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## Understanding Different Biases That Affect the Investor Decision Behaviour

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# Understanding Different Biases That Affect the Investor Decision Behaviour

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# **Understanding Different Biases That Affect the Investor Decision Behaviour**

## **INTRODUCTION:**

The study of the psychological phenomena on investors and financial analysts' behaviour is known as Behavioural finance. Furthermore, it takes into the account that ensuing effects on the market. I highlight the point that the investors are not all the time logical and fair, moreover their self-containment is narrow, and that they will always be swayed by their own biases.

Traditional finance theories are built on two key assumptions: that humans are rational and that markets are efficient (Fama, 1970). However, neither humans nor the market are efficient. The turbulent and unusual condition in a market is not described by conventional finance. Furthermore, when making a monetary or financial decision (more specifically, a money management decision), psychological factors and emotion influence human behaviour, and when investors are stressed and nervous, they lose their ability to make a correct and rational decision, and thus they frequently make poor decisions. The essential assumptions of classical finance theories were universally accepted, yet they were seldom questioned. However, as time passes, previous assumptions become less useful for making sound investment decisions, and a new approach of analysing finance known as behavioural finance emerges.

## **BEHAVIOURAL FINANCE THEORY**

Behavioral finance is an area of finance that has its roots in the psychology of human decision-making. It takes into account the many psychological biases that people have. Irrational judgments are the result of these biases. Behavioral finance examines hypotheses based on psychology in order to explain financial market irregularities. Let's compare behavioural finance with traditional theory to understand Traits of behavioural finance are:

- Investors are swayed by their own biases.
- They do have the control in their self-boundaries.
- Instead of being considered as rational investors are treated normal.
- Investors make minor mistakes and errors that leads to poor judgement.

## **UNDERSTANDING DIFFERENT BIASES THAT CAN AFFECT**

### **INVESTMENT DECISION:**

The frequent behavioural bias that mainly effects your resolution in order of investing and to be a successful investor over the long range, We believe it is grasping and get the better of the basic human cognitive or psychological biases that all the time come up with the poor judgments and financial blunders is critical. Cognitive biases are 'hard wired' and we all are accountable to choose our shortcuts how we want to, to be cocksure in our resolution-making process and twist complex decisions. which is important in our perspective, to lowering the risk and in betterment of investment and returns over time. Below we have discussed six Biases which we have taken in our project.

- **REPRESENTATIVE BIAS-** The representativeness Biases comprises estimation of the probability of an event by comparing it to the current prototype that have been planned already in mind. This prototype is the most relevant or typical example of a particular event. The problem with this is people overestimate the similarity between the two choices which they are comparing.

Whenever we make decision, we also use our mental shortcut or " rules of thumb" know as heuristics. So the decision we make does not always have the same kind of time limit or utility to compare the information before we are taking any decision or reaching to a conclusion so we use representativeness Biases to help us take the decision properly and accurately.

- **LOSS AVERSION-** Loss aversion is the inclination for the people to dynamically prefer avoiding loss than attaining gains. Sharply relating to the loss aversion is the endowment

outcome, which takes place when people place their greater value on a product that they own than on a different good that they do not own it. The loss aversion or endowment effects that can conclude to poor and irrational investment resolution, whereas investors decline to sell loss-making investments in the expectation of making up back their money.

Loss-aversion tendency breaks one of the cardinal rules of economics: the measurement of opportunity cost. Over time to be a successful investor you have to be capable to

accurately measure the opportunity cost and not be anchored to the previous investment's decisions due to the inbuilt human tendency to keep at arm's strength from losses. Due to loss aversion investors who become anchored will pass on a great amount of investment opportunities to retain an hold on to the current-loss making investment in the expectation of recouping their losses which they have faced.

Majority of people will take the \$900 than risk a 90% chance of winning \$1000 when given the option to them. The expected outcome is identical in both cases, despite the fact that this is the case. However, most people would rather take a 90 percent chance of losing \$1000 rather than lose \$900, even if they could lose both.

- **OVERCONFIDENCE-** When the investor is overconfident it may lead to underperformance because sometimes it can cause excessive or active trading. Annual portfolio returns of 18.5 percent for the least active and 11.4 percent for the most active traders were found in a 1999 study.
  
- **CONFIRMATION-** Confirmation Bias is the ability of people to give attention to only that information that satisfy their believe and avoid information that opposes it. It is basically found in Behavioural finance. Our Biases actually control us in taking purely rational investment decision.
  
- **AVAILABILITY BIASES-** It depends on random example that comes in the mind of

investor, so availability biases basically depend on the current information and the latest news.

- **FRAMING BIASES-** In framing biases decision is made as per the information presented Infront of the investor for making the decision and investor take different decision to a particular opportunity completely depending on how it is shown to them.



□ OBJECTIVES OF RESEARCH:

- To determine if investors show irrational behaviour while making investment decisions.
- To examine which bias affects the decision of investors.
- To determine the frequency of their investments.
- To determine the existence of representative, loss aversion, framing, confirmation and representative bias.
- To determine the effect of biases on investors' decisions.
- To study whether the different traits of an investor like frequency of investing or time for which investor is in the stock market affects the decision-making behaviour.

## LITERATURE REVIEW:

- **Evaluation of behavioural biases affecting investment decision making of individual equity investors by fuzzy analytic hierarchy process (Jain, Walia, & Gupta, 2019):**

Research in the field of behavioural finance has shown that investors act in irrational ways when they make investment decisions. Investors often act in ways that don't make sense, so they have a lot of behavioural biases that affect their investment decisions. People in Punjab, India, make a lot of decisions about where to invest their money because of behavioural biases. The goal of this paper is to rank these biases. Investors and other people in the capital market could benefit from this research because it would show them how to make better investment decisions.

- **Interrelationship of biases: effect investment decisions ultimately (KAFAYAT, PMAS):**

The goal of this study is to find out if investors on the Islamabad Stock Exchange show signs of irrational behaviour when they are faced with certain psychological dilemmas about the financial world and how these dilemmas connect to each other. People in this study have to deal with three problems, which are called "self-attribution bias" and "overconfidence bias." There are many different ways that an investor can be biased, but the main goal of this study is to show that these biases have an effect on how well an investor makes decisions. For this study quantitative method is used and a survey is conducted. Structural Equation Modelling is used to look at how decisions are made in terms of behaviour. This is done by looking at

the empirical data that has been gathered. In this study, the findings can help people who invest, buy or sell money, as well as people who work in the financial industry, think more rationally and make better decisions.

