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# Investment in Stock Markets: A Survey of Behavioural Biases of Individual Investors

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**Abstract**
Behavioural finance refers to the application of socio-psychological theories along with financial theories to describe the patterns of financing that are less rational and objective. The premise of studying behavioural finance is that the presumption of rationality takes a back seat due to psychological biases leading to suboptimal decision making. Such anomalies of a large number of investors put together may disrupt the health of the market and consequently the whole economy. This paper attempts to highlight the anomalies present in the investment decision making of individual investors. A survey was conducted via a questionnaire which was responded to by 63 individuals. The results indicated the presence of confidence bias, loss aversion bias, and familiarity bias largely influenced the investment decisions of the respondents. Respondents perceived their psychological attribute of averting losses to be their most prominent disruption to healthy investment. The pandemic covid-19 did not seem to discourage the investors, they either maintained their investments or demonstrated an increase. This study was in the nature of a pilot survey to assess the current scenario of investment with many leads opening up towards testing established theories and/or creating fresh models that explain the nuances of investment behaviour.

**Keywords:** Behavioural finance, behavioural biases, rational investor, investment decisions

## Introduction

The study of behavioural finance is gaining significance as the sentiments of investors is beginning to have a direct relationship with the investment in turn affecting the economy. The increase in social networking has also contributed immensely to investors' portraying tendencies of herding (Lacalle, 2018; Houlihan & Creamer, 2017; Pineiro-Chousa, Lopez-Cabarcos, & P erez-Pico, 2016; Lopez, 2019) [8, 4, 10] Investor sentiment can be stated as the optimist or the pessimist stance of the investor about the expected stock market behaviour and pattern, in the future (Baker & Wurgler, 2006) [1].

The spate of growth in the financial markets coupled with the burgeoning financial products and the widening investor base, has made it very relevant to study the behaviour of individual investors. The classical theories of finance have not fully explained the behaviour patterns of investors resulting in development of new models that are based on the premise that individual's are not so rational and therefore susceptible to socio-psychological inclinations when making financial decisions. An individual's financial behaviour is largely dependent on internal and external factors consisting of one's thought processes, emotional state and objectives (Ozer, 2019; McCrae and John, 1992) [15, 11]. Individual investors are more prone to be impacted by social and psychological factors besides economic and financial aspects, it therefore becomes imperative to study the mind (decision making process) of the present day investor and the mindfulness with which they make investment decisions. This paper is divided into five sections, the first introduces the concept of finance, behavioural finance and the various biases that impact and evoke investment behaviours and subsequent actions and the role of mindfulness in sound decision making. The second section reviews the available literature, relevant to the topic. The third section describes the research methodology and the technique of data collection. The fourth section analyzes the responses to the questionnaire and the fifth section comprises conclusions and scope for further research.

`Personal finance is the process of planning and managing personal financial activities such as income generation, saving, investing and protection (Kenton, 2021). Quite often people have to rely on personal finance professionals and experts who charge hefty amounts which in itself is a big deterrent. The choice of financial products by individual investors also reflects information about the level of risks that they undertake, the extent of financial responsibility and the timeline that they follow.

Financial literacy has become the order of the day given the sensitivity of the present day, unified world markets and interlinked stock exchanges in a world full of uncertainties, dynamic economies, technological threats, and above all predators and fraudsters. The only recourse left for any sound financial decisions and investment strategies, both for institutions and individuals, lies in equipping oneself with the updated information relating to economy, industry and companies. Building up information infrastructure is possible by means of books, material available online, completing certification courses and attending seminars / webinars on financial literacy. In today's technology driven world, accessing information is no more cumbersome although processing this acquired pool of knowledge to obtain meaningful interpretations still remains a challenge. Another hurdle with a high probability is that of the reader getting lost due to the abundance of information available online.

Given below are some of the anomalies/biases that have been identified from various prevalent theories and serve as a basis for our questionnaire.

**Investment Anomalies**

Any investment decision is not only restricted to the observable complexity of the financial world but also to the underlying world of indeterminacy of the investor. It is when investors undermine the scientific analysis that they fall prey to the irrational world of emotions (Calvin, 2020).

**Prospect Theory**

Kahneman and Tversky in 1979 [6] provided a framework to explain the impact of human behaviour on the level of tolerance while making investments. They propounded that investors put less weightage on the outcomes that were dependent on probability than those that were relatively certain. Another observation by Lebaron (1999) suggested that the possibility of loss caused greater distress than the possibility of satisfaction caused by gains.

The prospects theory can further be bifurcated into four types if anomalies *viz.*, loss aversion, dispositional effect, regret aversion and herding.

**Loss Aversion**

Loss aversion refers to the phenomenon of preponing realization of gains due to the fear of losing the gain, in the process not reaching the optimal level of gains. Shiller (2000) pointed out that people overweigh the consequences of a loss manifold while underestimating the reward of the same size. The pinch of 'real' loss is not felt until it is realized therefore investors continue to hold on to it irrespective of significant increases in losses. Hence, they postpone the emotional upset of the loss till they time they close the trade.

**Disposition Effect**

The disposition effect highlights the tendency of individuals to dispose of stocks that scored well and on the other hand maintain holding of underperforming stocks in the hope that they recover. Shefrin and Statman in 1985 [19] stated the preferences of the people highlighting the dislike for making losses disproportionately higher than their liking for making profits.

**Regret Aversion**

This anomaly finds its place in 'decide in haste and regret in leisure'. Fogel and Berry (2006) relate it to the disposition effect that gets reflected in greater regret by investors on holding an underperforming stock with consequential loss than the loss attributable to the potential gains that were never realized.

