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A Study of Behavioural Factors Affecting Individual Investment Decisions

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ABSTRACT

Although finance has been studied for thousands of years, behavioral finance which considers the human behaviour in finance is a pretty new area. Behavioral finance theories, which might be based totally at the psychology, try to apprehend how feelings and cognitive mistakes impact man or woman traders' behaviour (buyers referred to on this look at are referred to person traders).The primary goal of this have a look at is exploring the behavioral factors influencing person buyers' selections on the NSE & BSE Stock Exchange. Furthermore, the members of the family among these elements and funding overall performance also are tested. The have a look at begins with the present theories in behavioral finance, based totally on which, hypotheses are proposed. Then, those hypotheses are examined via the questionnaires dispensed to individual buyers on the Broking Firms, college students and professionals. The data collected from the Stock Broking firms, Students, Professionals through structured questionnaire were examined and data collected were analyzed using Cronbach's Alpha Reliability Test, based totally on which, hypotheses are proposed. The result indicates that there are 5 behavioral elements affecting the funding selections of person investors at the NSE & BSE Stock Exchange: Herding, Market, Prospect, Overconfidence-gamble's fallacy, and Anchoring-ability bias. Most of these elements have mild impacts whereas Market element has high affect. This test also tries to discover the correlation among these behavioral factors and investment overall performance. Among the behavioral factors referred to above, best 3 elements are located to influence the Investment Performance: Herding (inclusive of shopping for and promoting; choice of trading shares; extent of buying and selling stocks; velocity of herding), Prospect (such as loss aversion, remorse aversion, and mental accounting), and Heuristic (inclusive of overconfidence and gamble's fallacy). The heuristic behaviors are determined to have the highest advantageous impact at the investment overall performance while the herding behaviors are stated to persuade undoubtedly the investment overall performance on the lower degree. In assessment, the possibility behaviors provide the negative impact on the funding overall performance.

KEYWORDS: *Stock Market, Stock Exchange, Behavioral factors affecting investors' decision, Investment Performance, Market Awareness*

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1. INTRODUCTION

Finance idea has been in a method of speedy development for the duration of this ultimate century. Particularly, the Modern Portfolio Theory that became developed mid Fifties and the following monetary fashions that emerged to play a huge function in this rapid improvement. These theories aim to deliver an objective angle to finance inside the traditional sense and explicit the investment options of the person in mathematical phrases. The models and strategies included through the conventional finance literature and sited above assist the individuals in their choices and each character is expected to make rational possibilities as a preferred. This important of rationality this is one the assumptions required in an effort to standardize investment choices draws attention because the most crucial assumption of present-day finance.

Investment in the stock market (equity investment) is the buying and holding of shares of stocks on a stock market by individuals and funds in anticipation of income from dividends and financial gain because the price of the stock rises. The buying of equity can be done by direct holding where an investor places a buy order through his broker or this can be done via pooled investment vehicles: many of that have quoted costs that area unit listed in monetary newspapers. The mutual funds area unit usually managed by outstanding fund management companies.

The objective of this thesis is to visualize if the common individual capitalist taking part within the Indian stock exchange is rational in the slightest degree times. The work focuses on eight identified behavioral biases, namely: Overconfidence, Representativeness, Herding, Anchoring, Gamblers' Fallacy, Mental Accounting and Hindsight Bias. Effects of these nine factors on the decision-making process of portfolio investors in Pune, India has been analyzed in this study. Individual investors were picked for the study since they were additional doubtless to possess restricted data concerning application of behavioural theories in creating {deciding higher cognitive process} and thus at risk of making psychological mistakes. The influence has primarily been analyzed in terms of whether or not behavioural factors have an effect on the investors' call to shop for sell or hold stocks.

This assumption of conventional finance has been beneath complaint with the aid of human beings because the first day and the difficulty of whether or not or no longer people make rational choices has been a count of investigation. As we recognize, people are social creatures that have precise values and that have a tendency to make selections according with their feelings and behavior. One has to no longer anticipate humans to make selections entirely based totally on objective factors. It is at this factor that Behavioral Finance brings a unique attitude to analyze the ones regions that conventional finance failed to explain or had problem in explaining. Behavioral Finance argues that behaviors and mood states of people are determinant elements in shaping their investment options and has demonstrated wonderful development within the remaining two decades and has been the principle subject matter of numerous interdisciplinary studies. Thus, it's far predicted that this unique place of finance would be researched in more element and that studies might awareness in this discipline.

2. Objectives

2.1. Objectives:

A. Understanding the basics of stock market.
B. To determine the impact levels of behavioural influences on the individual investor choices of securities.
C. Understanding the various Behavioral Biases and Market awareness.
   1. Overconfidence and Gambler's Fallacy
   2. Herding Bias
   3. Market
   4. Anchoring and Ability Bias
   5. Investment Performance

2.2. Significances of study:

- **To the individual investors**: The research is a good reference of stock-investment behavior for the investors to consider and analyze the stock market trend before making suitable decisions of investment.
- **To the security organizations**: The research provides them with a good background for their prediction of future stock-market trend and giving more reliable consultant information to the investors.
- **To the sector of behavioural finance**: The ideas of behavioural finance area unit comparatively new as compared to different money theories. In developed security markets, behavioral finance is applied widely to explore the behaviors that impact the investment decisions; however, as mentioned above, behavioral finance has the limited number of applications for less developed security markets. This study is completed with hope to verify the quality of exploitation behavioural finance for all types of stock markets.
- **To the authors**: The research provides a good chance for the authors to understand more theoretically and practically about the stock market as well as the theories of behavioral finance.

2.3. Scope of study:

- The geographical scope of research can be widened in order to consider investors from all over the country, as this research considers only Pune-based investors.
- To determine the relationship of with Equity Markets in India & Understanding the different dimensions of the psychology of investors.
- As about 71% of the investors under study haven't undergone any formal training course on training, further research can be carried out in order to observe the changes in the behaviour of investors before and after undergoing the training.
- A similar kind of research can be carried out with investors having a particular span of experience in the market as this research study considers investors with span of experience ranging from less than 3 years to more than 10 years.
- The corresponding research study considers all ranges of annual income, whereas to take the study towards more precision same study can be done to observe the behavioural factors of a particular income group.

3. Literature Review

The extensive research has been conducted in the area of behavioural finance within the India and outside India as below.