- **Behavioural Finance Biases in Investment Decision Making (Muhammad Atif Sattar, 2019):** Traditional finance says that investments are made by people who act rationally. Investors look at risk and return before making a decision to make the most money. Later, behavioural

finance challenges traditional finance and adds psychological factors that affect decision making. The goal of this research paper is to find out how behavioural biases affect investment decisions when there is a lot of uncertainty in the market. Dependent variable investment decision making is a complex process. It can never be made in a single step by relying on personal resources. Based on this study, we will look at how human rational and irrational behaviour affects investment choices, and how this affects the decision-making process. Behavioural finance phenomenon variables, such as heuristic, prospects, personality traits, feelings, moods, and environmental factors, are studied in this research. Overconfidence, Representativeness, Anchoring, Regret Aversion, Hindsight, Herding Effect, and Home Bias are some of the psychological behaviours that investors have. Survey questionnaires are used to get a sample for quantitative research.

In order to find out whether or not the hypothesis is true, we need It was done by the SPS software. There was a link between behavioural biases and investment decisions. Empirical evidence shows that people make investment decisions based more on their heuristic behaviours than on their prospects and personality traits. The uniqueness of this study is that it is very beneficial for investors and financial institutions to make decisions based on how they feel.

□ **Behavioural biases affecting investors' decision-making process: a scale development approach (Jinesh Jain, 2021):**

Advocates of behavioural finance have questioned the existence of efficient markets and rational investors. They say that investors aren't always rational when they make decisions.

Even though there has been a lot of different research done in the field of behavioural finance, there is still a need for more research into the subject because there are only a few behavioural biases that investors have to deal with when they make investment decisions. Thus, this study aims to build a scale that can measure all of the behavioural biases that affect investors' decision-making process. To come up with a comprehensive, reliable, and valid scale for measuring the behavioural biases that affect investors' decision-making process, a rigorous multi-stage scale development method was used. Stage one began with a thorough

review of the literature, then interviews with experienced stockbrokers to better understand the concept and get new ideas about the dimensions of behavioural biases. In stage two, 52 items that measured different types of behavioural biases were made and judged by a panel of judges. It was done in the third stage, which gave a set of 39 things. Data from 332 individual equity investors on a 7-point Likert scale were then collected in the fourth stage, using the snowball sampling method. This was the last stage.

Biases are multidimensional and have a big impact on investors' decisions, according to the results of the study. They include Availability Bias, Representativeness Bias, Overconfidence Bias, Market Factors, Herding, Anchoring and Mental Accounting. The research in this article has come up with a scale that can measure all of the behavioural biases that affect equity investors' decision-making process. This scale is comprehensive, reliable, and valid.

There is a new field of study called "behavioural finance," and it needs more study, especially in India. The main goal of this study is to give researchers a scale that has been used to measure behavioural biases and how they affect investors' decision-making. In the field of behavioural finance, this kind of tool can help. Other research studies may also find it useful to help them reach their goals.

### **DATA COLLECTION**

The technique opted for data collection is primary research. The data is gathered through a well-structured questionnaire consisting of 15 questions. The main aim of opting for a questionnaire-based data collection method was due to the analysis and understanding of similar studies which are related to this type of research where the behavioural pattern for understanding different biases that can affect the investment decision.

The survey questionnaire was floated among individuals of different age groups and backgrounds to get a diversified opinion of them, of how is their understanding of investment and how different biases affect their investment decision. But due to limited outreach to the people most of the respondents belong to a particular set of groups, providing results that are of the same demographic in terms of age bracket and their learning technique, the survey was posted on the social media platforms and was floated amongst the personal connections as well for varied responses in terms of demographics.

□ **STUDY SETTINGS:**

The location or facility where the research/study is performed is referred to as the study environment. The data for this analysis will be obtained in Noida, U.P. and other Indian cities. Although a large portion of this research will be based on Jaipuria Institute of Management, Noida & Lucknow do investment in stock markets as the research has been done by the students of the institute.

□ **SAMPLING:**

The population for the sample was determined using convenience sampling. Questionnaires will be provided to 151 individuals, mostly students aged 18-25. Since there was no full list of who used to invest, not every investor had a chance of being included in the analysis. As a result, convenience sampling is the best option for selecting samples where it is difficult to classify all members of a group.

## **DATA INTERPRETATION AND ANALYSIS:**

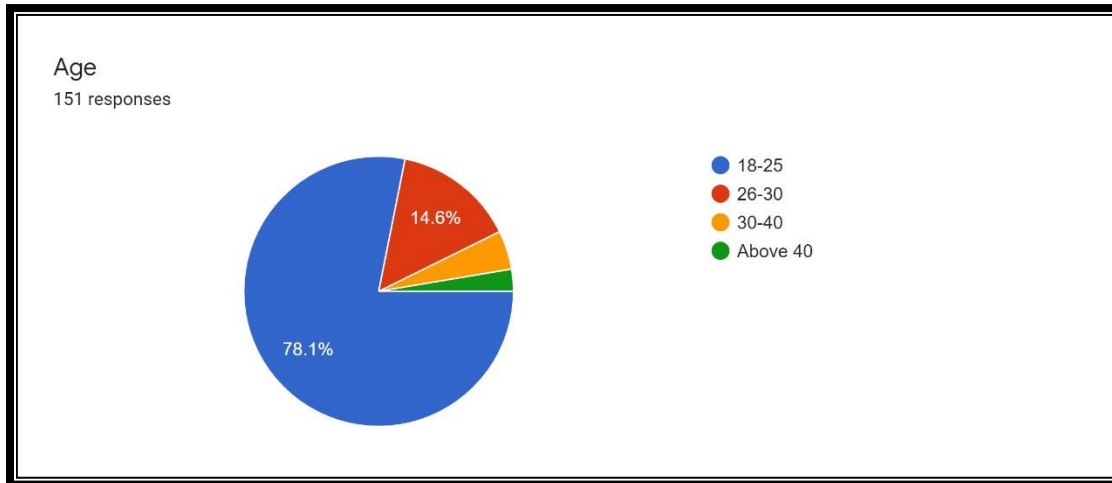
The technique that we have opted for data collection is both primary and secondary research. The data that we have collected is through a well-structured questionnaire consisting of 15 questions. The main aim of opting for a questionnaire-based data collection method was due to the **analysis** and **understanding** of similar studies which are related to this type of research where the behavioural pattern of the investors. Questionnaire was floated among individual of different age groups and backgrounds and even to moms of younger age students to get a diversified opinion from them the responses were huge in numbers, and also the opinions of each of the respondent was different from one another. Considering the same in mind, we did a cumulative analysis of the same.