**Herding Behaviour**

The Stock market often exhibits mass entrants or exodus which may be due to stock market bullish or bearish trends. Although investors are presumed to be rational but due to lack of information a few of investors' irrational decisions may invite many more to join the herd, resulting in disproportionately high asset values eventually leading to a market crash.

**Overconfidence Bias**

Overconfidence refers to an investor's optimism relating to the correctness about their investment decisions. Such anomalies often result in poor decision making as it has been established that individuals with low level of intelligence and poor interpersonal skills often showcase overconfidence as a cover up of their weakness (Ehrlinger, 2016) [3].

**Confirmation Bias**

Most people while making decisions unconsciously gather information and statistics that support their initial or past choices rather than making a complete review of the prevailing condition. In short, they put less emphasis on information that may possibly challenge their existing views. It has been observed that this bias is more pronounced for emotionally charged issues or closely held beliefs (Noor, 2020) [13]. Although it cannot be eliminated in its entirety, it can be handled by imbibing critical analysis.

The best strategy to counter these biases could be mindfulness indicating greater awareness of the self and the thought process leading to decision making.

**Mindfulness as an Approach to Investment**

'Mindfulness means maintaining a moment by moment awareness of our thoughts, feelings, body sensations and surrounding environment through a gentle nurturing lens' (Mindfulness reprint, n.d.). Mindfulness can be cultivated as a habit and involves acceptance of the present moment and circumstances without any judgement or fear of the past. It has its roots in Buddhist meditation, although it has now spread across the globe and has become more prominent in recent years.

There are five mental forces that are major obstacles in practicing mindfulness *viz.* fear, jealousy, pride, attachment and ignorance. These hindrances are like blackholes in the mind, here a blackhole can be considered as a collapsed star in which light gets stuck in a trap. This analogy is similar to a mind which loses context when trapped in these five mental forces. The role played by mindfulness in overcoming human shortcomings is immense as it enhances focused attention which may be targeted on any activity being performed.

The basic premise is that mindfulness leads to better decisions spreading across arenas of life including financial planning. Mindfulness can often be linked with the state of mind which is further connected to our breathing patterns and techniques. It also concerns adopting specific behaviour patterns and thought processes that wipe out the mentioned hindrances. The mindfulness strategies could range from being intentional to focused attention and acceptance in attitudes which could be categorized as contemplative as to progress onto preparation and action. In view of this the financial tasks would be laying down goals, compiling documents, creating budgets, financial planning, revising and implementing the financial plan (Smith, Richards & Shelton, 2015).

In section two we cover a brief review of literature existing on behavioural finance.

## Section II
## Literature Review

Financial decision making is not as linear and rational as previous traditional models of finance assumed it to be. There are several fallacies that act as barriers in one's ability to engage in logical and mature decision making. Sattar, Toseef and Sattar (2020) [18] conducted a quantitative study to test the role of heuristics (representativeness, anchoring, overconfidence etc.), personality characteristics (extraversion, agreeableness, neuroticism etc), prospect theory components (framing, regret aversion, self-control etc.) and emotions on individuals' investment decision making. The results from the same indicated that all the aforementioned components significantly impact one's investment decisions.

Ozer (2019) [15] studied the effects of personality traits on the individual investor's financial behaviour. The five dimensions of personality that were found significant in impacting financial behaviour were, extraversion, agreeableness, conscientiousness, openness to experience and neuroticism. He applied multiple linear regression analysis and found conscientiousness, openness to experience and agreeableness to affect financial behaviour positively. This result was in consonance with previous studies.

López-Cabarcos, Pérez-Pico, Vázquez-Rodríguez and López-Pérez (2019) [10] conducted research investigating the role of investor sentiment on their investment behaviour using co citation, bibliographic coupling and co-occurrence analysis. Overconfidence, anchoring effect and confirmation bias were given special emphasis while doing this analysis. Their objective was to identify the foundations, authors and journals studying the effect of investor sentiment on behavioural finance between the period 1987- 2017. The results from the analysis showed that investor sentiment is an important concept studied in both traditional and behavioural finance theories. Sattar, Toseef and Sattar (2020) [18] studied the role of several behavioural biases in the investment decisions made in the market. They used regression analysis to investigate the impact of heuristic, prospects and personality characteristics on the investor's behaviour. The results from the same indicated that heuristic behaviour which comprises of several biases like representativeness, overconfidence, anchoring, gambler's fallacy, availability bias, escalation of commitment, hindsight, randomness, herding effect, dispositional effect and home bias has a larger effect on investor's decision making as opposed to the other two processes.

The outbreak of covid -19 has had innumerable repercussions on the lives of people extending to almost all aspects of living. The impact was equally visible in the investment choices made by investors due to the prevailing uncertainty resulting in risk aversive behaviour, a preference for more stable assets and reduction in trading as well reduced market exposure. The press and media also added to the pessimism about the future economy and the general financial markets. Ortmann, Pelster and Wengerek (2020) [14] used OLS regression analysis to study the association between covid -19 outbreak and investor's trading behaviour. The results indicated that there was a significant increase in trading activities as the number of covid-19 cases escalated in the United Kingdom.

The subsequent section presents the research methodology along with the objective of the paper.

## Section III
## Research Methodology

This survey was based on the collection of primary data by way of a closed end questionnaire that was forwarded to a set of 100 people out of which 63 responded. The questionnaire was divided into three sections, the first one pertaining to demographics of the respondents, second was about their investment patterns and the third questioning the behavioural aspect of the respondents.

