

# Understanding Investors Behaviour Based On Changing Market Scenario Due to COVID-19

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## Abstract

COVID-19 has created a misbalance in the global economy by affecting multiple sectors. It has also affected the mindset and, consequently, the behavior of economic agents, one of whom is the investors. This study aims to learn about investors' investment behavior in COVID-19 by looking at their preferred sources of information, which influence investment decisions, and their preferred investment avenues. A deep learning model is also proposed for accurately predicting stock market movement. For this study, data was collected from 50 investors. Factors such as the respondents' age, salary, educational background, investment experience, and income were considered when selecting the sample. According to the findings, most investors trust modern investment vehicles such as stocks and mutual funds. For most investors, liquidity and fund safety have emerged as the most important factors influencing their investment goals. A deep learning model proposed is a combination of CNN network plus bidirectional LSTM network.

## Keywords

COVID-19, Investment, Investment Behavior, Income, Liquidity

## Imprint

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## Introduction

Disruptions have happened, and new trends have emerged. Changes are evident as we could see a new era of financial technology is emerging in the Indian context. New trends, dimensions, patterns of thinking

have emerged, which would impact far deep future is promising. There are challenges and issues as the financial world impacted by the technological world has changed and modified due to the COVID-19 crisis [1]. A new world has emerged out of the crisis, and this world is very challenging and very odd, which cannot be described or understood. The pandemic has struck the world, and Charles Dickens as rightly describes it:

“It was the best of the times; it was the worst of the times.” – Charles Dickens.

These words appropriately define and provide us with an understanding of the modern environment prevailing in this world today. A new pandemic has struck us, which has redefined our way of living and understanding of it. New norms, procedures, rules, and regulations have come into force. Lockdown, isolation, social distancing have become new forms of order. There is fear, anguish, and anxiety as our existing values could be modified in today's context [2]. How do we face this epidemic? How do we adapt ourselves to these new situations? What new strategies could be formulated to manage this new way of life? What solutions can be provided to us? What can we do about this? How do we adapt to these changes and overcome our anxieties, fears, and phobias surrounding us?

These fears and phobias have also impacted the entire domain of finance and its effective management. Mc Kinsey and company's report has evaluated and concluded that the output and productivity of each industry are bound to be affected negatively to the extent of almost 70% due to this pandemic, which is huge indeed.

The Indian financial markets are one of the world's biggest markets providing innovative financial solutions, products, and services for millions across the country and worldwide. In this country, investors on a day-to-day basis invest in stocks, buy-sell, and regular Intra and inter-day trading for millions of USD. However, indeed there has been no effective empirical model, software, or program, which has been designed to manage these tough, complex, and challenging phenomena [3].

Biyalogorsky and Gerstner have said that investors' choices also depend on the various types of products and services, which are available, and each product and feature has its own associated risk in the process. We could find here that the nature, period, and mode

of investments and the returns gained, expected – the inner psychological need or pattern or expectations of investor has not been effectively understood or empirically studied effectively, enhancing predictions.

A study had been conducted by Horan on the role of the external environment & had concluded that the environment plays a crucial role in investors' future investment patterns. Therefore, there is a need to analyze and determine the role and impact of the technological environment and its effects on investors, investment modes & patterns, which are bound to change [4].

An evaluative study had been conducted by Diet Vorst, Simmons, and Massey. It had concluded that the modern investment behavior of investors in India, their attitudes and perceptions can no longer be effectively predicted or their behavior to be forecasted.

As the current pandemic, COVID-19 has changed investor perception, attitude, and behavior (dependent variable). Therefore, when there is a change in the financial markets and performances due to COVID-19, this would also impact the investor behavior and patterns of investing, which could be positive, negative, and no effects. This study will try to find out how the pandemic affects investor and their investment behavior [5].

## Literature review

Kannadhasan has conducted a study to evaluate the nature and mode of investments prevalent over the last few decades. The conventional investment decision-makers are rational by nature and tend to take long-term decisions and orientations regarding investments. They do not have any bias about the future, and biases on investments do not influence them. Their mode of operations, procedures, and implementable mechanisms operate differently from conventional investors.

The investors take rational and long-term decisions, which are economically feasible and operate able on each occasion. The decisions are short-term, with quick returns, but the risks are more in certain investments.

During the last century and in the early periods of this century, the investors were largely conservative to a larger and greater extent. The predominant and conventional forms of investments are gold, real estate, and fixed deposits in banks. The turns and twists of the century had made the investor rational. They started exploring other modes of investments like stock market trading and commodity investments [6].

Thaler has categorically said that the nature of individual investments is taken into cognizance with the extent of risk, which is taken. Risk lovers who look for diversified new portfolios alter their choices, generate new ideas, and provide fresh thinking in individual investments.

Although we could find that risk-loving perspective is there in investors since time immemorial, however, they do not want to be fast and agile in taking their decisions are investing their money. They want empirical models, methods, and techniques to evaluate and classify their financial risks so that they can take appropriate decisions. Therefore, many types of research on current empirical models are required, which can help us assess investors' financial behavior. Work is also required to find out about the shift in the viewpoint of modern investors because of COVID-19.

It was discussed and evaluated by Nofsinger, John regarding modern investors and says that they are momentous, spontaneous with emotions raised for short-term gains, profits, and success.

They are immediate in their decisions, and they are very bothered about the long term in their decision. They intend to take very high risk as it also provides them with good returns. There are individual factors, which tend to prevail on the economic and investment decisions among these modern investors to a larger and greater extent [7].