### **Interpretation**

A total of 151 responses has been collected for the purpose of analysis and interpretation so as to understand the different biases that can affect the investment decisions of an individual.



2.



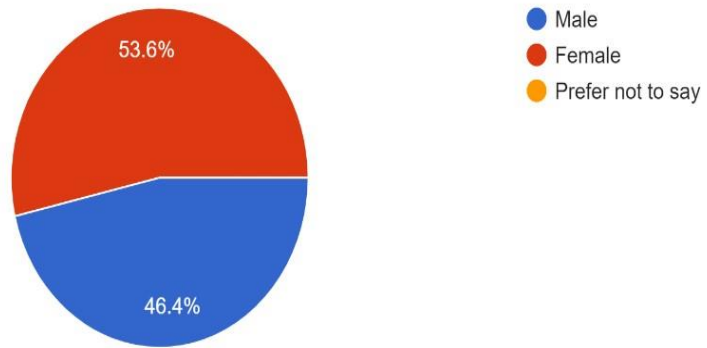
**Interpretation-**

The responses which have been received is from different age groups. Majority of them belong to 18-25 years of age. 14.6% belong to 26-30 years of age and the rest belong to 30 and above.

3.

## Gender

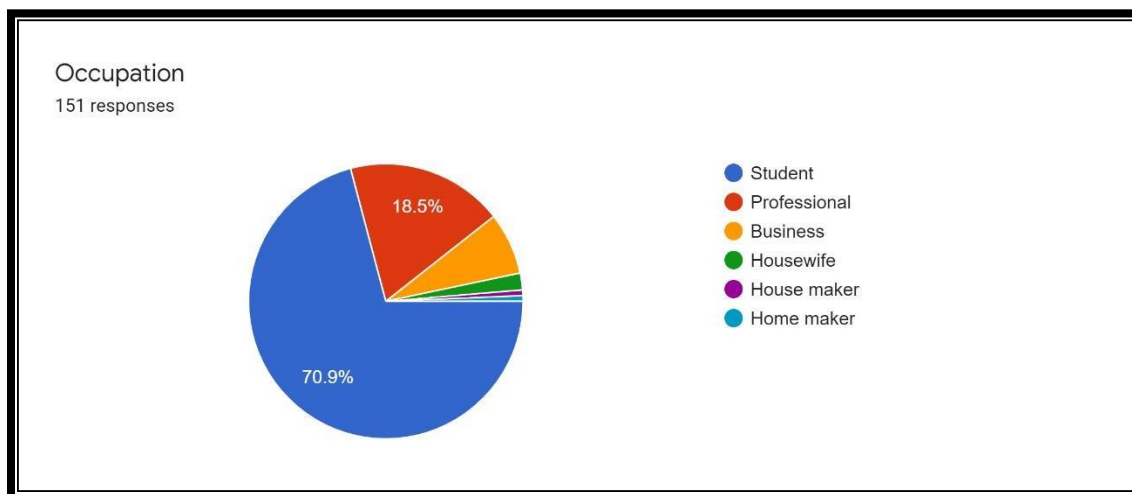
151 responses



### **Interpretation-**

As per the analysis above it could be analysed that 53.6% of the respondent are female and the rest 46.4% are male. Although there is no effect of gender on the survey taken and the analysis is done in general keeping in mind the investors behaviour and pattern of investing also what biases effect the investing decisions of the investors.

4.

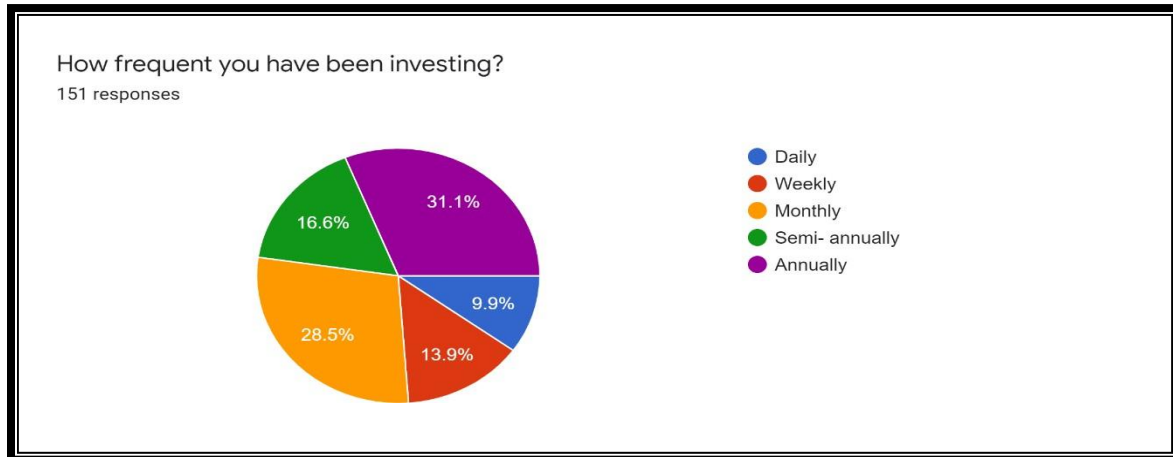


### **Interpretation-**

As per the survey taken from the above pie chart it could be analysed that 70.9% of the respondent among 151 responses received are students. One point that could be taken note of that majority of the investors are management students who are enthusiastic to invest in the companies and holdings. The rest 18.5% are professionals and among the 10.6% are a mixture of

business class people and housewives.