The objective of the study was to determine 1). The demographics of investors; 2) The investment patterns which included the channels for investment, the source of information for making investment decisions, the factors affecting investment behavior/choices, the length of investment, the duration of investment, and the extent of diversification of the portfolio. 3). To highlight the biases / anomalies and behaviours that obstruct sound financial decision making. 4). To assess the impact of Covid-19 on stock market investments. Section four concises the results of the survey.

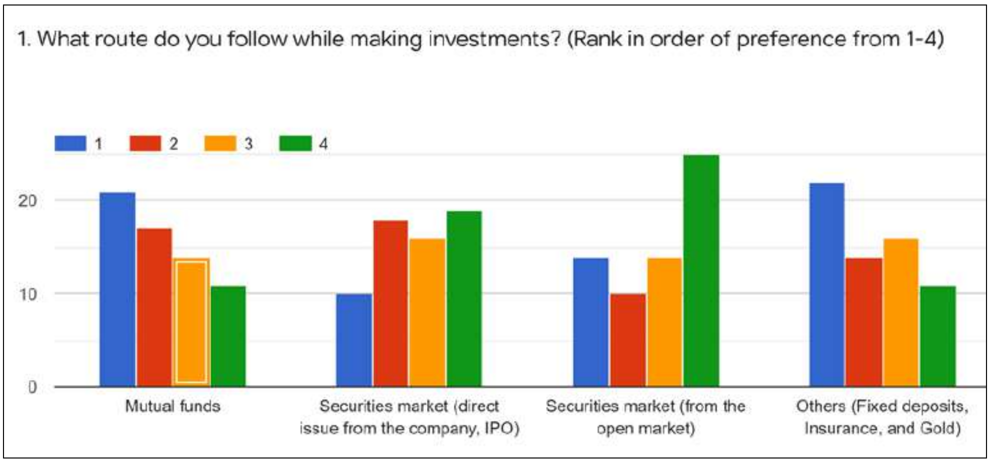
## Section IV
## Results and Discussion

The following section summarises the results of the survey conducted. Table 1 contains the sample characteristics relating to the demographics such as age, gender, marital status, education and occupation.

**Table 1:** Sample characteristics

| | | N(63) | Percentage (%) |
|---|---|---|---|
| Age | 18-25 | 31 | 49.2 |
| | 26-33 | 5 | 7.9 |
| | 34-40 | 9 | 14.3 |
| | 41-50 | 14 | 22.2 |
| | Above 50 | 4 | 6.3 |
| Gender | Male | 44 | 69.8 |
| | Female | 19 | 30.2 |
| | Prefer not to specify | | |
| Marital Status | Married | 27 | 42.9 |
| | Single | 36 | 57.1 |
| Educational Qualification | Graduate | 26 | 41.3 |
| | Postgraduate | 32 | 50.8 |
| | M.Phil / PhD. | 2 | 3.2 |
| | Any other professional qualifications | 3 | 4.8 |
| Occupation | Students | 21 | 33.3 |
| | Self employed | 17 | 27 |
| | Private Job | 17 | 27 |
| | Government Job | 6 | 9.5 |
| | Homemaker | 1 | 1.6 |
| | Retired | 1 | 1.6 |

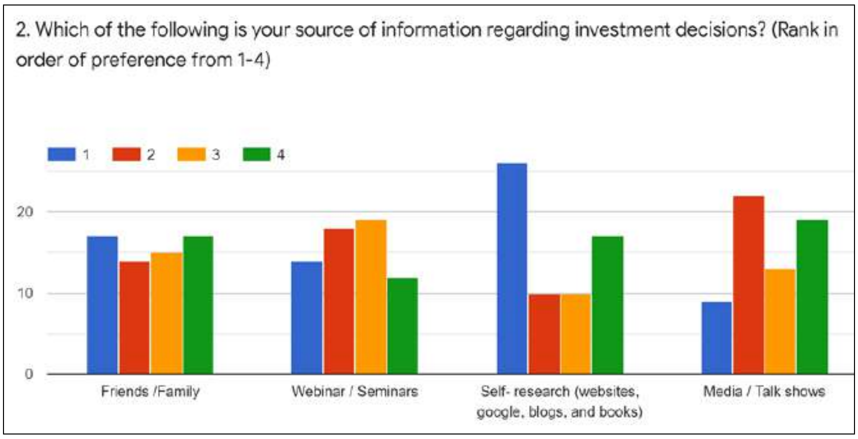
The analysis of the sample on the basis of demographics shows a large number of respondents in the age group of 18-25.This almost accounts for half of the sample while the other 50% fall in the age group ranging from 26 to above 50. The analysis shows that stock market investment is a male dominated arena where they take almost 70% of the chunk of respondents while women remain restricted to 30% only. The category of people who do not prefer to specify showed nil results. Given the fact that most of the respondents belong to the younger category of 18-25, it was not surprising to note that a larger proportion, almost three fifths, were unmarried and/or single. Married people composed two fifths of the sample. While graduates were half in number of the total sample, the rest of the sample belonged to the category of people with higher education. Students comprised one third of the respondents. Almost two thirds were in some form of employment with people in self employed and private job categories sharing the same percentage, while those in government jobs lagged in stock market investments representing hardly 10% of the sample size. Homemakers and retired people did not have much representation in the sample.