1. Kahneman D and Tversky A (1979) Proposed an expected utility theory as a descriptive model of decision making under risk and paves for development of an alternative model called prospect theory. However, this study proves that expected utility theory is not an adequate descriptive model and they propose an alternative account of choice under risk. Decision making risk viewed as a choice between prospects or gambles in contrast that brings outcome with some probability in comparison that are obtained with certainty this tendency called as the certainty effect. This effect contributes to risk aversion in choices involving sure gains and to risk seeking in choices involving sure losses. In this study authors developed an alternative theory choice in which value is assigned to gains and losses rather than to final assets and probabilities are replaced by decision weights. Value function is normally concave for gains and convex for losses and steeper in general for losses than gains. This analysis of risky options has developed two themes/ first, concerns editing operation that determine hoe prospect are perceived and second theme involves the judgmental principles that govern the evaluation of gains and losses and weighting of uncertain outcomes.

2. Chandra, A., (2008) attempted to explore the impact of behavioural factors and investors' psychology on their investment decision making and to examine the relationship between investors attitude towards risk and behavioural decision making process. Author used literature survey to study the behavioural decision making and investors' psychology. In this descriptive study author used secondary data related to investments, finance and economics. The results show that unlike the classical finance theory, individual investors often do not make rational decisions. Further results reveal that the investor decision making influenced by behavioural factors such as greed and fear, cognitive dissonance, heuristics, mental accounting and anchoring.

3. **Kabra, Mishra and Dash (2010)** Aimed at gaining information regarding key factors that influence investment behaviour and the way these factors impact investors' risk-tolerance and method} process among individual at totally different age teams. This study followed survey research methodology. Primary data was collected through questionnaire administration. The data were analyzed using standard techniques like factor analysis, regression analysis and other basic statistical tools. The sample used for the study was regular investors. The perceptions of the investors were analyzed through SPSS and concluded that, though investors are in new information age, are mature enough and groomed adequately, they prefer investments according to their risk preferences and they were found to be in trap of cognitive illusions, such as overconfidence and narrow framing. They consider multiple factors and seek diversified information before taking decisions. Finally, it's been verified that investors' age and gender preponderantly decide the risk-taking capability of investors.

4. **A. Kartasova J (2013)** aimed at identifying the factors that frame irrational individual investors' behaviour in the Lithuanian stock market. To analyze those factors, author employed the methods of literature survey, comparison of theoretical insights, networking, benchmarking analogy and generalization. He conducted this study in two stages. During the first stage investigation on individual investors irrationality initiated and results show that individual investors in Lithuanian suffered from the majority of the biases such as anchoring, mental accounting, confirmation and hind sight bias, herd behaviour, overconfidence, overreaction and availability bias. In second stage of study with updated questionnaire survey conducted in a broader way to cover more than 5000 individual investors. However, the complete response was received from only 404 respondents. Analysis was done using basic statistical tools. Based on the analysis author concluded that the individual investors in Lithuania suffered from all basic biases but overconfidence, anchoring, mental accounting and herd behaviour had greater influence on their financial decision-making process. He also asserted that the influence of factors forming irrational individual investors' behaviour depends on their personal characteristics such as age, experience, gender and profession.

5. **Choudhury A K (2013)** examines the meaning and importance of behavioural finance and its applications in investment decisions. This conceptual paper provides an explanation why investor makes irrational financial decisions. It demonstrated how emotions and cognitive errors influence investors in the decision-making process. The author found that various causes that influence investors' investment decisions are Anchoring, Overconfidence, Herd Behaviour, over and Under-reactions and Loss Aversion. In essence, behavioural finance approach investigates the behavioural patterns of investors and tries to understand how these patterns guide investment decisions. It provides a framework for evaluating active investment strategies for the investors.

6. **Dr. Chetankumar J Lad & Mr. Hiral R Tailor** examines the stock exchanges in India have witness many changes in its structure, ups and downs, cross the various bench marks sets making it an efficient organization. But the retail equity investors were not able to take the advantage of this development and volatility of the market. From the various studies conducted in the different parts of the world, it has been observed that the retail equity investors were not able to take the most out from the development and volatility of market, the major reasons identified that affect the investment decisions were behavioural and emotional factors. In the present study on the factors influencing the investment decision, where the model developed by Le Phuoc Luong and Doan Thi Thu Hal (2011), the validity of that model showed a positive impact on investment decision of investors. The results from the validity conclude that the investment decisions of investors are influenced by the behavioural biases.

To the authors: The research provides a good chance for the authors to understand more theoretically and practically about the stock market as well as the theories of behavioral finance.

4. Research Methodology
4.1. The Role of Behavioral Factors – Analysis:
There are various known psychological biases in behavioural finance literature. Each has implications on financial decision-making and behaviour. Table 7.1 shows the eight biases analyzed in this study, their key effects on investors and its consequences.

Biases, Effects on Investor, and Consequences NAME OF BIAS	KEY EFFECTS ON INVESTOR	CONSEQUENCE
Overconfidence	Too many trades, too much risk, failure to diversify	Pay too much brokerage and taxes, chance of high losses
Representativeness	Tendency to associate new event to a known event and make investments based on it	Purchasing overpriced stocks.
Herding	Lack of individuality in decision making	Bubbles, and bubble bursts
Anchoring	Tendency to consider logically irrelevant price level as important in the process of decision making	Missed investment opportunities, or bad entry timing into the market
Regret Aversion	Selling winners too soon, holding losers too long	Reduced returns
Gamblers' Fallacy	Taking too much risk after a lucky win	Chance of high losses
Mental Accounting	Low or no diversification	Irrational and negative effects on returns
Hindsight	The tendency to feel that a past event was obvious when it really was not, at onset	Incorrect oversimplification of decision making

Table 4.1 Behavioral Factors

4.2. Research Problem:

Understanding conduct elements which have an effect on man or woman investor decisions. These elements are commonly categorized into 4 classes:

1. Market awareness
2. Prospect variables
3. Herding effect
4. Self Confidence

The studies seem at targets to discover, which element from above stated ones impacts the investor the maximum.

4.3. Research Hypothesis:

As mentioned in the literature review above, it is undoubtedly that behavioral factors impact the investment decisions of investors in the financial markets, especially in the stock markets. This study explores the influence levels of the behavioral variables on the individual investors' decisions and their investment performance at the Stock Market, as in the following research model and hypotheses.

Hypothesis H1 : The behavioral variables that influence the investment decisions of individuals at NSE & BSE Stock Exchange in Pune Region are grouped in four factors as the reviewed theories: Heuristics, Prospect, Market, and Herding.

This hypothesis is tested by exploratory factor analysis to identify which dimensions the behavioral variables belong to.

Hypothesis H2 : The behavioral factors have impacts on the investment decisions of individuals at Exchange at high levels using Cronbach's Alpha Reliability Test.

This hypothesis is tested by synthesizing the respondents' evaluations of influence degrees of behavioral factors on investment decisions.