5.



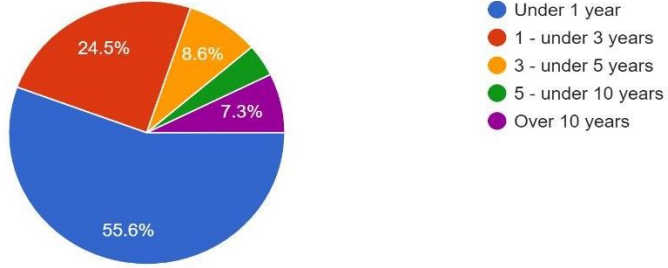
**Interpretation-**

While asking about how frequent an individual is involved in investing, from the above response of 151 people it could be analysed that majority of them invest annually which comprises of 31.1%. 28.5% of them do investing on monthly basis. 16.6% out of 151 respondents invest semi-annually as per their convenience. 13.9% do it on weekly basis. The rest 9.9% of the people among all the responses received are involved in investing on day-to-day basis.

6.

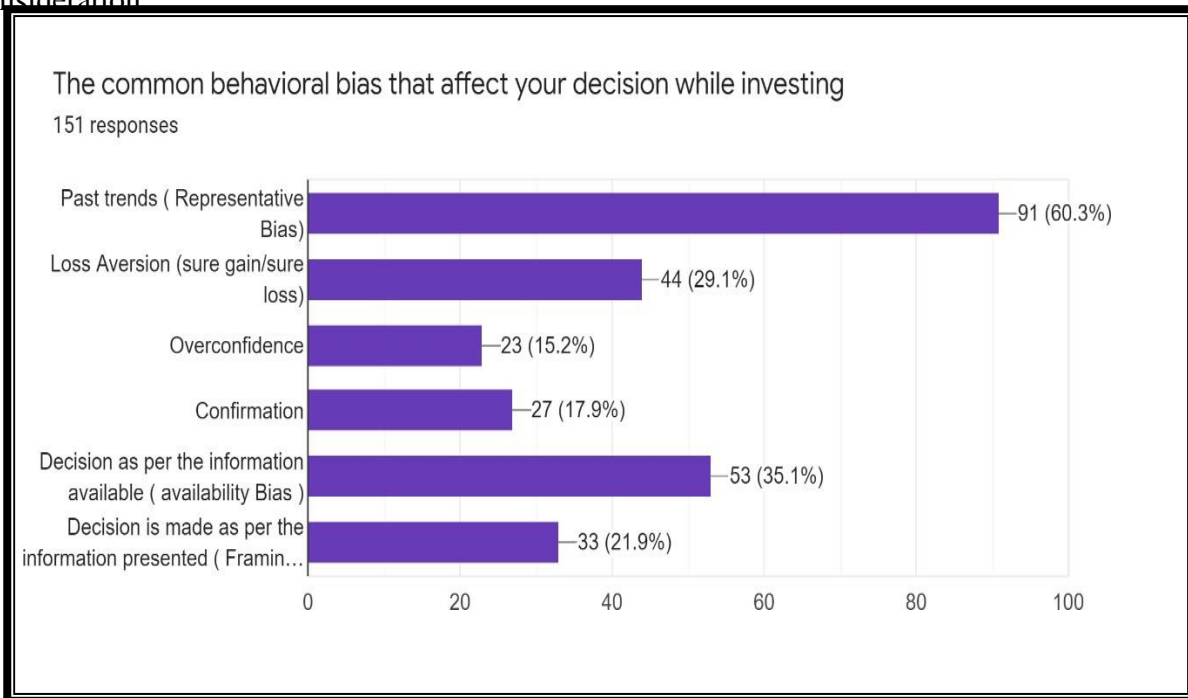
How long have you attended the stock market?

151 responses



### Interpretation-

As per the questionnaire framed, we tried to ask different investors so as to how long they have been into stock market. Since nowadays every second person is involved in shares and attend the stock market. After receiving responses from 151 people, it could be analysed that 55.6% are only for a shorter duration which is within one year. 24.5% are under 3 years. 3 to 5 years comprises of 8.6% of the total population taken into consideration for survey. And the rest 7.3% of them are into stock market for about more than 10 years which indicates that they are long term investors and are into it for a very longer duration of time. Which means that their behavioural pattern of investing and biases that effect while making decisions for investments could be taken into consideration



7.

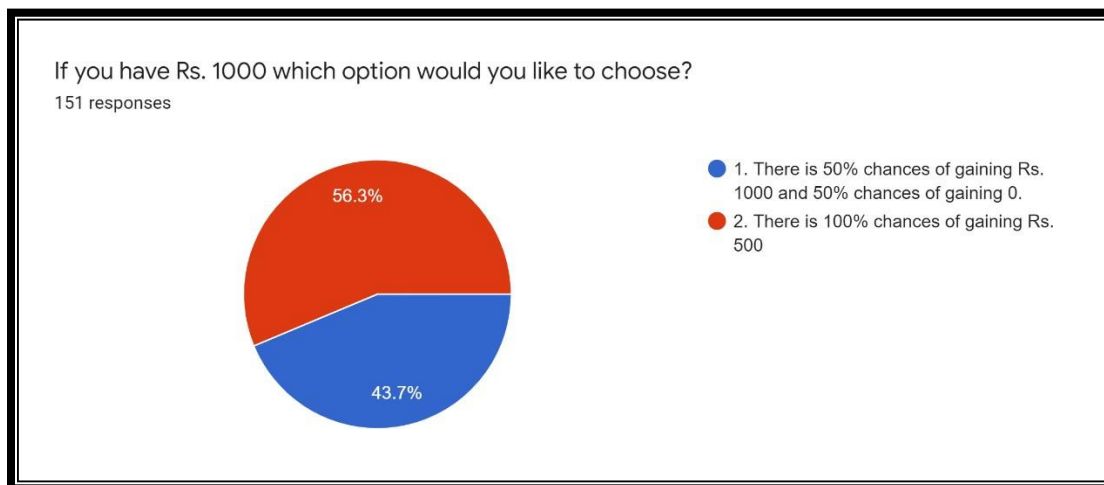
**Interpretation-**

The common behaviour bias that affect an investors decision while investing could be analysed from the above data. 60.3% of the respondents out of 151 believe on past trends and then take a decision. 29.1% go with sure loss and sure gain which is nothing but loss aversion. Which means



that they invest as per the sure loss sure gain opinion. 15.2% belong to overconfidence category where they invest when they are so sure about an investing decision that they just go ahead and invest. 17.9% believe in confirmation where they take others opinion to go ahead. 35.1% of the investors go with the information which is available with them and the rest 21.9% of the respondents take decision as per the information which has been presented Infront of them.