**Note:** Others (Fixed deposits, insurance and gold): total count 22, Mutual funds: total count 21, Securities market (direct issue from the company, IPO): total count 18 and, Securities market (from the open market): total count 16.

**Fig 1:** What route do you follow while making investments? (Rank in order of preference from 1-4)

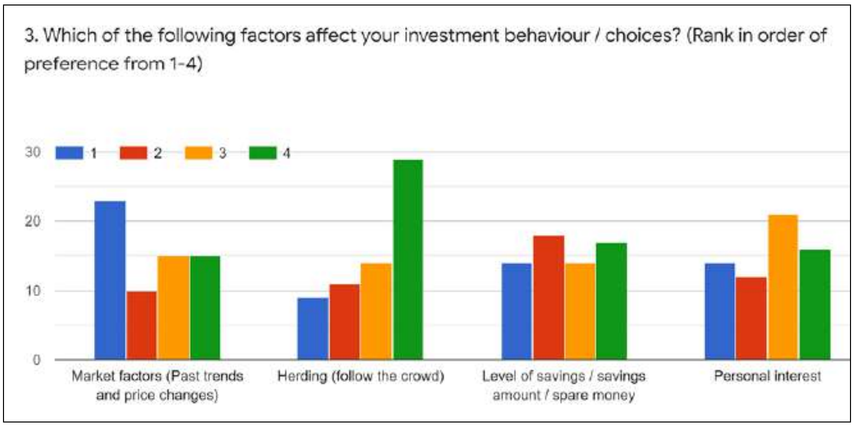
The above bar chart highlights the avenues for investment most popular amongst the respondents was investments in the traditional form such as fixed deposits, insurance and goal in the category of ‘others’ representing more than one third (34.9%) of the sample. Mutual funds were at close quarters with exactly one third (33.3%) of the sample choosing the same. Purchase of securities directly for the company accounted for 28.5% of the responses and purchase of the shares from the secondary open market was the last option in preference of the respondents comprising 25.3%. This layout of investment pattern shows the greater preference for more traditional and secured form of investments vis a vis the route via open market operations.




**Note:** Self research (websites, google, blogs and books): total count 26, Media/ Talk shows: total count 22, Webinar/ Seminars: total count 19 and Friends/ family: total count 17.

**Fig 2:** Which of the following is your source of information regarding investment decisions? (Rank in order of preference from 1-4)

In the following paragraph rank in the order of preference of sources from where information related to investments was collected and processed. At the top stood 'self research' from sources such as websites, google, blogs and books totaling to 41.26% of the sample. Whereas 'media/talk shows' grabbed the second position with 34.92% of the responses. 'Webinars/ Seminars' attracted about 30% of the respondents to invest in the securities market. Surprisingly, the last category of 'friends/family' constituted only 26.9% of the sample which may be indicative of less reliance on personal relations for investment purposes and greater dependence on more public/professional opinion.




**Note:** Market factors (past trends and price changes): total count 23, Level of savings/ savings amount/ spare money: total count 18, Personal interest: total count 21 and Herding (follow the crowd): total count 29.

**Fig 3:** Which of the following factors affect your investment behaviour / choices? (Rank in order of preference from 1-4)

The historical trends on the past price changes constituted the first preference amounting to 36.50%. This was followed by the availability of funds for investments dependent on the level of savings. The third rank was attributable to personal preference/interest amounting to exactly one third (33.33%) of the respondents. The tendency of masses to follow the crowd referred to as herding was listed as the fourth preference by 46% of the sample.

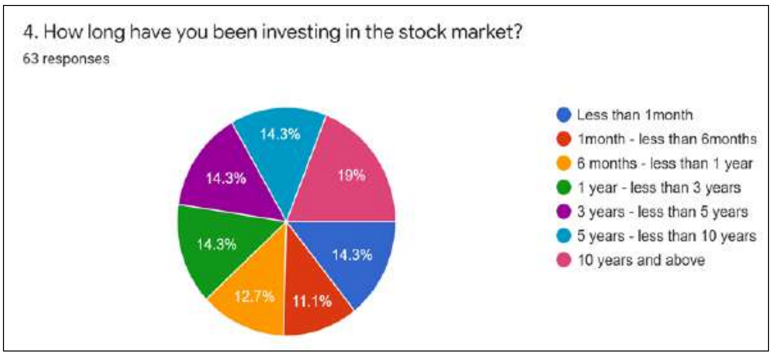



**Fig 4:** How long have you been investing in the stock market?

38.1% of the sample fell in the category of investors less than 1 year old. 28.6% of the respondents have been investors for a time period ranging from 1 year to less than 5 years. Exactly one third of the respondents (33.3%) were long term investors.

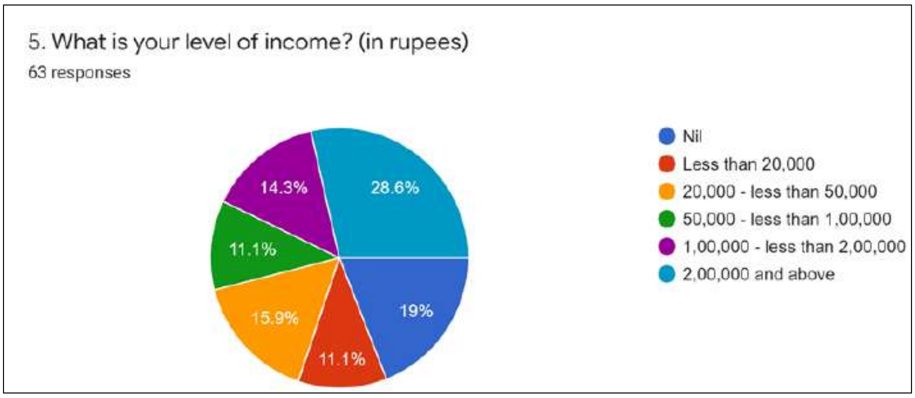



**Fig 5:** What is your level of income? (in rupees)

The results indicate that respondents with 0 income to the tune of 19% were engaged in investment activities. Indicating the growing interest of presumably students and youngsters in the arena often demarcated for earning adults.