➢ **Cronbach's Alpha Reliability Test:**

Cronbach's alpha is a measure of internal consistency, that is, however closely connected a group of things are as a group. It is thought-about to be a live of scale responsibleness. A "high" value for alpha doesn't imply that the measure is one-dimensional. If, additionally to measure internal consistency, you would like to produce proof that the scale in question is one-dimensional, further analyses will be performed. Exploratory factor analysis is one methodology of checking dimensionality. Technically speaking, Cronbach's alpha isn't an applied mathematics check – it's a constant of responsibleness (or consistency).

Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1. Internal consistency describes the extent to that all the things during a test measure an equivalent conception or construct and thence it's connected to the inter-relatedness of the items within the test. Internal consistency ought to be determined before a check will be used for analysis or examination functions to confirm validity. In addition, dependability estimates show the number of measure error during a test. Put simply, this interpretation of dependability is that the correlation of test with itself. Squaring this correlation and subtracting from 1.00 produces the index of measurement error.

Suppose that measure a quantity which is a sum of K components: X=Y1+Y2+Y3+……+Yk.

➢ Cronbach's α is defined as:

$$\alpha = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K}\sigma_{Y_i}^2}{\sigma_X^2}\right)$$

Where, σ_X^2 is the variance of the observed total test scores, and

$\sigma_{Y_i}^2$ the variance of component i for the current sample of persons.

➢ Alternatively, Cronbach's α can be defined as:

$$\alpha = \frac{K \times \bar{c}}{\bar{v} + (K-1)\bar{c}}$$

Where, K refers to the number of scale items, and

$\bar{c}$ refers to the average of all covariances between items

$\bar{v}$ refers to the average variance of each item

Cronbach's Alpha	Internal Consistency
0.9 ≤ α	Excellent
0.8 ≤ α ≤ 0.9	Good
0.7 ≤ α ≤ 0.8	Acceptable
0.6 ≤ α ≤ 0.7	Questionable
0.5 ≤ α ≤ 0.6	Poor
α < 0.5	Unacceptable

Table 4.2 Cronbach's Alpha Internal Consistency

➢ **Use of Cronbach's Alpha:**

Improper use of alpha will cause things during which either a test or scale is incorrectly discarded or the test is criticized for not generating trustworthy results. To avoid this situation an understanding of the associated concepts of internal consistency, homogeneity or unidimensional can help to improve the use of alpha. Internal consistency is bothered with the interrelation of a sample of test samples, whereas homogeneity refers to unidimensional.

A measure is alleged to be unidimensional if its items measure one latent attribute or construct. Internal consistency is a necessary but not sufficient condition for measuring homogeneity or unidimensional in a sample of test items. Fundamentally, the concept of reliability assumes that unidimensional exists in a sample of test items and if this assumption is violated it does cause a major underestimate of reliability. It has been well documented that a multidimensional test does not necessarily have a lower alpha than a unidimensional test. Thus, an additional rigorous view of alpha is that it cannot merely be taken as an index for the inner consistency of a test.

More significantly, alpha is grounded in the 'tau equivalent model' which assumes that each test item measures the same latent trait on the same scale. Therefore, if multiple factors/traits underlie the things on a scale, as revealed by Factor Analysis, this assumption is violated and alpha underestimates the reliability of the test. If the amount of test items is just too small it'll additionally violate the idea of tau-equivalence and can underestimate dependability. When results meet the assumptions of the tau-equivalent model, alpha approaches a better estimate of reliability. In follow, Cronbach's alpha is a lower-bound estimate of dependability as a result of heterogeneous test items would violate the assumptions of the tau-equivalent model. If the calculation of "Standardized item alpha" in SPSS is more than "Cronbach's alpha", a further examination of the tau-equivalent measurement in the data may be essential.

Alpha is a crucial thought within the analysis of assessments and questionnaires. It is obligatory that assessors and researchers ought to estimate this amount to feature validity and accuracy to the interpretation of their information. Nevertheless, alpha has often been reported in associate uncritical method and while not adequate understanding and interpretation. In this editorial we have attempted to explain the assumptions underlying the calculation of alpha, the factors influencing its magnitude and the ways in which its value can be interpreted. We hope that investigators in future are going to be additional essential when reporting values of alpha in their studies.

Group	Behavioral variables
Heuristic Theory	➢ Representativeness ➢ Overconfidence ➢ Anchoring ➢ Gambler's fallacy ➢ Availability bias
Prospect Theory	➢ Loss aversion ➢ Regret aversion ➢ Mental accounting
Market	➢ Price changes ➢ Market information ➢ Past trends of stocks ➢ Fundamentals of underlying stocks ➢ Customer preference ➢ Over-reaction to price changes
Herding Effect	➢ Buying and Selling decisions of other investors ➢ Choice of stock to trade of other investors ➢ Volume of stock to trade of other investors ➢ Speed of herding

Table 4.3 Behavioral Variables

4.4. Research Design:

A Research layout in step with Andrew B Kirumbi (2018) is the set of techniques and tactics applied in gathering and analyzing measures of the variables precise in the studies. The layout of a glance at defines the check sort (descriptive, correlation, semi- experimental, experimental, evaluate, meta-analytic) and sub-kind (e.g., Descriptive- longitudinal case examine), analysis trouble, hypotheses, freelance and based variables, experimental design, and, if relevant, facts series techniques and a statistical assessment plan. Research layout is the framework that has been created to discover answers to research questions. The studies design used for this particular study examine is "Causal Research design".

Causal studies, moreover called explanatory studies, is the research of purpose-and-impact relationships. To decide causality, it's miles vital to test version within the variable assumed to motive the change inside the other variable(s), and then diploma the modifications within the different variable(s). Other confounding influences ought to be managed for so that they do not distort the consequences, both by retaining them steady in the experimental creation of statistics, or by the use of statistical techniques. This form of studies could be very complicated and the researcher can never be in reality certain that there are no other elements influencing the causal dating, particularly even as managing human's attitudes and motivations. There are regularly a lot of deeper mental issues that even the respondent might not be aware of

There are two studies strategies for exploring the motive-and-impact dating among variables:

A. Experimental Research:

Experiments are normally done in laboratories in which many or all components of the take a look at can be tightly controlled to avoid spurious results because of elements other than the hypothesized causative trouble. Many researches in physics, as an example, use this technique. Alternatively, area experiments can be done, as with medical studies wherein subjects may also have an extraordinary many characteristic that cannot be managed for however wherein at the least the key hypothesized causative variables may be numerous and a number of the extraneous attributes can at the least be measured. Field experiments are also once in a while utilized in economics, alongside whilst two distinct groups of welfare recipients are given opportunity units of incentives or possibilities to earn profits and the ensuing effect on their exertions deliver is investigated.

