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An Empirical Analysis on Investor's Perception under the Prevailing Pandemic based on Select NSE Indices

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Abstract
The Covid-19 pandemic has made the whole world standstill and urged individuals to think and look every perspective in a different way. The corona virus pandemic affected the economy from losing jobs to falling in market capitalization along with losing human life and several other factors associated with it. The pandemic situation have forced the world stock market to crush and the speed with which the market nosedived, it shocked the entire world. In a situation like this where every aspect of the society is getting affected due to the pandemic, the researcher should look upon on the societal aspect for the benefit of the society as well especially in this pandemic situation. Due to the pandemic, there is a liquidity crisis in the market and also instability in the financial market and such financial market disruptions will have a negative impact on the investors' perception while investing in the market. Therefore, under this study, the researchers have conducted an empirical analysis of the changes in several NSE indexes' values in pre pandemic lockdown period and the lockdown period by applying One-Tailed Paired t-test for means. The observations are quite clear that the investors' perception has turned negative in this pandemic situation. Several recommendations have also been provided by the researchers to bring the market back in track to normalcy and to escort the confidence of investors. The appropriate causes behind such perceptional changes among the investors along with future research scope have also been identified by the researcher in this study.

INTRODUCTION

Every since the Covid-19 pandemic came into the world, it impacted almost all sectors and the whole country at this point of time is going through a tough situation which was not faced earlier. The pandemic affected human beings along with the whole society in its different aspects. The corona virus pandemic induced the term lockdown and quarantine such that the implementation of the lockdown was to curb the spread of corona virus, which is probably the only possible solution till now. The devastating pandemic also led us to live life in a new normal way which none would have thought earlier. But in a prospering country like India, complete lockdown of economic activities cannot be the feasible solution as the economy will be staged and several sectors will be effected which will hamper the growth and development of our Nation. Along with several different sectors, the stock market also got affected and the investors are losing their confidence at this point of time due to the ongoing spreading of the pandemic which has also shaved nearly one third of the final market cap. The sentiments of the investors are very important while dealing in a stock market and such a devastating crisis will definitely affect the market in a different way. There is a crisis in liquidity and hardly any money is flowing in the market on account of the pandemic which will indeed affect different kind of investors in the market. The whole economy is going through a

downward trend at this point of time which will in turn change the psychological perception and the behavioral aspect of the investors in a negative way. The downward change in the value of stock just like every other sector is nothing but the fear among the investors to lose much in the pandemic imposed crisis situation. The crash in the stock market is not only affecting a particular investor but it is also harmful for the sustainability of a particular country and it certainly raises a long tail of futuristic questions for the Nation such that to revive the economy in the best possible way. Investor's sentiments influence the stock markets significantly and the investors take their decisions emotionally rather than rationally when there is a panic situation like these pandemic. Hence, it's significant for the social science researchers to understand the perception of the investors as a slight negative or positive change can affect the situation of the market at large.

REVIEW OF LITERATURE

The researchers have gone through the following existing literatures in the concerned area for the purpose of identification of research gap:

Jagongo, A., & Mutswenje, V. S. (2014) in their study identified the factors that influence the individual investment decisions in NSE and the most important factors are the firms position and performance; investment returns and economic conditions; and diversification and loss minimization. The study also highlighted that reputation of the firm and its status in industry, expected corporate earnings, profit and past performance firm's stock, price per share, feeling on the economy and expected divided by investors are the most important individual factors that influence investment decision in NSE.

John, J.K, Amudha, R. & Sudhahar, J.C. (2019) studied that the sectoral indices like Energy, Bank, Financial services are more volatile than the defensive sectoral indices like IT and Pharma and the researchers further studied that the pharma sector deemed to be better than other sectoral indices in terms of highest return with the lowest volatility which could be the best choice for the long-term investment from the investor's point of view. There was also a leverage effect in the sectoral indices as found by the researchers.

Chaudhary, R., Bakhshi, P., & Gupta, H. (2020) analyzed the performance of Indian stock market during the period of the pandemic and found that there is a risk in investing in stock market during the pandemic since the perception of the investors have turned negative and therefore the risk averse investors should stay away from investing in the stock market during the pandemic period. The researchers also suggested that short term investors who are holding a position should sell of their stocks to evade losses. The researchers concluded by saying that the stock has fallen considerably in the Covid-19 period and therefore the investors should invest cautiously.