27% of the sample lay in the low income bracket of up to less than 50,000 rupees. 25.4% of the respondents were in the income bracket of 50,000 - less than 2 lakh rupees. The last category of high income constituted 28.6% of the total sample. We can conclude that the sample was more or less equally distributed amongst all the income categories. It also indicates that stock markets are equally available for all, although the amount of investment may vary for some to avail financial opportunities that the stock markets offer.

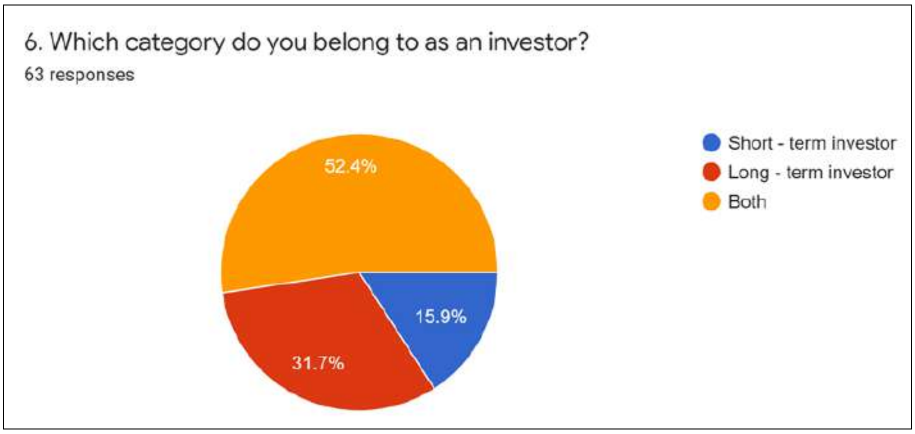



**Fig 6:** Which category do you belong to as an investor?

The sample exhibits more than 50% of the investors to be matured enough to diversify their investments with both long and short term investments. One third restricting themselves to just long term investments and only 15.9% indulging in short term prospects of the stock markets.

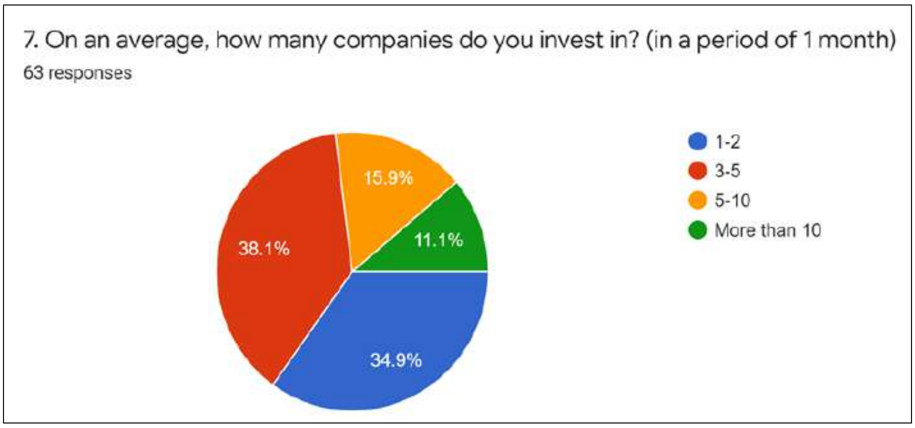



**Fig 7:** On an average, how many companies do you invest in? (in a period of 1 month)

The respondents falling in the category of number of companies invested in ranging from 1-5 were almost three fourths (73%) of the total sample while only 27% that was less than one third adopted diversification at least in terms of the number of companies ranging from 5 to more than 10.

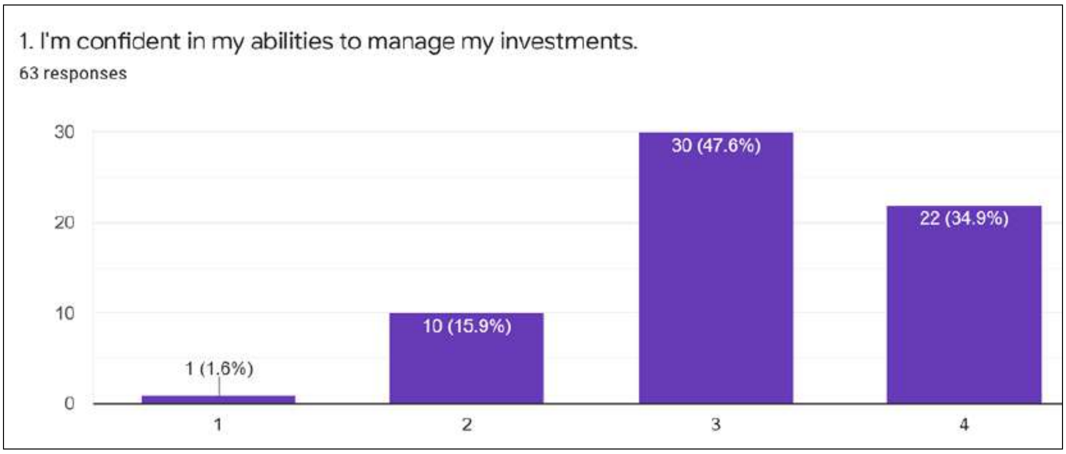



**Fig 8:** I'm confident in my abilities to manage my investments

82.5% of the sample believed that they were confident about their potential and capabilities to manage their investments while a mere 17.5% were hesitant about the decisions relating to managing their investments. This is indicative of the presence of overconfidence bias as discussed in the introduction.