B. Statistical Research:

In areas in conjunction with economics, maximum empirical studies are completed on pre-gift records, regularly accrued on ordinary foundation by way of using a government. Multiple regression is a group of related statistical techniques that manipulate for (try and avoid spurious impact from) diverse causative affects aside from the ones being studied. If the statistics display enough version within the hypothesized explanatory variable of hobby, its effect if any upon the doubtlessly brought about variable can be measured. Here, we are deciding on statistical studies as we aren't going for any laboratory have a observe.

➢ **Data Collection Tool:**

- Questionnaire Survey:
  The questionnaire survey became the maximum convenient technique for this research because of the fact that the research had to be conducted in a far-flung vicinity. According to Taylor et al (2006), questionnaires are a realistic choice whilst data is wanted from a large wide variety of humans and is an effective method to seize their evaluations and attitude. Three principal factors emphasized by Taylor et al (2006) had been stored in mind while designing the questionnaire survey for the reason of this thesis:
- Assuring the participants of confidentiality.
- Keeping questionnaire compact and using questions which focus on core of the studies work.
- Gathering respondents' interest and preserving it.

For the gathering of records, an internet questionnaire was generated which grow to be circulated via emails. Responses gathered were saved on line itself after which analyzed.

Primary records changed into accrued the usage of an exploratory survey method in which a modern questionnaire with each closed and open-ended questions became administered to seize the important facts approximately the population. The decided-on people have been given the questionnaire to fill wherein people with any problems have been guided by a studies assistant who additionally assisted in disseminating and gathering the questionnaires? These studies become primarily based totally at the theories of behavioural finance: Heuristic idea, Prospect concept, and different theories about impacts of behavioural elements on investors' choice making, and masses of different authors stated inside the literature assessment, to synthesize a tough and speedy of questions related to behavioural elements influencing investment choices. A 5-factor Likert scales, which is probably score scales extensively used for asking respondents' critiques and attitudes became utilized to ask the man or woman shoppers to evaluate the stages in their agreement with the impacts of behavioural factors on their funding desire. The 5 factors within the scale is respectively from 1 to 5: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree.

5. Data Analysis and Interpretation

➢ **Data Analysis:**

Data was analyzed using Cronbach's Alpha Reliability Test and which can be analyzed from the data collected. The facts changed into coded to allow the responses to be grouped into diverse classes. Internal consistency of the multi-item scales was tested using Cronbach's alpha. Factor analysis was used to test the reliability of the items in the multi-item scales. Descriptive statistics was used to summaries the data. This included percentages and frequencies. Tables and graphs were used to present the data.

➢ **Results and Discussions:**

Table 5.0 - Showing Demographic Characteristics of Respondents:

Sr. No.	Demographic Characteristics	Categories	Frequency	Percentage (%)
1	Gender	Male	31	48
		Female	34	52
		Total	65	100
2	Age Group	Below 25 years	54	83
		26 years – 35 years	4	6
		36 years – 45 years	6	9
		Above 45 years	1	2
		Total	65	100
3	Marital Status	Single	48	74
		Married	17	26
		Total	65	100
4	Occupation	Student	54	83
		Business	3	5
		Service	8	12
		Total	65	100
5	Educational Qualification	Bachelor	12	18
		Under-Graduate	14	22
		Post-Graduate or PhD Degree	36	55
		Other	3	5
		Total	65	100
6	Annual Income	Below Rs.1,50,000	47	72
		Rs. 1,50,000 - Rs. 3,00,000	4	6
		Rs. 3,00,000 - Rs. 5,00,000	3	5
		Rs. 5,00,000 - Rs. 8,00,000	5	8
		Rs. 800,000 and Above	6	9
		Total	65	100
7	Percentage of Income Invested	Below 10%	36	55
		11% - 20%	15	23
		21% - 30%	6	9
		31% - 40%	5	8
		41% & Above	3	5
		Total	65	100

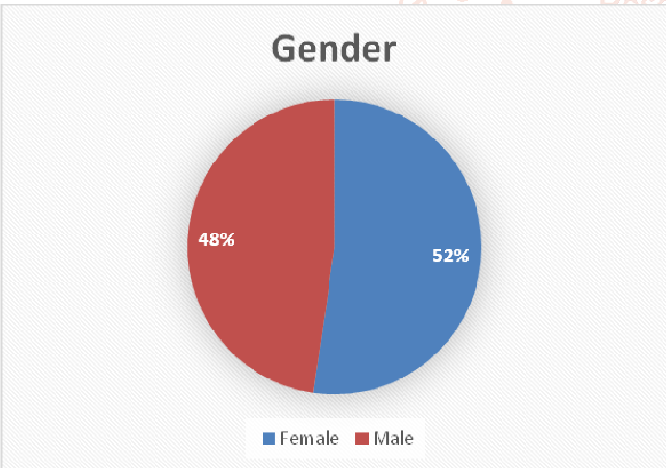
8	Investment Avenues	Shares	17	26
		Fixed Deposit	14	22
		Real Estate	2	3
		Gold	2	3
		Mutual Funds	18	28
		Insurance	6	9
		Others	6	9
		Total	65	100
9	Sources of Investment Information	Brokers	7	11
		Family	17	26
		Friends	14	22
		Newspaper	10	15
		Television	12	18
		Others	5	8
		Total	65	100
10	Attended any course of Stock Market?	Yes	28	43
		No	37	57
		Total	65	100

DATA INTERPRETATION:

1. Gender:

Gender	Frequency	Percentage (%)
Male	31	48
Female	34	52
Total	65	100

Table 5.1 Gender



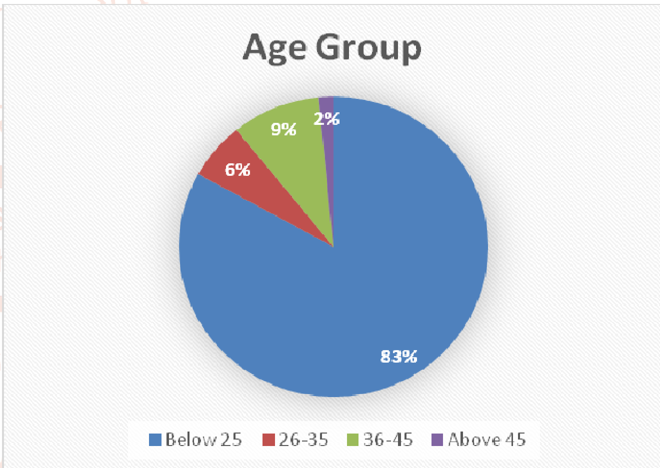
Graph 5.1 Gender Allocation

The above pie chart shows that the numbers of female and male investors in the sample are different and this shows that issues related to gender bias are considered for this study. The majority of the respondents, 52% were females.