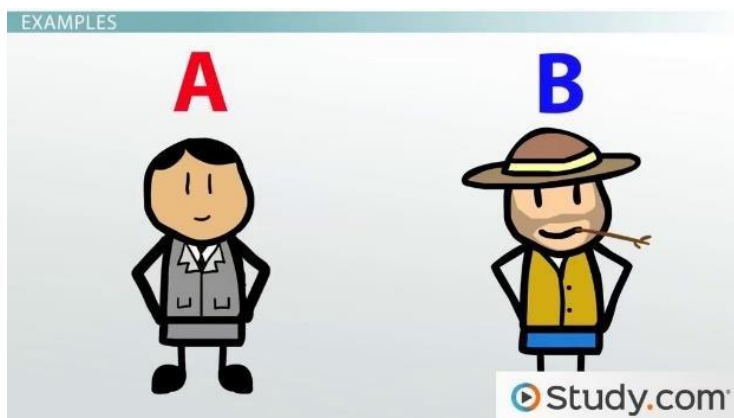
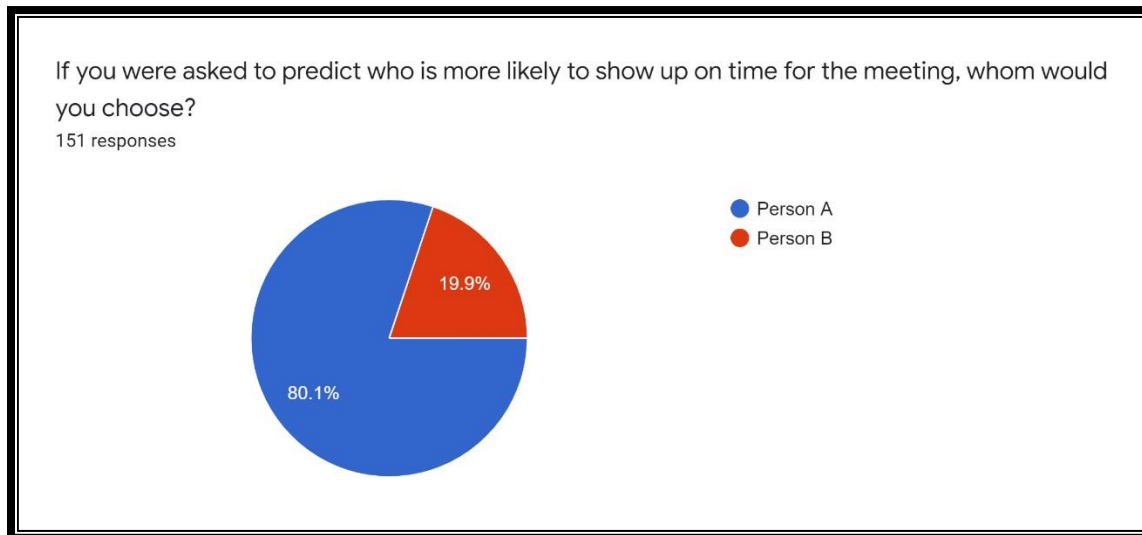
## 8.



### Interpretation-

When asked about their opinion “If you have Rs. 1000 which option would you like to choose? To that 56.3% of the total population from the survey conducted said that they will go ahead with “There is 50% chances of gaining Rs. 1000 and 50% chances of gaining 0.” And the rest 43.7% choose “There is 100% chances of gaining Rs. 500”.

9.



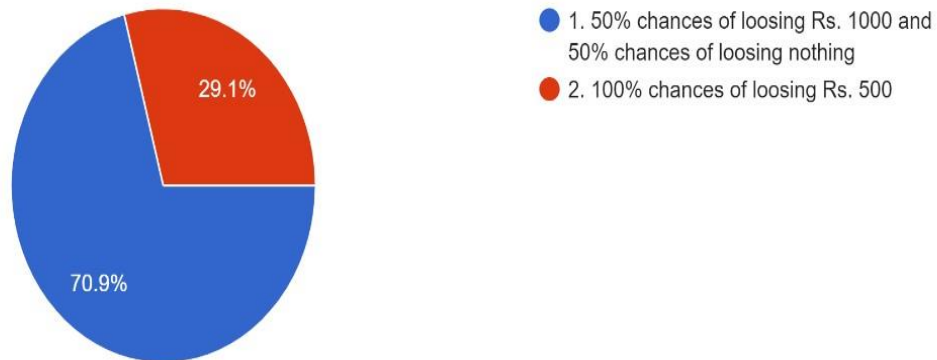
**Interpretation-**

While floating the survey to the respondents we asked to choose one among the two, by showing a picture which depicted two person, one organised and the other one in an disorganised manner as per the picture above to that people choose person A since they go with the representation. It could be analysed that 80.1% of the people who responded to the survey believed on the information which has been presented to them irrespective of the other criteria involved.

## 10.

If you have Rs. 2000 which option would you like to choose?