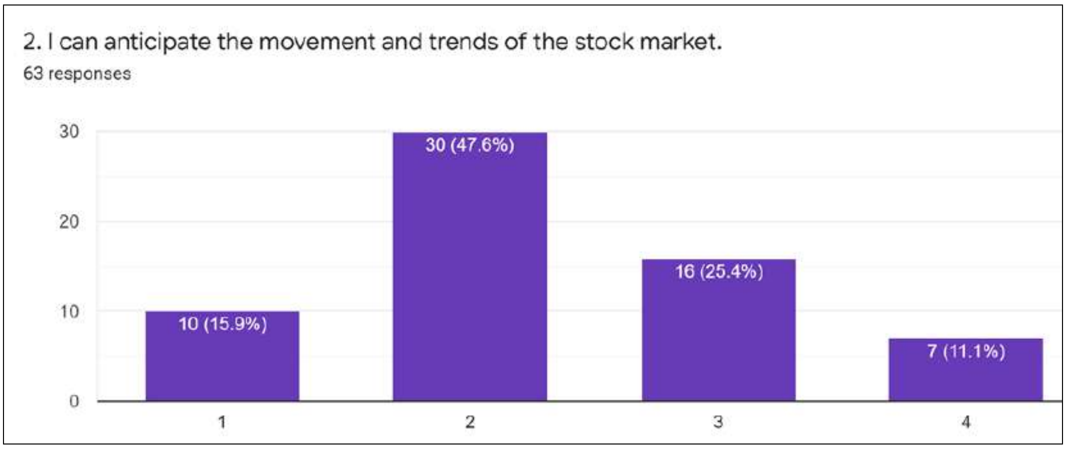



**Fig 9:** I can anticipate the movement and trends of the stock market

Almost two thirds (63.5%) of the respondents knew about the uncertainty of the stock market and therefore were wary about anticipating any trends. Whereas, almost one third i.e 36.5%assumed that they had the acumen to chart out the movement of the market and take supportive actions.

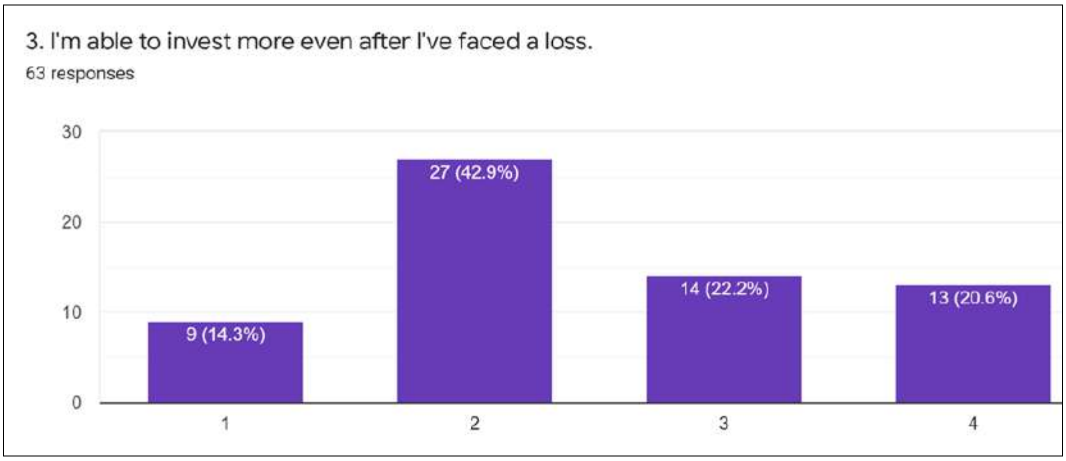



**Fig 10:** I'm able to invest more even after I've faced a loss

There was a small difference in the percent of respondents who did not opt for further investments after having faced a loss and those who were immune to the losses and continued to invest. 57.2% of the sample showed changes in investment patterns after having suffered a loss by becoming more conservative in their investments while 42.8% were willing to take risks irrespective of losing money in the stock market.

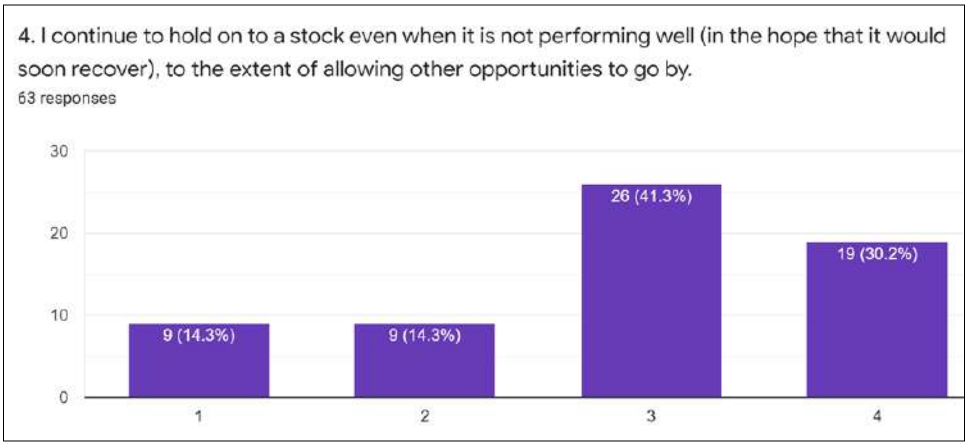



**Fig 11:** I continue to hold on to a stock even when it is not performing well (in the hope that it would soon recover), to the extent of allowing other opportunities to go by