Even though investors are willing to take high risks, there are no assured returns or safe returns for individual investors. Therefore, there is a need to develop models and frameworks, which can provide safe and assured returns.

Harlow and Brown have said that although various individual factors primordially decide on the nature and extent of investment made and returns obtained, the study concluded that there tends to be a specific and special mechanism that prevails with all these individual investors.

As this study states that other than risk and returns factors, various factors also influence investors' financial behavior. These are very important factors by nature – gender and income and their role in financial investment behavior have to be studied in the Indian context today with the COVID-19 crisis. In India, we lack regional studies on investor behavior, patterns and modes of investments. More studies that are empirical have to be conducted in these dimensions [8].

## Factors influencing individual investment behavior and practices

A study had been conducted by Ajmi assessing and analyzing the behavior of individual investors and their risk tolerance among 1,500 respondents. The analysis showed people to be less risk-averse than women. Investors with fewer experiences are less inclined to seek chances on assets. The research also found that age is a significant element in the management of expenditure and operation. In this study, the conceptual model for individual investor decision-making and the factors that affect the entire process is provided below.

This study postulates various hypotheses, which have to be tested in the Indian context and situations. The individual extent of risk-taking behavior and risk tolerance behavior in investments has to be examined and evaluated. Educational level and its impact on individual investment behavior have to be assessed. Gender and investment behavior is a factor, which has been empirically studied to a very less extent in India and has to be done.

A study had been conducted by De Bondt et al. on the New York stock exchange and had addressed the challenge of whether the New York stock exchange overreacts. The study concluded that cognitive biases and bad news over a period could negatively affect pricing in these exchanges. Information and management are crucial for investors and their investment behavior, which has to be managed very effectively.

Stock markets all over the world function on mass sentiments, decisions, and momentary impulsive decisions. The nature and extent of mass sentiments and how it affects India's investor behavior must be empirically studied. The prevailing biases and perceptions in individual investors in Indian stock markets have to be empirically studied. The roles of emotion and cognitive biases & family, which influence investors, have to be examined in depth [9].

From 1998 to 2008, Economou, Kostakis, and Philippas (2010) conducted a study to determine investor behavior by analyzing investment patterns and modes in the Greek, Italian, Spanish, and Portuguese stock markets. According to the findings, there is asymmetric behavior and correlations among return volatility, trade volume, and market returns.

The research was carried out by Engin Demirel et al. to determine the nature and type of relationships that exist between gender and investment patterns. According to the study, financial behavior impacts

overreaction, herding, cognitive behavior, and irrational thinking.

An evaluation had been made by Merikas et al. on the Greek stock exchange and has concluded that investor stock purchase decisions are associated with economic factors and other variables. There is a positive correlation of behavior finance theory with other variables, which concludes that there are factors of influence for an average investor.

The economic factor and the economic capabilities of individual investors and their role in individual investing and patterns have to be dissected in depth.

A study had been conducted by Kaleem, Wajid, and Hussain on the Pakistani stock exchange. It concluded that a positive association exists between ages; income, gender, language, and educational orientation affect individual investment decisions [10].

The role of income and Individual investor behavior in India is a novel dimension yet explored in India. Studies have to be conducted on educational orientations and their impact on individual investors' financial behavior in India.

A study had been conducted by Geetha and Ramesh and found that demography has an important role to play in influencing investment decisions, and other elements or factors did not have a major impact on the entire process.

The role of demographic factors like age, income, number of persons in the family, disposable income, and its impact on individual investing has not been studied, which has to be done in India.

Alleyne and Broome had conducted an evaluator study to determine the position of planned behavior theory and risk propensity among students who would grow as potential investors. The study concluded that the theory of planned behavior had a significant impact on investments.

Students worldwide are a potential group of investors. Their nature and pattern of investments and interests have never been attempted in India. There is a need to understand and evaluate the role of students and their contributions to investments in the Indian stock market, which has to be done as an empirical study.

The study also found that attitude, reference groups, potential obstacles, and opportunities enabled predicting potential investors' intentions. The influencing role of friends & relatives with easy access to funds enables us to know investors' potential and their investment pattern among students [11].

Nagy and Obenberger had done a study to evaluate the various factors, which influence investor decisions. A questionnaire was developed for evaluating the decision-making patterns of individual investors using 34 questions. For investors, the maximization of wealth is the most important criterion; brokerage houses, private equity traders, family members, and co-workers have a major impact on the company and the successful strategic decisions to function and run.

Increasing returns and benefits are the essential criteria for individual investors in India instead of investors in the above-mentioned report. It is important to research the role of co-workers in investment decisions, the type of decisions made, and their impact.

Rakesh has found that investors do not find themselves investing across all asset and investment-related choices. They utilize prudence and wisdom in these choices. They trade aggressively, keeping in mind their past performances and stocks past performance as a key indicator in the entire process of investing.

Mittal and Vyas researched how investment preferences are primarily affected by demographic characteristics. This knowledge would enable financial advisors to provide the right kind of inputs and knowledge to investors. The salaried class has a general preference for equity and mutual funds.

The investors' moods, sentiments, and choices that prevail in the Indian stock market have to be properly understood based on empirical data. Major patterns and behavior are known and evident. However, small minor indicators, which play a role in the investor patterns, have to be analyzed and inferred [12].

It was analyzed and said by Lamm that when calculating risk-adjusted returns, the structure of risky equity assets commands preferences in traditional bonds and premium portfolios. Flexible investment agreements may replace securities and capital as a prudent mechanism as risk costs decline, particularly where speculations on supporting assets are used.

The risks and irking influences on returns and the extent of returns, patterns, and behavior have to be systematically studied and documented in the Indian context.