2. Age Group:

Age Group	Frequency	Percentage (%)
Below 25 years	54	83
26 years -35 years	4	6
36 years -45 years	6	9
Above 45 years	1	2
Total	65	100%

Table 5.2 Age Group



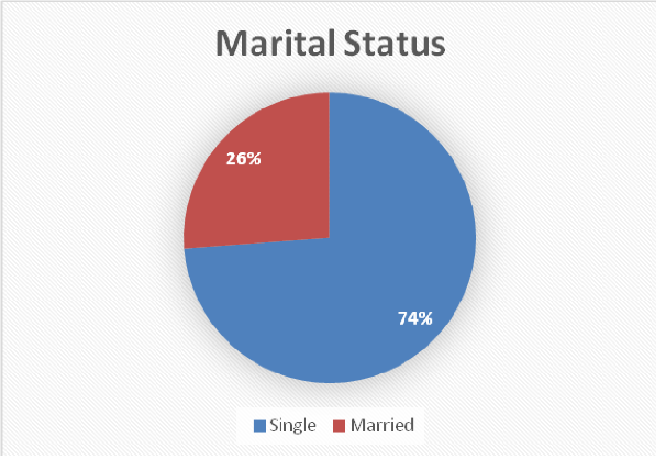
Graph 5.2 Age group Allocation

The study revealed that the stock investors are mainly at the young ages of below 25 years, which accounts for 83% of the total sample, while 9% of the respondents being at the age-range of 36-45 years, and 2% of the sample having the old ages of above 45 years. This sample reflects the fact that a high proportion of individual investors at the NSE are younger than 30 years, and this research may highly reflect the investment behaviours of these investors. This clearly represents the awareness about alternative investment is maximum in the younger generation. The years of earning still being comparatively more for this particular age group and hence their risk bearing capacity is comparatively higher than the age groups ranging from 36 to 45 years and above.

3. Marital Status:

Gender	Frequency	Percentage (%)
Single	48	74
Married	17	26
Total	65	100

Table 5.3 Marital status



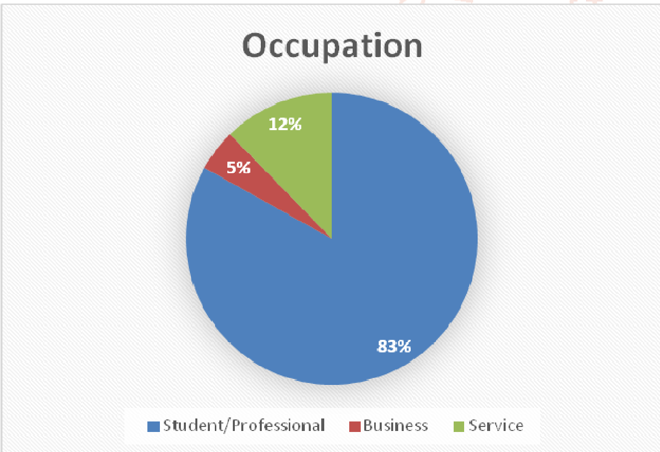
Graph 5.3 Marital Status Allocation

Overall, the majority of the respondents are single i.e. 48 respondents (74%) and 17 respondents are married (26%). It shows that the respondents didn't have much responsibilities as compared to married and these generation respondents have goals to achieve and has high risk-taking capability.

4. Occupation:

Occupation	Frequency	Percentage (%)
Student/Professional	54	83
Business	3	5
Service	8	12
Total	65	100%

Table 5.4 Occupation



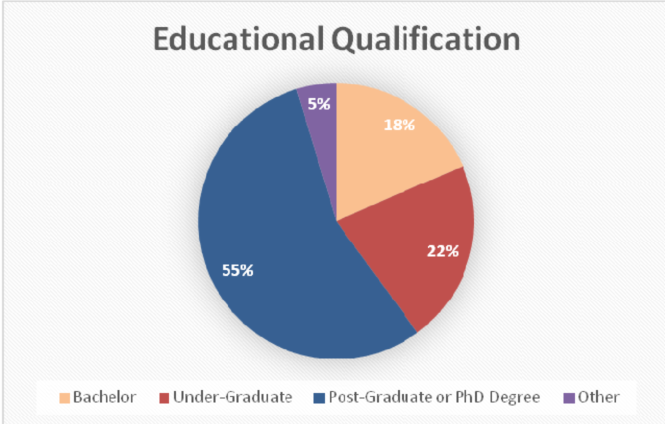
Graph 5.4 Occupation Allocation

In the research occupation is one of the demographical characteristics which affect the investor behavior on investments decision that the majority of the respondents (83%) are Students/Professional, (5%) are Business people, (12%) are doing Service Sectors.

5. Educational Qualification:

Educational Qualification	Frequency	Percentage (%)
Bachelor	12	18
Under-Graduate	14	22
Post-Graduate or PhD Degree	36	55
Other	3	5
Total	65	100%

Table 5.5 Educational Qualification



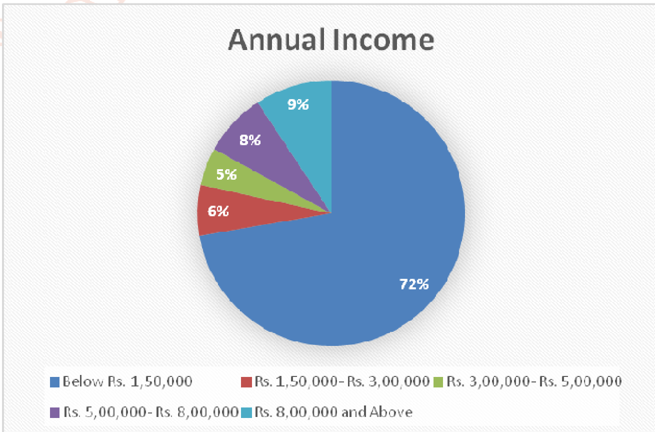
Graph 5.5 Educational qualification Allocation

The 55% of the respondents selected for the study have completed their Post-Graduation or PhD holder i.e. 36 respondents, Under-Graduate of (22%) i.e. 14 respondents, Bachelor i.e.18% i.e. 12 respondents and others of (5%). This pattern shows that educated people are taking part in the capital market as there are many awareness creating initiatives by the regulators that intensify the confidence in individual investors.