Aversion to loss seems to be the ideology behind all investments encouraging 71.5% of the respondents to hold the stocks in the hope that the prices in the market may recover. Whereas, 28.6% were more practical in their approach of switching over to other opportunities rather than latching on to the underperforming stocks.

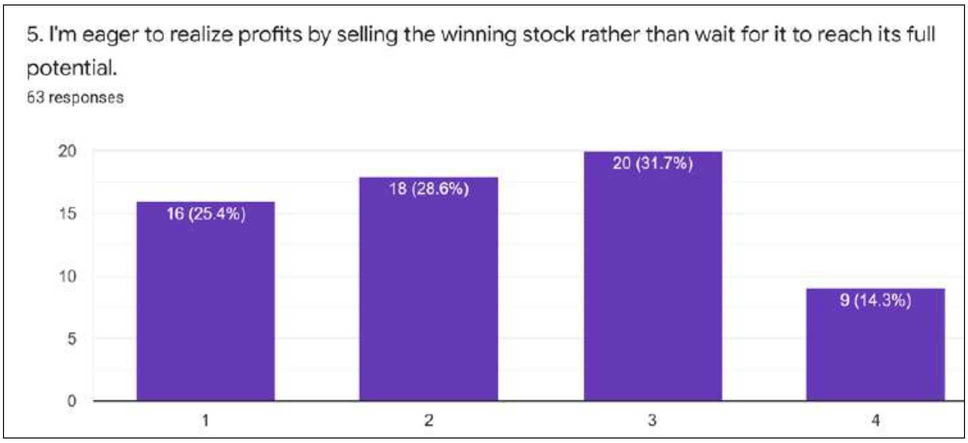



**Fig 12:** I'm eager to realize profits by selling the winning stock rather than wait for it to reach its full potential

The respondents were almost equally divided in their outlook towards booking profits to the tune of 46% vis a vis 54% who were probably long term investors or wanted to optimize their profits.

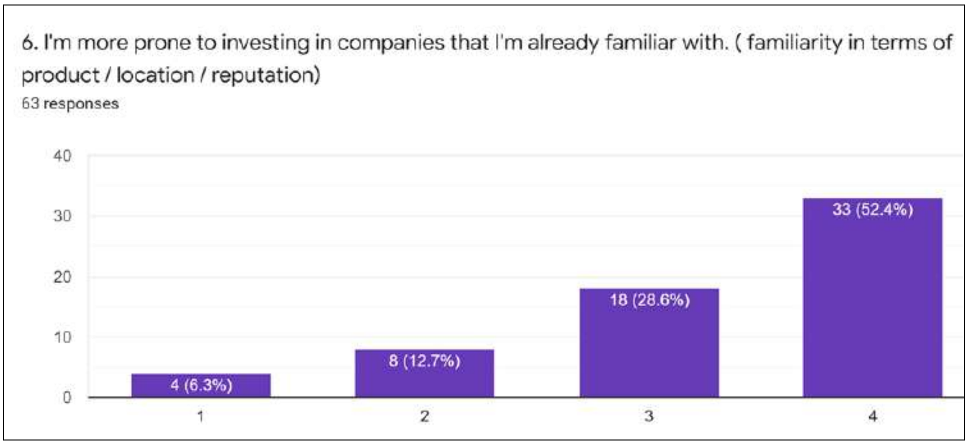



**Fig 13:** I'M more prone to investing in companies that I'm already familiar with. (Familiarity in terms of product / location / reputation)

The major chunk of investors (81%) in the sample felt safer and more confident about investments in familiar products/territories or products of repute in contrast to 19% who ventured out into unfamiliar products and territories. This represents the occurrence of familiarity bias which prompts investors to remain in familiar zones of investments omitting out other potential opportunities.

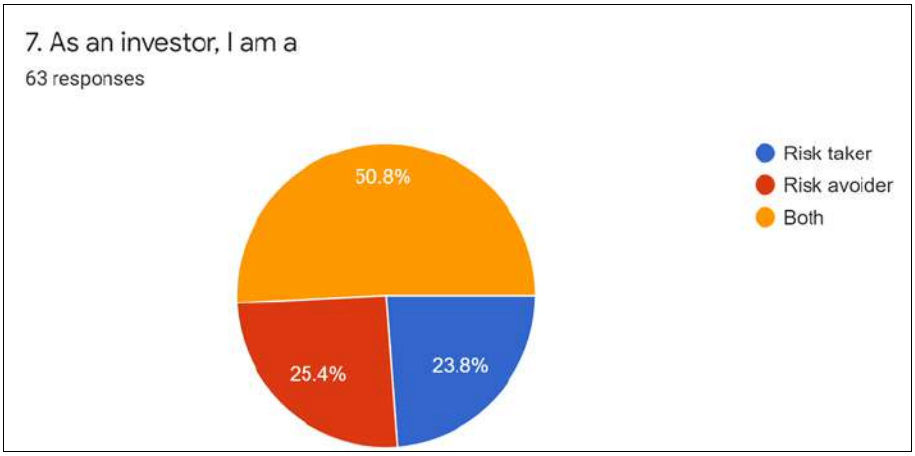



**Fig 14:** As an investor, I am a

Almost one fourth of the respondents (23.8%) categorized themselves as risk takers while another one fourth (25.4%) thought themselves to be risk avoiders totaling to 50% of the sample size. The other half (50.8%) of the sample were selectively risk seekers or avoiders depending on personal or financial reasons.