It was said by Clare et al. that using rules centered on strength; we consider that growth will beat all virtually indistinguishable buying and keeping types and value theory types, a result that is probably unbelievable for thoughts on the cost of trading. Buying and holding for a period is a long-term investment strate-

gy. Its implications on modern investors and their investment patterns have to be examined.

Demography is a crucial, significant determinant of intergenerational differences in the outcomes of retirement planning, according to Nejadmalayeri, who found that the relative size of aggregate savers as measured by the middle age to young population ratio is a crucial, significant determinant of intergenerational differences in the outcomes of retirement planning. In their retirement portfolios, savers should use demography to determine the weight of asset classes, especially if they do not have a long time to plan.

Real estate betas were discussed by Mladina and the implications of asset allocation for investors. For an individual investor, asset allocation is a critical component. It is necessary to assess and examine the role and impact of various factors and their contributions to it [13].

## Research gap

Although research studies have been conducted by various researchers using a linear algorithm to predict the investor and their financial behavior, we do not find any specific study, which can predict their financial behavior amidst COVID-19 situations.

In the COVID-19 situation, the investor has more risk and could expect only lesser returns as liquidity and money value has become lesser. The prices have gone up. The investor has become more conservative and in thinking. There is a need to provide an effective solution for the modern investor during these turbulent situations. So this research is attempted in this direction.

## Objectives

The study's main objectives are as follows:

1. To study aims for determining the investment behavior of investors in the COVID-19 scenario.
2. To identify the preferred investment avenues of the investors in the COVID-19 situation.
3. To suggest a model for better returns.

## Research methodologies

The current research is primarily based on primary data and is a behavioral study. On the other hand, secondary data is also used to create the model for a typical situation.

The primary information was gathered using a structured questionnaire. The questionnaire was created with the goals of the current study in mind.

The questionnaire consists of 13 questions. The first few foci on demographic characteristics and the remaining questions are focusing on investor behavior. Secondary data was gathered from the machine learning repository website, which can be found at <https://archive.ics.uci.edu/ml>.

Tables and graphs are used to interpret and analyze the data and information collected through questionnaires and other sources [14].

We chose 50 investors from various business sectors to participate in the study. Considerations such as the respondents' class of service, age, salary, educational background, investment experience, and income were considered when selecting the sample.

## Data type

Primary Data used for Abnormal (COVID-19) scenario (Conducted by Survey)

Secondary Data used in Normal (Pre-COVID-19) scenario (Website <https://archive.ics.uci.edu>)

**Statistical Analysis Tool:** Python and MS-Excel.

## Analysis and findings

### Normal (Pre-COVID-19) scenario

Stocks were chosen from the S&P500 equity index, which is focused on the market capitalization of 500 major joint-stock firms traded on NYSE and NASDAQ.

To develop the dataset, Yi-Cheng Liu and I-Cheng Yeh use the "Simplex Centroid Design of Experiments with Mixtures," We obtain  $2q - 1 = 63$  combinations of weights.

"Backtesting" through which the performances of portfolios are obtained, using a stock market database. We will use this dataset to obtain a predictive model that helps us determine these portfolio performance parameters using weights as inputs. Moreover, the

dataset comprises 5 subsets of data, 4 which take into account different periods (5 years each) and 1 dataset that take into account the overall performance (20 years) of a portfolio.

We will use predictive models with all 5 datasets separately to indicate whether the models are better at short-term or long-term dataset predictions [15].

A deep learning model proposed is a combination of CNN network plus bidirectional LSTM network. In this combination, CNN will be foremost, and its output will be used as input to bidirectional LSTM. This combination will predict stock market movement with significant accuracy, which will help modern investors take efficient, rational decisions.

This model, by nature, would also help the investors know, evaluate various stocks, purchase patterns, shifts, and shifts in patterns is shown in Table 1.

The benefits of using this model will help us achieve:

1. Increased return rates and provide more profits.
2. Reduction of systematic risk and absolute risk.
3. Increase in rates and return rates.

Below are the snippets showing actual and predicted graphs derived from the above model with accuracies.

**Interpretation:** From the above Figure 1 graph, we can see that we can capture the annual return within a very good margin for the given timeframe, even considering the peaks and troughs during the specified period.

**Interpretation:** From Figure 2 graph, we can see that we can capture almost every peak for the tested timeframe, and accuracy is very significant. We can see that predicted values are in range with actual values. In addition, any peaks or troughs in the actual values model can replicate them for almost 90% of the overall period.

Table 1

Different variables RMSE & MAPE values

S.NO	VARIABLE	OUT-SAMPLE RMSE	OUT-SAMPLE MAPE
1	Annual Return	0.107	4.043
2	Excess Return	0.089	8.235
3	Systematic Risk	0.056	3.449
4	Total Risk	0.072	5.092
5	Abs. Win Rate	0.079	1.001
6	Rel. Win Rate	0.097	3.876