Dev, S. M., & Sengupta, R. (2020) have recognized that the Covid-19 pandemic has indeed posed unprecedented challenges for the Indian economy. The researchers pointed out that the eventual damage to the stock market and the economy is likely to be significantly worse than the current prevailing situation. The researchers suggested that though the government has understood the problems associated in the pandemic, therefore both the central and the state government must responded to the crisis such that to revive the economy from the disastrous situation. Pareek, S. & Singh, K. (2020) in their study indicated that India's economy is highly integrated with the world economy and the exploratory study conducted by the researchers revealed that there exist a strong negative correlation between the number of Covid-19 patients and closing SENSEX index value, which is statistically significant.

RESEARCH GAP

Based on the extensive review of literature, the researcher have found that there is a lack of any definite study in the concerned area for gaining an in depth knowledge regarding investors perception with reference to the impact of current pandemic on the indices behavior. Considering this as a major important area of study and having a considerable socioeconomic significance; the researchers choose to pursue the study to fulfill the research gap through below defined research objectives, by conducting an empirical, analytical and explorative research work.

RESEARCH OBJECTIVES

Based on the importance of the study, the researcher has identified the following research objectives of the study:

1. To know whether there is any change in the investors' perception regarding overall industrial growth prospects in the lockdown period with respect to NSE Nifty 50 index.
2. To know whether there is any change in the investors' perception regarding financial services sector in the lockdown period with respect to NSE Nifty Financial Service index.
3. To know whether there is any change in the investors' perception regarding the different FMCG sector in the lockdown period with respect to NSE Nifty FMCG index.

RESEARCH QUESTIONS

Several research questions were raised by the researcher based on the research objectives of the study:

1. Does there is any change in the investors' perception regarding overall industrial growth prospects in the lockdown period with respect to NSE Nifty 50 index?

2. Does there is any change in the investors' perception regarding financial services sector in the lockdown period with respect to NSE Nifty Financial Service index?
3. Does there is any change in the investors' perception regarding the different FMCG sector in the lockdown period with respect to NSE Nifty FMCG index?

RESEARCH HYPOTHESIS

The following research hypothesis has been formulated by the researcher based on the importance and objectives of the study:

1. H_{01}: There are no significant perceptional changes among different investors regarding the overall industrial growth prospect in the lockdown period.
2. H_{02}: There are no significant perceptional changes among the investors regarding financial services sector in the lockdown period.
3. H_{03}: There are no significant perceptional changes among the investors regarding the different FMCG sector in the lockdown period.

RESEARCH METHODOLOGY

The present study is empirical and explorative in nature which is based on empirical analysis of secondary data collected from various sources and it focuses on how investor's perception changes regarding industry prospects in reference to the Covid-19 pandemic and its resultant lockdown, through the empirical analysis of index and the changes in indices value. Under this study, pre lockdown and lockdown closing index values of NSE Nifty 50, Nifty Financial Services and Nifty FMCG have been taken from the official website of NSE for the purpose of analysis. NSE Nifty 50 index is taken as it is a comprehensive benchmark

index which represents the growth prospects of the industrial sector and the health of the economy at large and on the best judgement of the researcher that index was taken as the overall growth prospect. The financial services sector index has been taken because it is evident that the demand for this sector has drastically declined due to the pandemic induced lockdown and Nifty FMCG index has been taken as it is the only sector whose demand has remained unaffected in the lockdown period.

The study is based on a period of twenty five days of pre lockdown and lockdown period and the pre lockdown period is chosen from 14-02-2020 to 23-03-2020 and the lockdown period is considered from 25-03-2020 to 05-05-2020. Values of 24th March have been ignored under the present study since not all of the states imposed lockdown on that day. The paired closing index values

collected are then analyzed and presented using two sample paired t test for means through MS Excel. Under this study parametric test has been used because the data follows normal distribution in a smaller timeframe under any specific socio economic condition. The results drawn from the applied test are analyzed to draw conclusions there from and to fulfill the research objectives of the study. Recommendations have also been put forwarded by the researcher such that future investors can get benefitted for the overall sustainability of the economy.