6. Annual Income:

Annual Income	Frequency	Percentage (%)
Below Rs. 150000	47	72
Rs. 150000- Rs.300000	4	6
Rs. 300000- Rs.500000	3	5
Rs. 500000- Rs. 800000	5	8
Rs. 800000 & Above	6	9
Total	65	100%

Table 5.6 Annual income



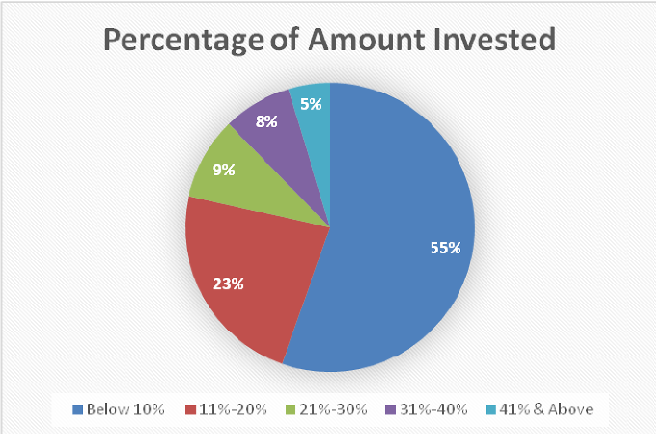
Graph 5.6 Annual income Allocation

The Annual Income is also one of the demographical characteristics that should be considered while investing in the capital market, the below pie chart shows that the annual income of 72% respondents is Below 150000, and rest all categories varies with 1-2% change in between. It shows that the income is less but they invest their income in the market more efficiently.

7. Percentage of Amount Invested:

Percentage of Amount Invested	Frequency	Percentage (%)
Below 10%	36	55
11% - 20%	15	23
21% - 30%	6	9
31% - 40%	5	8
41% & Above	3	5
Total	65	100%

Table 5.7 Percentage of amount invested



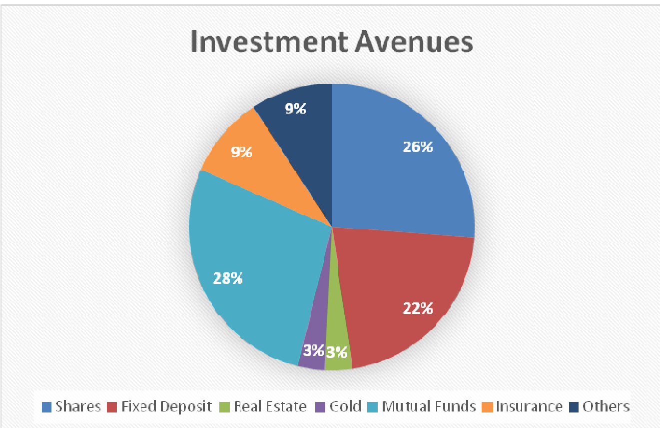
Graph 5.7 Percentage of amount invested Allocation

The above pie chart shows that, amount invested is 10% of the income which shows the demographic characteristic of the investor. Some of the investors who has knowledge are investing more than 40% of the income.

8. Investment Avenues:

Investment Avenues	Frequency	Percentage (%)
Shares	17	26
Fixed Deposits	14	22
Real Estate	2	3
Gold	2	3
Mutual Funds	18	28
Insurance	6	9
Others	6	9
Total	65	100%

Table 5.8 Investment avenues



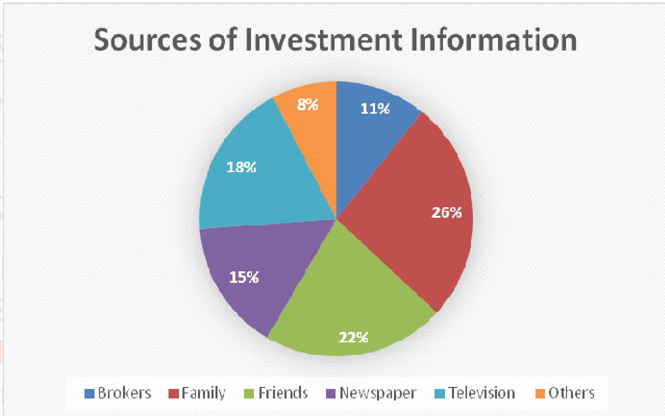
Graph 5.8 Investment avenues Allocation

The above pie chart explains that various investment avenues are available but many of them chose to invest in Shares, Mutual Funds, Fixed Deposits. Shares of the company and Mutual Funds will give the good return because of that many investors choose this option for investment. Fixed Deposit is also an investment option for a good return but it is considered as most liquid asset, so investor can convert it into cash.

9. Sources of Investment Information:

Sources of Investment Information	Frequency	Percentage (%)
Brokers	7	11
Family	17	26
Friends	14	22
Newspapers	10	15
Television	12	18
Others	5	8
Total	65	100%

Table 5.9 Sources of Investment



Graph 5.9 Sources of Investment Allocation

Various sources are available to get information about stock market but it shows the behaviour of the investor/trader how the respondents react on the information which was available by these means. Higher segment is through the Family and Friends.

➢ **Factor Analysis of Behavioural Variables Influencing Individual:**

- **Measurement Reliability Test using Cronbach's Alpha:**

Cronbach's Alpha is used to test the reliability of items included in the factors. This test is done to make sure that the measurements are reliable for further uses. The results of Cronbach's alpha test are shown below using Anova: Two-Factor Without Replication on MS-Excel.

Using the above-mentioned formula, Cronbach's Alpha is calculated:

Reliability Statistics	
Cronbach's Alpha	No. of Respondents
0.717	65

Table 5.10 Cronbach's Alpha

The Cronbach's alpha is 0.717 which indicates a high level of internal consistency for the scale.