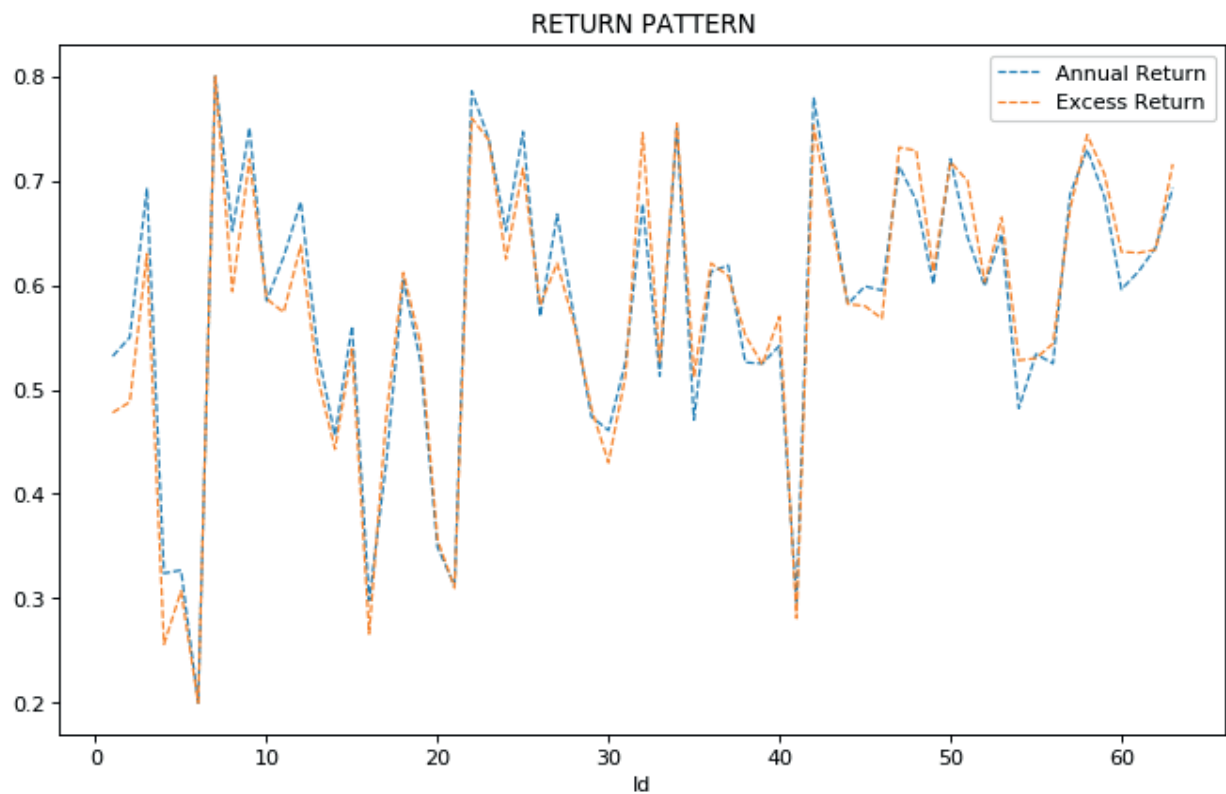


Figure 1. Return pattern of annual return & excess return

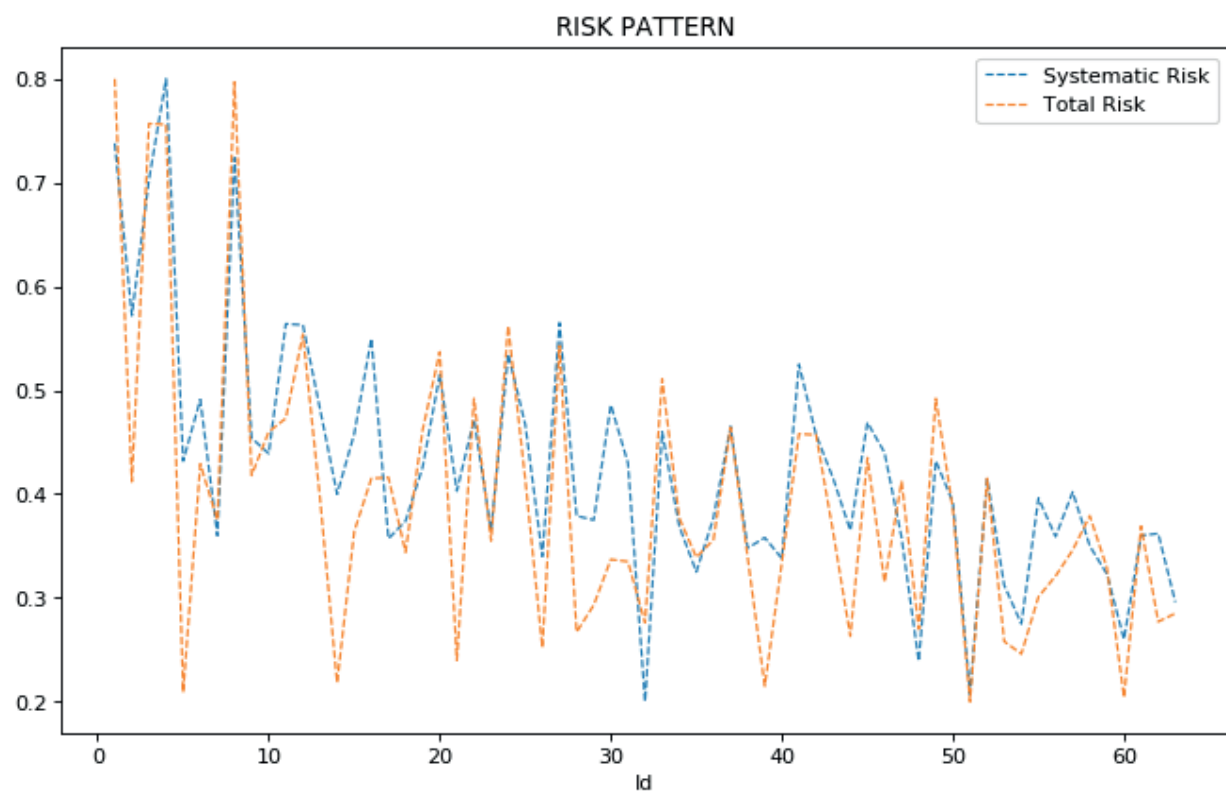


Figure 2. Risk pattern of systematic risk & total risk

**Interpretation:** From Figure 3 graph, we can see that the win rate pattern of absolute win rate is quite unpredictable, but still, through our model, we can capture its behavior. We can also see that our residuals

are heteroskedastic, which means that the error variance varies depending on the level of our dependent variable. As a result, the regression coefficients' standard errors are reduced.