DATA ANALYSIS AND FINDINGS

To fulfill the research objectives based on the narrated research methodology above, data regarding select NSE index values of pre lockdown and lockdown period are presented and analyzed below by applying two sample paired t test for means.

Table 1: Pre lockdown period and lockdown period NSE Nifty 50 daily closing values

Pre Lockdown Period		Lockdown Period	
DATE	*INDEX VALUES (Rs.)*	*DATE*	*INDEX VALUES (Rs.)*
14-Feb-20	12113.45	25-Mar, 20	8317.85
17-Feb, 20	12045.80	26-Mar, 20	8641.45
18-Feb, 20	11992.50	27-Mar, 20	8660.25
19-Feb, 20	12125.90	30-Mar, 20	8281.10
20-Feb, 20	12080.85	31-Mar, 20	8597.75
24-Feb, 20	11829.40	1-Apr, 20	8253.80
25-Feb, 20	11797.90	3-Apr, 20	8083.80
26-Feb, 20	11678.50	7-Apr, 20	8792.20
27-Feb, 20	11633.30	8-Apr, 20	8748.75
28-Feb, 20	11201.75	9-Apr, 20	9111.90
2-Mar, 20	11132.75	13-Apr, 20	8993.85
3-Mar, 20	11303.30	15-Apr, 20	8925.30
4-Mar, 20	11251.00	16-Apr, 20	8992.80
5-Mar, 20	11269.00	17-Apr, 20	9266.75
6-Mar, 20	10989.45	20-Apr, 20	9261.85
9-Mar, 20	10451.45	21-Apr, 20	8981.45
11-Mar, 20	10458.40	22-Apr, 20	9187.30
12-Mar, 20	9590.15	23-Apr, 20	9313.90
13-Mar, 20	9955.20	24-Apr, 20	9154.40
16-Mar, 20	9197.40	27-Apr, 20	9282.30

17-Mar, 20	8967.05	28-Apr, 20	9380.90
18-Mar, 20	8468.80	29-Apr, 20	9553.35
19-Mar, 20	8263.45	30-Apr, 20	9859.90
20-Mar, 20	8745.45	04-May, 20	9293.50
23-Mar, 20	7610.25	05-May, 20	9205.60

Source: Retrieved from
https://www1.nseindia.com/products/content/equities/indices/historical_index_data.htm

Analysis:

H_{01}: There are no significant perceptional changes among different investors regarding the country's overall industrial growth prospect in the lockdown period.

H_{11}: There are significant perceptional changes among different investors regarding the country's overall industrial growth prospect in the lockdown period.

Table 2: t-Test- Paired Two Sample for Means		
	Pre Lockdown Period	*Lockdown Period*
	INDEX VALUES (Rs.)	*INDEX VALUES (Rs.)*
Mean	10646.098	8965.68
Variance	1942494.613	190648.4598
Observations	25	25
Pearson Correlation	-0.80067994	
Hypothesized Mean Difference	0	
df	24	
t Stat	4.76618822	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.710882067	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.063898547	

Source: Researchers Own Computation

It has been observed from the above Table 2 that the value of t Stat at 4.767 is greater than t Critical one-tail at 1.711, with a P value of 0.000. Hence, H_{01} is rejected at 1% level of significance since the P value is less than 0.01 and it can be depicted that the investors' perception turned negative regarding overall industrial growth prospect in the lockdown period. Such outcome is also confirmed by the mean index values of Pre Lockdown period at 10646.098 which is greater than the Pandemic induced Lockdown period at 8965.68.

Table 3: Pre lockdown period and lockdown period NSE Nifty Financial Services daily closing values

Pre Lockdown Period		Lockdown Period	
DATE	*INDEX VALUES (Rs.)*	*DATE*	*INDEX VALUES (Rs.)*
14-Feb-20	14477.45	25-Mar, 20	9203.30
17-Feb, 20	14370.25	26-Mar, 20	9698.55
18-Feb, 20	14315.70	27-Mar, 20	9754.30
19-Feb, 20	14520.25	30-Mar, 20	9030.65
20-Feb, 20	14510.40	31-Mar, 20	9317.30