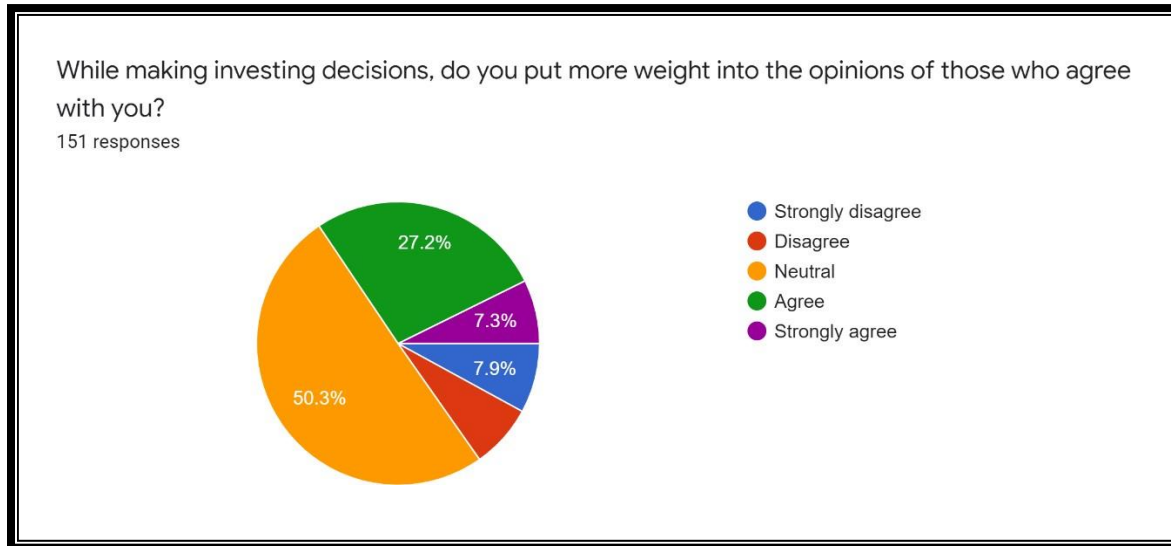
151 responses



### Interpretation-

When asked about the opinion of the investors what “If you have Rs. 2000 which option would you like to choose?” which option among the two whether “50% chances of losing Rs. 1000 and 50% chances of losing nothing” or “100% chances of losing Rs. 500” for that matter 70.9% choose option 1 and the rest 29.1% choose the second option. Investors value gains and losses differently, placing more weight on perceived gains versus perceived losses. It's useful for investors to understand their biases, where losses tend to cause greater emotional impact than the equivalent gain.

11.



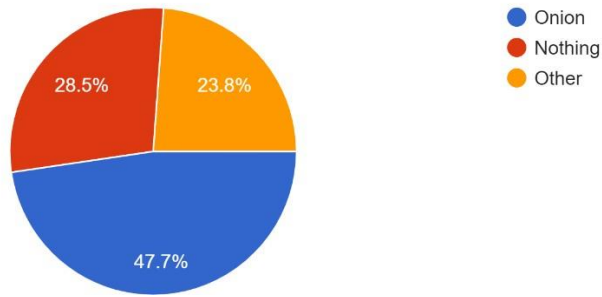
**Interpretation-**

While doing the survey there was a question which had been asked to the respondents as to while making investing decisions do they put more weight in opinions of people who agree with them for that 50.3% of the total respondents choose neutral, 27.2% agreed to the statement while 7.9% of them strongly disagreed, 7.3% of them strongly agreed and the rest disagreed to the statement framed above. Which means that half of the people merely agreed to the statement that the put weight in opinions of those who agree with them while making an investing decision.

12.

If you can recall many times that onion was the free ingredient, thus what would you expect in the third option?

151 responses



**Interpretation-**

There was an image showcased along with this question while floating the survey as per the image above, it could be analysed that 47.7% of the total population considered for survey believe that onion would be the third ingredient. The rest 28.5% of the respondents believe that

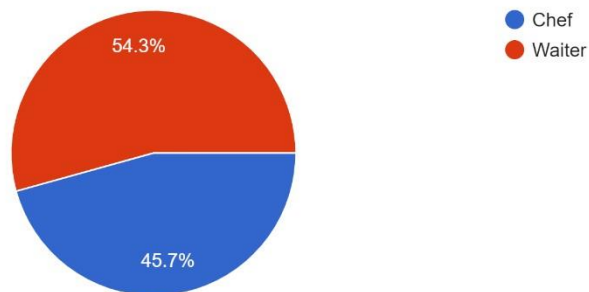
27

there could be nothing in the third box whereas the rest 23.8% believed that it could be anything in the third one. It could be analysed that most of the general investors go as per the information as per the past trends and then take a decision based on the same. Since the first two boxes had information and hence the third one would also be on the same.

13.

Sam is one of the staff below, he is experiencing cleaning dishes and presenting items in an artistic manner and has great social skills, What profession do you think Sam is into from the picture below?

151 responses



**Interpretation-**

There was an image showcased along with this question while floating the survey as per the image above, the question was asked by the investors. As per the image depiction, 45.7% choose Chef and the rest 54.3% considered him to be a waiter. It could be analysed that the investors take decisions as per the information which is available. As per the above image the options which is available is Chef and Waiter but since most of them went ahead with the available

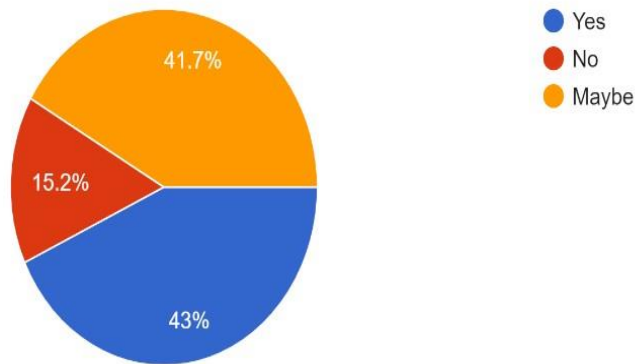
information provided in the statement (question) they chose Waiter.



**14.**

If you are working in a pharmaceutical industry. Will you trade within that sector at a higher level than other traders?