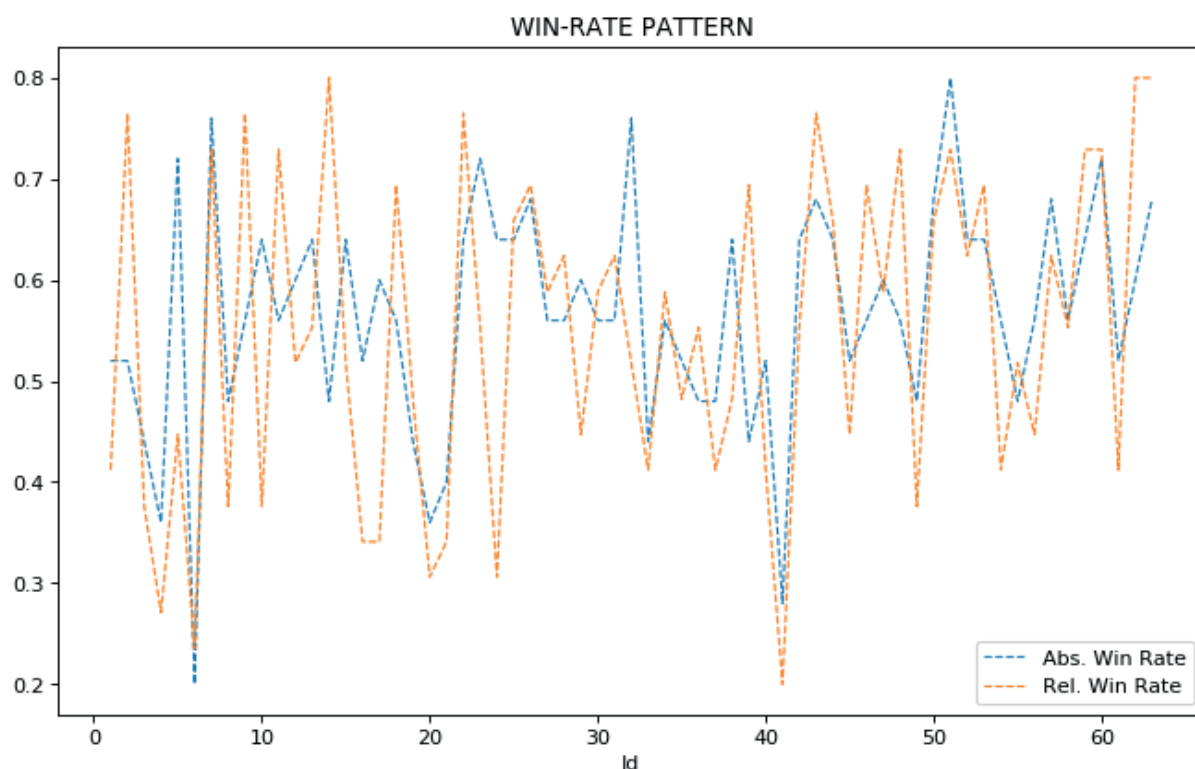


Figure 3. Win rate pattern of absolute win rate & relative win rate

## Abnormal (COVID-19 Scenario):

### Demographical Classification of Investors Results & Analysis

Tables 2 and Figure 4 show gender classification, and we discovered that out of 50 respondents, the majority (88%) are males, and only a few are females (12%)

Table 2

Gender wise classification

Gender	Number of Investors	Percentage
Male	44	88%
Female	6	12%
Total	50	100%

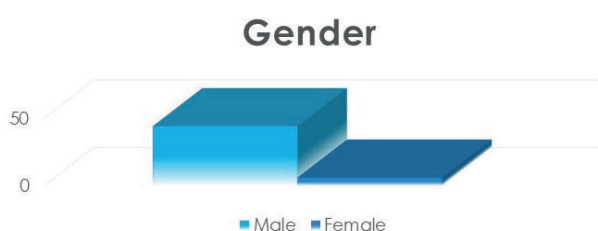


Figure 4. Gender wise classification

Table 3 and Figure 5 show that the majority of respondents (34%) are between the ages of 41 and 50 years, with 4 (8%) respondents under 30 years, 15 (30%) respondents in the 30–40-year range, 9 (18%)

respondents in the 51–60-year range, and 5 (10%) respondents over 60 years.

Table 3

Age-wise classification

Parameter	Number of Investors	Percentage
Below 30	4	8%
30-40	15	30%
41-50	17	34%
51-60	9	18%
Above 60	5	10%
Total	50	100%

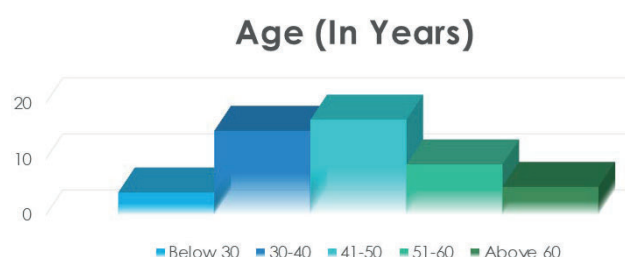


Figure 5. Age-wise classification

Table 4 and Figure 6 show that the majority of the respondents, 30 (60%), are graduates, 5 (10%) are undergraduates, 13 (26%) are postgraduates, and 2 (4%) are professionals.

