability is 4.83 and all significant values are less than probability. Hence null hypothesis is accepted and it can be concluded that there is no significant difference on the average return of investors' who have various biases for investment.

(vii) WEIGHTED AVERAGE MEAN

BIASES	STRONGLY AGREE (5)	AGREE (4)	NEUTRAL (3)	DISAGREE (2)	STRONGLY DISAGREE (1)	WEIGHTED AVERAGE MEAN	FACTOR RANKING
HERDING	29+45	61+45	8+17	1+13	1+2	0.1281	1
LOSS AVERSION	14+15	46+33	33+40	5+10	0+1	0.0995	9
OVER CONFIDENCE	20+17	44+38	16+24	20+18	0+3	0.1013	8
MENTAL ACCOUNTING	20+24	43+32	29+32	7+10	0+1	0.1050	6
ANCHORING	36+21	44+41	16+27	3+9	0+2	0.1110	4
CONFIRMATION	52+48	40+42	7+7	1+1	0+0	0.1244	2
FAMILIARITY	43+43	46+38	10+15	1+3	0+0	0.1208	3
DISPOSITION	17+21	39+31	37+40	4+4	2+3	0.1026	7
REPRESENTATIVE	26+23	49+44	15+19	5+9	2+2	0.1069	5

INTERPRETATION

From the weighted average test it can be inferred that, the most influencing investment bias is herding with the highest weighted average mean of 0.1281. Majority of the investors in India invest in stocks on recommendation of friends and relatives and also their investment behaviour is influenced by other investors' decision, this behaviour is called as herding. Whereas least influencing investment bias is loss aversion with the lowest weighted average mean of 0.0995.

FINDINGS

- Majority investors consider safety of principal as one of the important factor they consider before investing or channelising their funds
- The correlation factor between proportion of income channelised and average return on channelised investment is +0.11, hence there is a positive relationship between proportion of income channelised and average return on channelised investment.
- From chi-square test, it was found there is no significant difference between factors considered before investing and expected growth rate.
- Through ANOVA, it was found there is no significant difference on the average return on investors' who apply various biases for investment.
- Through weighted average mean, it was found herding is one of the most influencing investment bias.
- The average return on investments of most of the investors are less than 10%.

SUGGESTIONS

- The investors should act rationally rather than depending on pre-notions and biases
- There is lack of awareness within investors about biases and their impact. Investors must be educated about how various behavioral biases that influence their investment decisions.
- Investor invest with an economic objective in their mind, they must decide on a certain criteria before making their decisions rather than concentrating only on returns. Regulators can help investors in educating about biases by conducting various awareness programmes.
- A retail investor must try to overcome these biases by managing emotions, focusing on more detailed analysis rather on crowded trades.

CONCLUSION

The development of a nation's economy is significantly influenced by the capital market which aids in wealth accumulation and capital raising. In today's generation there are various financial innovations that has made investors much easier to access different segments. The number of investors investing Indian capital market are increasing. The pandemic has both positive and negative impact on stock market. Many Indian investors are conservative in nature and are influenced by various investment biases. Behavioral finance has bloomed into an highly regarded field in finance. It understands and draws knowledge on different behaviours of investors regarding their decision making process. In different investment biases, herding is considered as one of the most influencing bias and loss aversion is the least influencing bias. Different biases influence investor in different ways, it can have both positive and negative impact on investors.

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