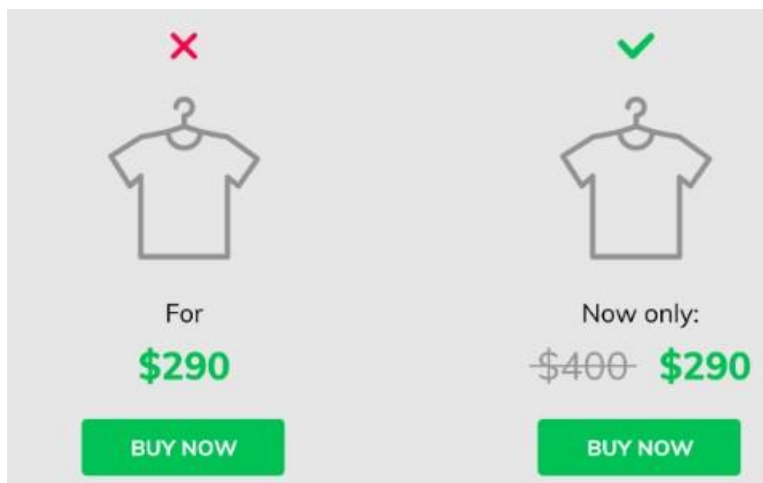
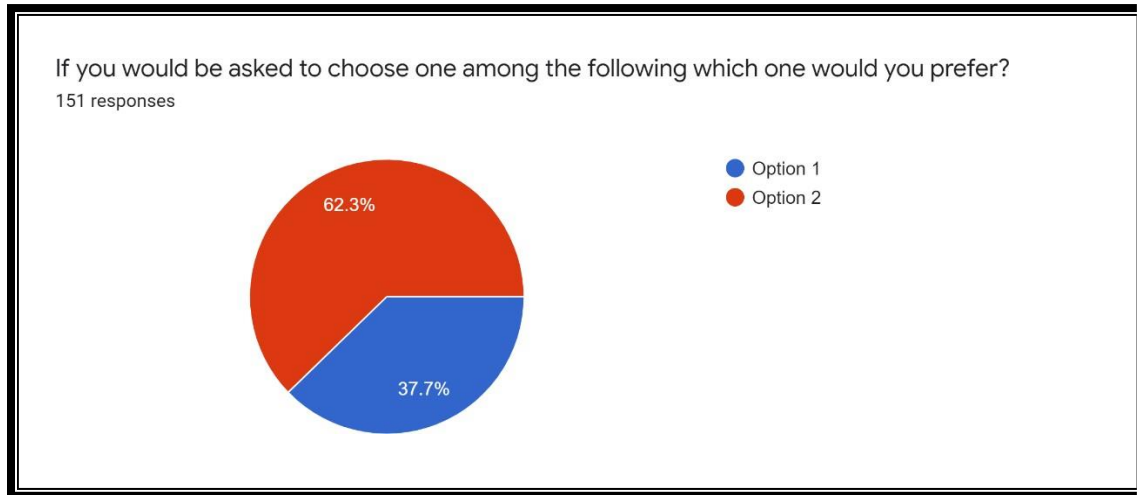
151 responses



**Interpretation-**

Respondents were asked whether they would find suitable in investing in the sector they are working in, which they have a better understanding and well known about the shares facts and figures to that 43% of the investors choosed yes, 41.7% of the total respondents choosed “may be” and the rest 15.2% went ahead with a no. This showcases the overconfidence bias the investors go through wherein they are very confident that the shares will grow. The sector which they are into. As after covid we could see a boom in pharmaceutical companies.

15.



**Interpretation-**

The respondents were asked to choose one among the following picture showcased above. From the above graph it could be analysed that 62.2% of the total population out of 151 respondents,

choosed option B and the rest 37.7% choosed option A which means that as per the data presented the investors take a decision based on the information presented to them. In the above picture since the second option is presented in more tempting manner the customers get inclined towards that more when compared to the first one. And hence framing bias comes into the picture.

## **HYPOTHESIS TESTING:**

1. In order to find the relation between different variables, we have done hypothesis testing. We tried to find if there is any link between the age of the investor and loss aversion bias. For this, we used responses to “If you have Rs. 1000 which option would you like to choose?” question wherein, the options given to the investors are - There is 50% chance of gaining Rs. 1000 and 50% chances of gaining 0 or There are 100% chances of gaining Rs. 500. The mode used is excel and the test done is “ANOVA TEST” single factor.

## **CODING USED FOR TEST:**

<i>AGE GROUP</i>	<i>CODE NUMBERS</i>
<b>18-25</b>	1
<b>26-30</b>	2
<b>30-40</b>	3
<b>Above 40</b>	4

<i>OPTIONS GIVEN</i>	<i>CODE NUMBER S</i>
<b>There is 50% chance of gaining Rs. 1000</b>	1

and 50% chances of gaining 0.	
There is a 100% chance of gaining Rs. 500	2

**Step 1: H0:** There is no significant difference between loss aversion bias and age group

**H1:** There is a significant difference between loss aversion bias and age group.

**Step 2:** level of significance ( $\alpha$ ): 0.05.

**Step 3:** ANOVA TEST

Independent variable (IV): Age

Dependent Variable (DV): Loss aversion bias.

□ Step 4 & 5:

<i>SUMMARY</i>						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
18-25	119	187	1.57	0.25		
26-30	22	31	1.41	0.25		
30-40	7	12	1.71	0.24		
above 40	4	7	1.75	0.25		
 <i>ANOVA</i>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0.827	3.000	0.276	1.114	0.345	2.666
Within Groups	36.640	148.000	0.248			
Total	37.467	151.000				

□ Step 6: USING CRITICAL VALUE AND P-VALUE APPROACH:

<i>Critical value approach</i>	
abs(cal)	1.114
abs(tab)	2.666

<i>p-value approach</i>	
p-value	0.345
level of significance	0.050

- **DECISION MAKING:** - As per the critical approach: As the calculated is 1.114 which is less than the tabulated value i.e., 2.667, we accept null hypothesis that says “there is no significant difference/ relation between age group and loss aversion bias”.



As per the p-value approach: As the p-value is 0.345 is greater than the level of significance i.e. 0.05, we accept null hypothesis that says “there is no significant difference/ relation between age group and loss aversion bias”.

Thus, we can conclude that what age group you are in doesn’t matter. People of every age group show the traits of loss aversion bias and investors prefer sure gains as compared to probable losses.