Table 4

Educational qualification -wise classifications

Parameter	Number of Investors	Percentage
Under Graduate	5	10%
Graduate	30	60%
Post Graduate	13	26%
Professional	2	4%
Total	50	100%

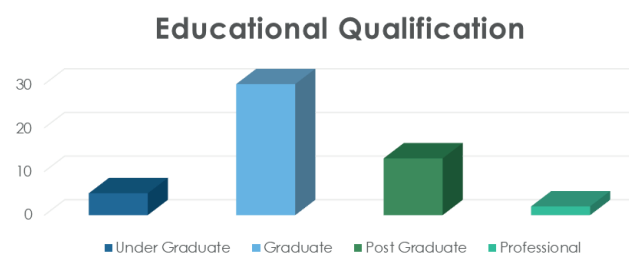


Figure 6. Educational qualification -wise classifications

Table 5 and Figure 7 show that the majority of the respondents, 27 (54%) are in the Rs. 1,00,000-2,00,000 income group, 19 (38%) are in the Rs. 1,00,000 income group, and 4 (8%) are in the Rs. 3,00,000 income group.

Table 5

Income -wise classifications

Parameter	Number of Investors	Percentage
Less than Rs. 1,00,000	19	38%
1,00,000-2,00,000	27	54%
More than 3,00,000	4	8%
Total	50	100%



Figure 7. Income -wise classifications

Table 6 and Figure 8 show that the majority of respondents, 23 (46%), have 1-3 years of investment experience, 4 (8%) have less than 1 year of investment experience, 14 (28%) have 4-6 years of investment experience, and 9 (18%) have more than 6 years of investment experience.

Table 6

Investment experience

Parameter	Number of Investors	Percentage
Less than 1 year	4	8%
1-3 years	23	46%
4-6 years	14	28%
More than 6 years	9	18%
Total	50	100%



Figure 8. Investment experience

Table 7 and Figure 9 show that when asked about their preferred investment options, it was discovered that 29 (58%) respondents preferred equity shares, 11 respondents preferred mutual funds, and four respondents preferred fixed deposits.

Table 7

Preferences of investment options

Parameter	Number of Investors	Percentage
Equity Shares	29	58%
Fixed Deposits	4	8%
Mutual Funds	11	22%
Real Estate	3	6%
Bonds	1	2%
Others	2	4%
Total	50	100%

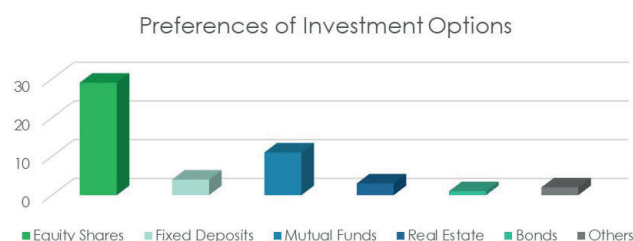


Figure 9. Preferences of investment options

Table 8 and Figure 10 show that out of 50 respondents, 23 (46%) preferred liquidity and safety of funds, 10 preferred regular flow of income, 13 preferred higher return and four preferred tax benefits on income.



Table 8

Purpose of investment

Parameter	Number of Respondents	Percentage
Higher Return	13	26%
Availing Tax Benefits	4	8%
Regular Flow of Income	10	20%
Liquidity & Safety of Funds	23	46%
Speculative Motive	-	-
Total	50	100%

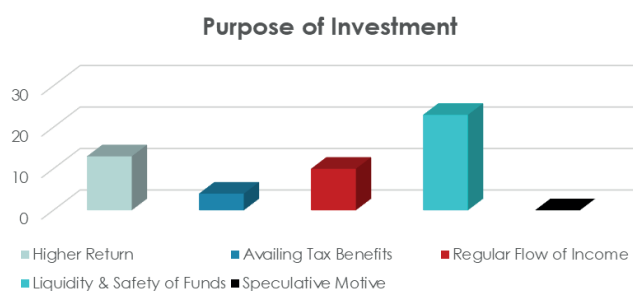


Figure 10. Purpose of investment

Table 9 and Figure 11 show that most investors belong to the New Generation 35 (70%), and the remaining 15 (30%) are hereditary investors.

Table 9

Type of investor

Parameter	Number of Investors	Percentage
Hereditary Investor	15	30%
New Generation Investor	35	70%
Total	50	100%

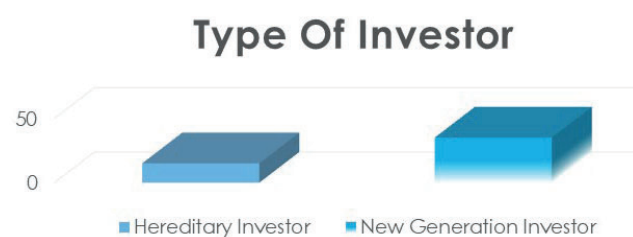


Figure 11. Type of investor

Table 10 and Figure 12 show that when respondents were asked about their investment time horizon, 15 (30%) said they would invest for the medium term (1-5 years), while 25 (50%) said they would invest for the long term.

Table 11 and Figure 13 show that when respondents were asked about their preferred sources of investment information, 28 (56%) preferred the Internet, 9 (18%) preferred to invest with brokers, and 7 respondents preferred newspapers.