Anova: Two-Factor without Replication

SUMMARY	Count	Sum	Average	Variance
Row 1	10	33	3.3	0.90
Row 2	10	27	2.7	0.68
Row 3	10	23	2.3	0.23
Row 4	10	38	3.8	1.73
Row 5	10	28	2.8	0.18
Row 6	10	32	3.2	0.40
Row 7	10	32	3.2	0.40
Row 8	10	33	3.3	0.46
Row 9	10	31	3.1	0.10
Row 10	10	29	2.9	1.43
Row 11	10	30	3	0.00
Row 12	10	32	3.2	0.40
Row 13	10	27	2.7	1.57
Row 14	10	25	2.5	0.50
Row 15	10	20	2	0.67
Row 16	10	34	3.4	0.27
Row 17	10	22	2.2	0.62
Row 18	10	46	4.6	0.49
Row 19	10	30	3	0.00
Row 20	10	29	2.9	0.54
Row 21	10	31	3.1	0.54
Row 22	10	29	2.9	0.77
Row 23	10	30	3	0.00
Row 24	10	31	3.1	0.10
Row 25	10	29	2.9	1.66
Row 26	10	27	2.7	0.46
Row 27	10	31	3.1	0.54
Row 28	10	34	3.4	1.16
Row 29	10	34	3.4	2.04
Row 30	10	29	2.9	0.99
Row 31	10	23	2.3	0.90
Row 32	10	33	3.3	0.23
Row 33	10	29	2.9	0.54
Row 34	10	41	4.1	0.77
Row 35	10	40	4	0.89
Row 36	10	33	3.3	0.46
Row 37	10	30	3	0.67
Row 38	10	25	2.5	0.94
Row 39	10	30	3	0.22
Row 40	10	30	3	0.89
Row 41	10	29	2.9	0.54
Row 42	10	21	2.1	0.99
Row 43	10	32	3.2	0.62
Row 44	10	38	3.8	1.07
Row 45	10	32	3.2	2.84
Row 46	10	28	2.8	1.51
Row 47	10	27	2.7	2.01
Row 48	10	31	3.1	0.54
Row 49	10	27	2.7	0.46
Row 50	10	28	2.8	2.62
Row 51	10	20	2	1.33
Row 52	10	33	3.3	0.23
Row 53	10	18	1.8	1.07
Row 54	10	20	2	1.33
Row 55	10	29	2.9	0.32
Row 56	10	30	3	0.67
Row 57	10	27	2.7	0.23
Row 58	10	24	2.4	0.71
Row 59	10	27	2.7	0.90
Row 60	10	28	2.8	0.84
Row 61	10	32	3.2	0.62
Row 62	10	35	3.5	0.72
Row 63	10	26	2.6	1.16
Row 64	10	32	3.2	0.18
Row 65	10	30	3	0.89
-				
Column 1	65	190	2.92	0.57
Column 2	65	189	2.91	0.96
Column 3	65	216	3.32	0.91
Column 4	65	193	2.97	1.00
Column 5	65	196	3.02	0.73
Column 6	65	190	2.92	1.17
Column 7	65	162	2.49	1.25
Column 8	65	200	3.08	0.88
Column 9	65	204	3.14	0.78
Column 10	65	184	2.83	0.99

Table 5.11 Anova: Two-factor Without Replication Results

- **Anova Results:**

Source of Variation	SS	df	MS	F	P-value	F crit
Rows	162.16	64	2.53375	3.399	4.97101E-15	1.33173
Columns	27.3908	9	3.04342	4.082	4.24606E-05	1.89612
Error	429.409	576	0.7455			
Total	618.96	649				

Table 5.12 Anova Results

➢ **Cronbach's Alpha Results:**
Using Mean Square of Error and Mean Square of Rows on Excel, calculations were made:

$$\alpha = 1 - \frac{\text{MS of Error}}{\text{MS of Rows}}$$

$$\alpha = 1 - \frac{0.7455}{2.53375}$$

α = 0.7057

Validity is concerned with the accuracy of our measurement in the context of sample representativeness. It is related to the ability to create questions that reflect the issues being researched. The content validity of the survey instrument (*i.e.* the questionnaire) is verified by discussions with two academician and one industry professional.

The reliability of the survey instrument is tested with the help of Cronbach's Alpha method. The Cronbach's Alpha method allows us measure the reliability of different categories. It consists of estimates of how much variation in scores of different variables is attributable to chance As a general rule, an alpha coefficient greater than or equal to 0.6 is considered acceptable and a good indication of construct reliability The Cronbach's Alpha shows that these categories for survey instruments are valid and reliable so above table will conclude that Cronbach's Alpha is 0.705 so it will say that for research data is more reliable.

6. Findings

Most of the individual buyers inside the surveyed sample had not but taken any path on this subject, and were indifferent on speculative (brief-time period) funding or both a speculative and capital funding and had participated in investment activities for much less than three years. The behavioural elements affecting funding selections aren't grouped into four factors as proposed in the literature evaluate chapter that is; Heuristics, Prospect, Market, and Herding, as an alternative the consequences show that heuristics factors are divided into two sub elements; Over-Confidence and gambler's fallacy and availability bias. This component discusses the effect tiers of those elements at the funding selections of character traders. As consistent with the discussions made in preceding sections, herding effect is not in any respect discovered within the given pattern area. This form of behaviour is generally observed in the ones traders who buy whilst market is high and promote whilst it dips.

Another behavioural aspect beneath consideration changed into the marketplace consciousness. This is quite an imperative sort of behavioural factor that an investor needs to have. If one need to invest on his personal, then it's far obligatory for him to know approximately the market, the current traits within the markets and every different possible minute element approximately the market. Not understanding about the marketplace can guarantee the investor of wrong investments yielding unwanted returns. For the given sample area, the level of marketplace consciousness seems to be notably excessive and which honestly is a good signal.

Prospect variables are something that have an outstanding effect at the funding choices of the traders. They are in addition categorized as- Loss Aversion, Risk Aversion and Mental Accounting. All of these elements which are observed to be driving the investments choices, constitute to a commonplace title referred to as- Prospect Variables. Loss aversion is the intellectual characteristic of an investor which refrains him from going for more loss- making selections because of current loss. This stops the individual from taking further dips. Risk aversion is the satisfactory which restricts the investor from taking more-terrestrial chance which may not constantly yield suited outcomes. And ultimately, intellectual accounting drives the buyers to suppose that there are numerous compartments in his thoughts, thereby treating every coin's outflow one at a time. All the 3 factors are showing a sizeable effect on the minds of the buyers.

Heuristic variables take place to be a major a part of the studies study as well. They in the main include three sub-factors- Overconfidence, Gambler's fallacy and availability bias. Overconfidence, because the name itself suggests is the blind-religion in a single's personal skills, know-how and competencies that has a totally thick probability of main the investor right into a volatile state of affairs which he in no way deliberate for. In the corresponding studies have a look at the overconfidence turned into check by asking whether the investor has religion in his knowledge, competencies and competencies to such a volume which makes him say that he can outperform the marketplace.

Gambler's fallacy is the concept which states that a person has a tendency to believes that if something is going on again and again in present, then it is less in all likelihood to appear inside the destiny. This bias is likewise located to be gift for the given pattern space. Third constituent that comes under heuristic variable is availability bias. Availability bias is the inclination towards matters approximately which more records is to be had. Similarly, this can be carried out in case of funding avenues in a context that buyers can be inclined towards dealing with neighborhood stock as extra statistics in to be had rather than worldwide stocks.

7. Recommendations

Recommendations given to traders are that they must cautiously don't forget before making funding decisions, but have to now not care an excessive amount of about the prior loss for his or her later investment selections. This can restrict the coolest possibilities of investment and effect badly the psychology of the buyers and cause unfavourable funding performance.

Besides, the buyers have to now not lessen their regret in investment by avoiding promoting lowering shares and selling increasing ones, when you consider that this could result in traders maintaining all dropping shares and this impact negatively the funding overall performance. Also, the buyers must no longer divide their funding portfolio into separate accounts due to the fact every detail of the portfolio may have a strict relation to the others and the treating every detail as an independence can be end result a negative investment overall performance.