2. Further, we tried to find if there is any link between How long have investor attended the stock market? and overconfidence bias. We are trying to draw the result that whether with the increase in years spent by an investor in stock markets makes them feel overconfident about their investment decision or not. For this, we used responses to “If you are working in a pharmaceutical industry. Will you trade within that sector at a higher level than other traders?” ques wherein, the options given to the investors are – Yes, No, maybe. The mode used is excel and the test done is “ANOVA TEST” single factor.

**CODING USED FOR TEST:**

<i>TENURE IN STOCK MARKET</i>	<i>CODE NUMBERS</i>
<b>Under 1 year</b>	1
<b>1 - under 3 years</b>	2
<b>3 - under 5</b>	3

<b>years</b>	
<b>5- under 10 years</b>	4
<b>Over 10 years</b>	5

<b>INVESTOR DECISION (OVERCONFIDENCE)</b>	<b>CODE NUMBERS</b>
<b>Yes</b>	1
<b>No</b>	2
<b>May be</b>	3

- **Step 1: H0:** There is no significant difference between overconfidence bias and the time you have attended the stock market

**H1:** There is a significant difference between overconfidence bias and the time you have attended the stock market.

- **Step 2:** level of significance ( $\alpha$ ): 0.05.

- **Step 3:** ANOVA TEST

Independent variable (IV): Time you have attended the stock market

Dependent Variable (DV): Overconfidence bias.

- **Step 4 & 5:**

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### **SUMMARY**

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>
<b>1-3 years</b>	37	66	1.78	0.90
<b>3-5 years</b>	13	29	2.23	0.69
<b>5-10 years</b>	6	16	2.67	0.67
<b>Over 10 years</b>	11	24	2.18	0.96

### **ANOVA**

<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>
<b>Between Groups</b>	5.437	3.000	1.812	<b>2.132</b>	<b>0.105</b>	<b>2.751</b>
<b>Within Groups</b>	53.548	63.000	0.850			
<b>Total</b>	<b>58.985</b>	<b>66.000</b>				

□ **Step 6: USING CRITICAL VALUE AND P-VALUE APPROACH:**

<i>Critical value approach</i>	
<b>abs(cal)</b>	2.132
<b>abs(tab)</b>	2.751

<i>p-value approach</i>	
<b>p-value</b>	0.105
<b>level of significance</b>	0.050

- **DECISION MAKING:** - As per the critical approach: As the calculated is 2.132 which is less than the tabulated value i.e., 2.752, we accept null hypothesis that says “There is no significant difference between overconfidence bias and the time you have attended the stock market”.

As per the p-value approach: As the p-value is 0.105 is greater than the level of significance i.e., 0.05, we accept the null hypothesis that says “There is no significant difference between overconfidence bias and the time you have attended the stock market”.

Thus, we can conclude that how much time you spend in the stock market doesn't have any relation with the overconfidence bias as we can also see from the responses that most of the people chose may be option and thus, we can conclude that people show overconfidence bias but doesn't have any relation with the time.

3. Lastly, we tried to find if there is any link between How frequent you have been investing? and occupation of the investor. We are trying to draw the result that whether the occupation impacts the investor's frequency of investing or being active in the market or not. For this, we used responses to “How frequent you have been investing?” ques wherein, the options given to the investors are – Daily, Weekly, Monthly, Semi-annually, annually. The mode used is excel and the test done is “ANOVA TEST” single factor.

**CODING USED FOR TEST:**

<b><i>OCCUPATION</i></b>	<b><i>CODE NUMBERS</i></b>
<b>Student</b>	1
<b>Professional</b>	2
<b>Business</b>	3
<b>Others</b>	4

<i>FREQUENCY</i>	<i>CODE NUMBER</i>
	<i>S</i>
<b>Daily</b>	1
<b>Weekly</b>	2
<b>Monthly</b>	3
<b>Semi-annually</b>	4
<b>Annually</b>	5

- Step 1: H0:** There is no significant relationship between occupation and frequency of investing.

**H1:** There is a significant relationship between occupation and frequency of investing.

- Step 2:** level of significance ( $\alpha$ ): 0.05.
- Step 3:** ANOVA TEST

Independent variable (IV): Occupation

Dependent Variable (DV): Frequency of investing.

□ Step 4 & 5:

**SUMMARY**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
<b>Student</b>	107	379	3.54	1.63
<b>Professional</b>	28	91	3.25	1.82
<b>Business</b>	11	28	2.55	2.07

**ANOVA**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<b>Between Groups</b>	10.804	2.000	5.402	<b>3.185</b>	<b>0.044</b>	<b>3.059</b>
<b>Within Groups</b>	242.538	143.000	1.696			
<b>Total</b>	253.342	145.000				



□ **Step 6: USING CRITICAL VALUE AND P-VALUE APPROACH:**

<i>Critical value approach</i>	
<b>abs(cal)</b>	3.185
<b>abs(tab)</b>	3.059

<i>p-value approach</i>	
<b>p-value</b>	0.044
<b>level of significance</b>	0.050

- **DECISION MAKING:** - As per the critical approach: As the calculated is 3.185 which is greater than the tabulated value i.e., 3.059, we accept the alternate hypothesis that says “There is a significant relationship between occupation and frequency of investing”.

As per the p-value approach: As the p-value is 0.044 is less than the level of significance i.e., 0.05, we accept the alternate hypothesis that says “There is a significant relationship between occupation and frequency of investing”.

Thus, we can conclude that there is a relationship between the occupation and your frequency of investing. As most of the data is collected from students and professionals. We can say that professionals and students attend the stock market more frequently and hence your occupation affects the frequency of your investment as people are educated and can make the decisions better.

## **CONCLUSION:**

The conclusion after the interpretation of the whole data collection and analysis are as follows:

- The study showed that investors show irrational behaviour while taking decisions and try to avoid losses.
- It also indicated that people show all the types of biases that are included in this research.
- Most of the investors we have conducted the research on is in stock market for less than 1 year and still show irrational behaviour while investing.
- The research suggested and tested different variables and their dependency on the biases to find out the relationship between them.
- Due to limited outreach to the people a majority of the respondents belong to a particular set of groups, providing results that are of the same demographic in terms of age bracket and their learning technique.

**Questionnaire link:** <https://forms.gle/GqxWYgi8F47soAWs5>