Table 10

Time-period for which investors invest

Period to Invest	Number of Respondents	Percentage
Short term (0-1yrs)	10	20%
Medium-term (1-5yrs)	15	30%
Long term (> 5yrs)	25	50%
Total	50	100%

### Time Period To Invest



Figure 12. Time-period for which investors invest

Table 11

Source of information for investment

Source of Information	Number of Respondents	Percentage
Internet	28	56%
Newspaper	7	14%
Periodicals/Magazines	2	4%
Brokers	9	18%
TV Advertisement	3	6%
Others	1	2%
Total	50	100%

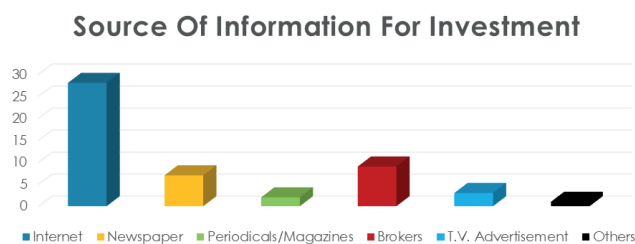


Figure 13. Source of information for investment

According to Table 12 and Figure 14, most respondents, 20 (40%), invest 15-30% of their income, followed by 16 (32%) who invest 0-15% of their income.

Table 12

Percentage of income invested

Income Invest	Number of Respondents	Percentage
0-15%	16	32%
15-30%	20	40%
30-45%	13	26%
45-60%	1	2%
Total	50	100%

### Percentage Of Income Invested

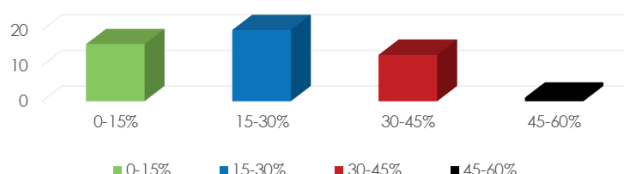


Figure 14. Percentage of income invested

Table 13 and Figure 15 show that when respondents were asked about investment monitoring, 24 (48%) monitor their investments monthly, followed by 18 (36%) who monitor their investments weekly.

Table 13

Monitoring of investment

Monitor Investment	Number of Respondents	Percentage
Daily	6	12%
Weekly	18	36%
Monthly	24	48%
Occasionally	2	4%
Total	50	100%

### Monitoring Of Investment

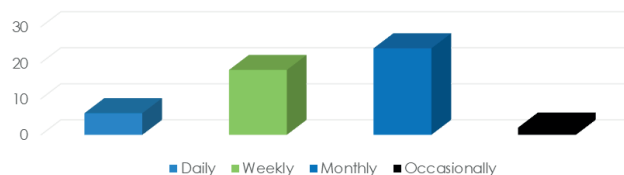


Figure 15. Monitoring of investment

Table 14 and Figure 16 shows that when respondents were asked about factors to consider before investing, 18 (36%) want the safety of their principal amount to be a factor. In comparison, only 14 (28%) want to invest based on return.

Table 14

Factors to be considered before investing

Factors	Number of Respondents	Percentage
Safety of principal	18	36%
Risk	11	22%
Return	14	28%
Macroeconomic Factor	7	14%
Total	50	100%

### Factors To Be Considered Before Investing

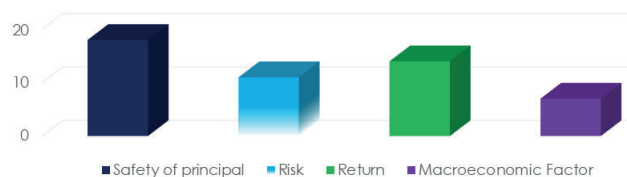


Figure 16. Factors to be considered before investing

## Findings

The proposed model is quite accurate in terms of accuracy, but it is only useful under normal circumstances. We discovered that 88% of the 50 respondents are male, and the remaining 12% are female. Our research revealed that 30 out of 50 respondents were graduates who were neither highly qualified nor undergraduates. When we asked the respondents about their income, we discovered that most of them earn between Rs. 1,00,000 and Rs. 2,00,000 per month. [16].

The majority of respondents have experience of investment less than three years.

We discovered that most respondents believe in modern sources of investment such as equity shares and mutual funds and that only a small percentage of the total surveyed respondents prefer to invest their money in LIC policies, fixed deposits, and other similar products [17].

We discovered that the respondent's primary investment goals are liquidity and fund safety, followed by a higher return and a consistent income stream [18].

The respondents monitor their investment positions every month, with only two respondents not bothering to do so. They only check their investment positions regularly [19].

## Conclusions

### Portfolio Distribution

Before COVID-19, investors had a diverse portfolio where they preferred equal weightage of debt investments, equity as well as commodities like gold, silver, crude oil. In the survey conducted, 70% of the participants preferred having a diverse portfolio with 40% investment in debt instruments like corporate bonds and government bonds whereas 50% of their stock market shares in equity shares whereas remaining 10% of their portfolio comprised of commodities. The reason behind this diverse portfolio was muted growth in the equity market after 2018, where the market remained flat for most of the period; thus, returns

from debt and commodity market helped in enhancing returns on capital employed. After COVID-19, 90% of the investor portfolio comprises equity stocks, as the returns are higher in the equity market as most of the stocks have touched their 52 weeks low. There is much correction that remains in the coming times for these stocks.