Apart from the character buyers who directly enjoy the findings of this study, the safety businesses should use these findings as reference for his or her evaluation and prediction of the traits of the safety market. The joint-stock companies, which raise the capital from stockholders, should use the results of this study for good decision making to attract the investors to buy their stocks.

8. Conclusions

There are five behavioural factors that affect the funding decisions of character buyers at the NSE; Herding, Market, Prospect, Overconfidence and gamble's fallacy, and Anchoring-potential bias. The herding factor includes four behavioural variables; following the selections of the other investors (choice of buying and selling stocks; volume of trading shares; speed of herding).

Overconfidence and gambler's fallacy had better effect at the decision making of person buyers. This way that investors believed that their skills and know-how of stock market ought to assist them to outperform the marketplace and additionally, they were capable of anticipate the cease of properly or poor market returns at NSE and that they typically have the capacity to anticipate the ends of desirable or terrible market. Since overconfidence had effective impacts on the investment decision, character investors at the NSE need to handiest be overconfident at an acceptable level to make use of their skills and knowledge to enhance the investment effects. In the uncertainty, the overconfidence is beneficial for the traders to do hard tasks and help them to forecast the future traits and must be used in clever and suitable methods.

The market factors consist of 3 variables: Price changes, Market Information, and Past performance of stocks. The very excessive effects of marketplace variables can be connected to the respondents' profiles, which display that most of them have now not attended schooling guides about stocks. However, they recognize the significance of market data to the fee movement in addition to the importance of technical analysis in forecasting.

The Prospect Theory possesses four variables that have sizeable impacts on the investment selection making: loss aversion, regret aversion, and intellectual accounting. Loss aversion ranks as the variable having the highest impact on the selection making of the traders, for that reason buyers generally tend to are seeking for extra chance after a prior benefit and therefore after a loss, they tend to be extra threat averse.

Individual traders are endorsed to choose proper investment partners or alliance to remember as references for their investment. Investors have to establish the forums to help each other in finding dependable information of stock marketplace. The cooperation of a crowd of traders can help restriction the dangers and boom the probabilities to have right funding effects. Investors need to carefully keep in mind the funding options independently earlier than making an allowance for different traders' choices of buying and promoting stocks.

9. Limitations

The main weakness of the study is owing to the fact that it aims to study investor behavioral patterns using questionnaires. The primary challenge faced was the management of the questionnaires; maximum individual investors had been now not cozy with the questionnaires with the main argument being their privacy changed into being infringed. As such, a whole lot of time changed into taken in explaining that the observe was for educational purposes handiest and additionally in amassing facts. The researcher was no longer able to accomplish the a hundred% reaction of questionnaires for all the stock brokerage and funding bank.

Making financial decisions can be demanding for various reasons that possibly could push many into making irrational decisions at one point or the other. However, while answering a questionnaire, the same individuals are likely to be relaxed and in a better frame of mind, hence choosing to give answers, which may put them across in different light, especially in context of questions which were presenting hypothetical situations. To overcome this problem to an extent, many questions attempted to make the participants admit mistakes they have made in the past.

A second limitation arises out of the fact that India is a vast country, and this study cannot be considered an evaluation of the average Indian investor. The sample collected is mainly from a city called Pune, which accounts roughly for a mere 3% of the Indian population. The location was chosen mainly because it was the researcher's home state thus making data collection convenient. It remains to be seen whether investors in other parts of the country would exhibit a similar behavior as would be found out by this study.

The records acquired from this examine is probable to lack info or intensity on the topic being investigated- behavioural influences on the individual investor choices of securities. Securing a high response fee to a survey changed into also difficult to manipulate.

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Appendix

I am student at MIT School of Management, World Peace University and writing my research paper on Behavioral Factors that affect Investor choices. I kindly request you to take part of your time to complete this questionnaire. I assure you that all the information provided will be treated with strict confidentiality. In each question provide the response that best reflects your own experiences. Your cooperation will greatly contribute to the success of this study. These questionnaires are intended to collect primary data from the Individuals, Students, Professionals, Faculty, Industry Expert to carry out the research.

➢ **Section A: Background of the Respondent:**

1. Gender:
   A. Male
   B. Female

2. Age Group:
   A. Below 25 years
   B. 26 years -35 years
   C. 36 years -45 years
   D. Above 45 years

3. Marital Status:
   A. Single
   B. Married

4. Occupation:
   A. Student / Professional
   B. Business
   C. Service

5. Educational Qualification:
   A. Bachelor
   B. Under-Graduate
   C. Post-Graduate or PhD Degree
   D. Other

6. Annual Income (INR):
   A. Below Rs. 15000
   B. Rs. 15000- Rs. 30000
   C. Rs. 30000- Rs. 50000
   D. Rs. 50000- Rs. 80000
   E. Above Rs. 800000

7. Percentage of Income Invested:
   A. Below 10%
   B. 11% - 20%
   C. 21% - 30%
   D. 31% - 40%
   E. Above 40%

8. Investment Avenues
   A. Shares
   B. Fixed Deposit
   C. Real Estate
   D. Gold
   E. Mutual Funds
   F. Insurance
   G. Others

9. Sources of Investment Information
   A. Brokers
   B. Family
   C. Friends
   D. Newspapers
   E. Television
   F. Others

10. Have you attended any course of Stock Exchange?
    A. Yes
    B. No

➢ **Section B: Behavioral Factors Influencing Investment Decisions:**

Please evaluate the degree of your agreement with the following statements based on the 5- Likert scale:

(5 Point being Strongly Agree, Agree, Neutral, Disagree, 1 Point being Strongly Disagree)

➢ **Herding Factors:**

1. Others Investors' decisions of choosing stock types/volumes have impact on your Investment Decisions.
2. Others Investors' decisions of Buying and Selling stocks have impact on your Investment Decisions.

3. You usually react quickly to the changes of other investors' decisions and follow their reactions to the stock market.

➢ **Overconfidence & Gambler's Fallacy:**

1. You believe that your skills and knowledge of stock market can help you to outperform the market.
2. You are normally able to anticipate the end of Good or Poor.

➢ **Anchoring & Ability Bias:**

1. You forecast the changes in stock prices in the future based on the recent stock prices.
2. You prefer to buy Local stocks than International stocks because the information of Local stocks is more available.

➢ **Market Factors: Price, Information:**

1. The rate of return of your recent stock investment meets your expectation.
2. Your rate of return is recently equal to or higher than the average return rate of the market
3. You feel satisfied with your investment decisions in the last year (including selling, buying, choosing stocks, and deciding the stock volumes).