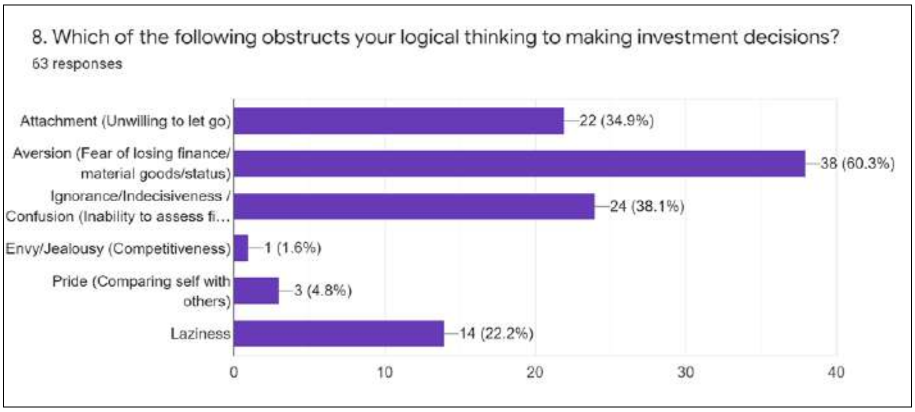



**Fig 15:** Which of the following obstructs your logical thinking to making investment decisions?

Within the group of individual ranking of the psychological anomalies to rational decision making, loss aversion topped the list with 60.3% of the respondents admitting to it. Ignorance and attachment followed the same with 38.1% and 34.9% respectively. About one fourth of the sample (22.2%) also listed laziness as an element causing bias in their decision making. Envy, jealousy and pride together comprised merely 6.4% of the sample set.

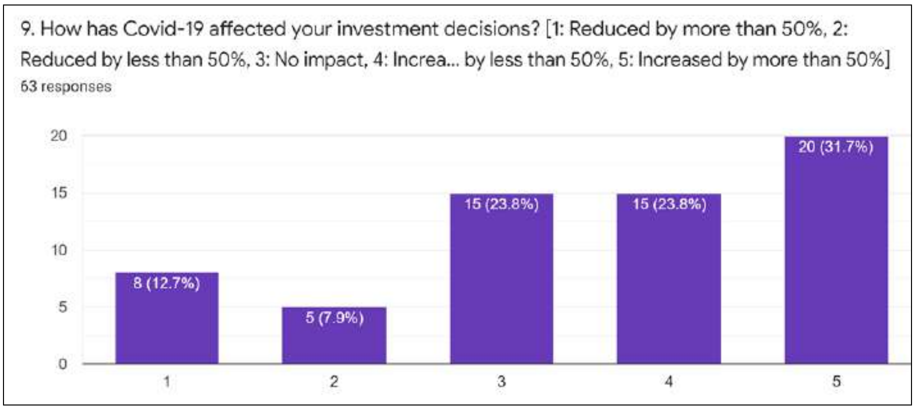



**Fig 16:** How has Covid-19 affected your investment decisions? (1: Reduced by more than 50%. 2: Reduced by less than 50%, 3: No impact. 4: Increa... by less than 50%, 5: Increased by more than 50%)

More than three fourth (79.3%) of the sample declared no impact or a substantive increase of more than 50% in their investments during the outbreak of the pandemic. Meanwhile 20.6% of the respondents reported a decrease in their investments during the same time period.

**Section V**

**Conclusion**

Behavioural finance signifies the presence of psychological biases and their impact on investment decision making. In the past the traditional theories in finance were developed to make rational financial decisions but were unable to foresee and imbibe the impact of behavioural anomalies, resulting in disruption of the stock market.

The role of financial advisors cannot be undermined as they play an important role in providing information to investors resulting in less uncertainties and reduced fear of making wrong decisions. They could also provide consultations relating to strategies in finance that cater to the investor's perspectives and personality. Likewise the relevance of Institutional investors who through their schemes create investment portfolios that accommodate the choices and requirements of investors.

From our sample, we have concluded that open market purchases feature as the least preferred means of investment. Most investors relied on self gathered information through research conducted online and made both- short term and long term investments. The anomalies that largely marred the decision making of the investors were the confidence bias, loss aversion bias and the familiarity bias. Besides these, the biggest obstructions were aversion to loss, ignorance/indecisiveness and attachment. Lastly Covid -19 seemed to have triggered the investment in stock markets positively.

The results of the survey indicate the presence of a relationship between lack of mindfulness (presence of emotions/sentiments) and investor behaviour in the stock market. The data collected and analyzed corroborates the relevance of mindfulness in taking rational decisions. Further, more in depth studies may be conducted to assess and analyze the other emotional, social and psychological variables that impact the relationship between investor behaviour and stock markets. Besides this another limitation of this survey is that no behavioural finance theory was tested nor did it lead to creation of any theoretical model.

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