- **Nature Of Risk**

Before COVID-19, investors were risk-takers. They preferred investing in small-cap and mid-cap stocks that are more volatile and show less correlation with the movement of Index like NIFTY 50 and BSE. Based on the responses, 60% of the total participants preferred heavy investments in small-cap and mid-cap stocks due to their high volatility, leading to higher returns if the stock analysis is to the point. After COVID-19, investors have become risk-averse. They prefer to invest in large-cap stocks that show a higher correlation with the market. It is easier to predict their movement when compared with small-cap and medium-cap stocks.

- **Correlation With The International Market**

Before COVID-19, investors selected stocks based more on the domestic news related to that particular stock. He used a broader picture of the international indexes like S&P, Dow, NASDAQ, and SGX to understand the next day's movement in the Indian market. 90% of the participants felt that knowing the growth in the foreign indices was enough to predict the movement in NIFTY, as they had lesser equity investment and felt that there is a lesser requirement to deep dive into stock-specific news. After COVID-19, the stock movement in the NSE has become highly dependent on the international market sentiment. For example, pharma stock is being affected by any news from the international markets like that of the US. Thus, more investors prefer to have a broader picture with more knowledge on domestic and international markets.

- **Shift in Sectoral Focus**

Investors' stock portfolio was heavy on Banking and Financial services stocks. Before COVID-19, stocks from the BFSI sector used to be the top gainers in the market. These stocks showed a beta of more than 1, which meant more volatile movement of these stocks when compared to the market movement. As per the survey conducted, 80% of the participants considered the BFSI sector as their focus sector to buy stocks. After COVID-19, there has been a shift in the sectoral focus, with pharma, auto, and FMCG dominating the

market rather than BFSI. Thus, investors are considering more pharma, FMCG, and auto stocks in their portfolio rather than BFSI stocks that are struggling due to the continuous reforms brought in by RBI.

## **Liquidity of Stocks**

Investors were not affected or considerate about the liquidity of the stocks as the market was stable, and situations like circuit freeze in stocks were rare. Investors felt confident in buying less liquid stocks because their demand and supply behavior was not at all erratic. After COVID-19, investors are looking to invest in highly liquid stocks as illiquid stocks are at risk of circuit freeze because of fewer buyers and sellers and a high percentage change in the value of the stock daily.

## **References**

1. Al-Ajmi, J. Y. (2008). Risk tolerance of individual investors in an emerging market. *International research journal of finance and economics*, 17(1), 15-26.
2. Biyalogorsky, E., & Gerstner, E. (2004). Contingent pricing to reduce price risks. *Marketing Science*, 23(1), 146-155.
3. Brooks, C., & Kat, H. M. (2002). The statistical properties of hedge fund index returns and their implications for investors. *The Journal of Alternative Investments*, 5(2), 26-44.
4. De Bondt, W. F., & Thaler, R. (1985). Does the stock market overreact?. *The Journal of finance*, 40(3), 793-805.
5. Van Harlow, W., & Brown, K. C. (1990). The role of risk tolerance in the asset allocation process: A new perspective. *Research Foundation of the Institute of Chartered Financial Analysts*.
6. Gunay, S. G., & Demirel, E. (2011). Interaction between demographic and financial behavior factors in terms of investment decision making. *International Research Journal of Finance and Economics*, 66(2), 147-156.
7. Geetha, N., & Ramesh, M. (2012). A study on relevance of demographic factors in investment decisions (No. 1231-2016-100817, pp. 14-27).
8. Horan, S. M. (2015). The future of wealth management: Unpicking where the puck is going. *CFA Institute*, 1-4.
9. Kannadhasan, M. (2006). Risk Appetite and Attitudes of Retail Investors' with Special Reference to Capital Market. *management accountant*, 41(6), 448-454.

10. Mladina, P. (2018). Real Estate Betas and the Implications for Asset Allocation. *The Journal of Investing*, 27(1), 109-120.
11. Mittal, M., & Vyas, R. K. (2007). Demographics and investment choice among Indian investors. *The ICFAI Journal of Behavioral Finance*, 4(52), 4.
12. Nagy, R. A., & Obenberger, R. W. (1994). Factors influencing individual investor behavior. *Financial Analysts Journal*, 50(4), 63-68.
13. Nejadmalayeri, A. (2019). Demography, Asset Allocation, and Investment Horizon: Enduring Lessons from Long History. *The Journal of Investing*, 28(4), 9-20.
14. Lin, Y. Literature Review of Gender Differences in the Impact of Behavioral Finance on Investment Decision Making.
15. Rakesh, H. M. (2013). Gambler's fallacy and behavioral finance in the financial markets: a case study of bombay stock exchange. *International Journal of Business and Management Invention*, 2(12), 1-7.
16. Yang, C. J., Chen, T. C., & Chen, Y. H. (2020). The preventive strategies of community hospital in the battle of fighting pandemic COVID-19 in Taiwan. *Journal of Microbiology, Immunology, and Infection*, 53(3), 381.
17. Yeh, I. C., & Cheng, W. L. (2010). First and second order sensitivity analysis of MLP. *Neurocomputing*, 73(10-12), 2225-2233.
18. Kaleem, A., Wajid, R. A., & Hussain, H. S. (2009, June). Factors affecting financial advisor's perception in portfolio management: with reference to Pakistan. In 2009 Oxford Business and Economics Conference Program, June (Vol. 24).
19. Akita, R., Yoshihara, A., Matsubara, T., & Uehara, K. (2016, June). Deep learning for stock prediction using numerical and textual information. In 2016 IEEE/ACIS 15th International Conference on Computer and Information Science (ICIS) (pp. 1-6). IEEE.