24-Feb, 20	14236.15	1-Apr, 20	8942.55
25-Feb, 20	14236.10	3-Apr, 20	8562.10
26-Feb, 20	14132.70	7-Apr, 20	9278.30
27-Feb, 20	14086.05	8-Apr, 20	9243.45
28-Feb, 20	13566.45	9-Apr, 20	9803.00
2-Mar, 20	13520.00	13-Apr, 20	9500.65
3-Mar, 20	13636.95	15-Apr, 20	9239.35
4-Mar, 20	13439.50	16-Apr, 20	9392.60
5-Mar, 20	13472.75	17-Apr, 20	9905.55
6-Mar, 20	13082.50	20-Apr, 20	9930.65
9-Mar, 20	12522.20	21-Apr, 20	9468.80
11-Mar, 20	12560.45	22-Apr, 20	9569.20
12-Mar, 20	11454.80	23-Apr, 20	9808.95
13-Mar, 20	12101.60	24-Apr, 20	9431.85
16-Mar, 20	11123.40	27-Apr, 20	9627.60
17-Mar, 20	10613.60	28-Apr, 20	9951.20
18-Mar, 20	9800.30	29-Apr, 20	10292.90
19-Mar, 20	9598.35	30-Apr, 20	10570.80
20-Mar, 20	9871.95	04-May, 20	9679.95
23-Mar, 20	8298.50	05-May, 20	9483.15

Source: Retrieved from

https://www1.nseindia.com/products/content/equities/indices/historical_index_data.htm

Analysis:

H_{02}: There are no significant perceptional changes among the investors regarding financial services sector in the lockdown period.

H_{12}: There are significant perceptional changes among the investors regarding financial services sector in the lockdown period.

Table 4: t-Test- Paired Two Sample for Means		
	Pre lockdown Period	***Lockdown Period***
	INDEX VALUES (Rs.)	***INDEX VALUES (Rs.)***
Mean	12701.934	9547.468
Variance	3401364.404	181239.0514
Observations	25	25
Pearson Correlation	-0.587506046	
Hypothesized Mean Difference	0	
df	24	
t Stat	7.430885333	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.710882067	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.063898547	

Source: Researchers Own Computation

It has been observed from the above Table 4 that the t Stat value at 7.43 is greater than t Critical one-tail at 1.71 having a P value of 0.000. Here also the H_{02} is

rejected at 1% level of significance since the P value of the table is less than 0.01 and therefore, it can be said that the investors' perception turned negative regarding financial service sector in the lockdown period. This result and the rejection of the hypothesis are also confirmed by the mean index values of Pre Lockdown period at 12701.934 which is greater than the Pandemic Lockdown period at 9547.468 according to the table.

Table 5: Pre lockdown period and lockdown period NSE Nifty FMCG daily closing values

Pre lockdown period		Lockdown Period	
DATE	*INDEX VALUES (Rs.)*	*DATE*	*INDEX VALUES (Rs.)*
14-Feb-20	30646.75	25-Mar, 20	24471.70
17-Feb, 20	30481.05	26-Mar, 20	25680.10
18-Feb, 20	30360.60	27-Mar, 20	25740.45
19-Feb, 20	30835.00	30-Mar, 20	25831.55
20-Feb, 20	30636.25	31-Mar, 20	27319.20
24-Feb, 20	30147.60	1-Apr, 20	26358.80
25-Feb, 20	30173.20	3-Apr, 20	26537.75
26-Feb, 20	29965.55	7-Apr, 20	28745.30
27-Feb, 20	29981.20	8-Apr, 20	28839.90
28-Feb, 20	29310.25	9-Apr, 20	28953.20
2-Mar, 20	29138.90	13-Apr, 20	28509.85
3-Mar, 20	29406.20	15-Apr, 20	29686.95
4-Mar, 20	29223.75	16-Apr, 20	29512.30
5-Mar, 20	29530.50	17-Apr, 20	29202.35
6-Mar, 20	28937.00	20-Apr, 20	28598.10
9-Mar, 20	28056.50	21-Apr, 20	28480.60
11-Mar, 20	28078.75	22-Apr, 20	29185.15
12-Mar, 20	26083.00	23-Apr, 20	28786.25
13-Mar, 20	26208.00	24-Apr, 20	28636.70
16-Mar, 20	24707.65	27-Apr, 20	29052.55
17-Mar, 20	24929.85	28-Apr, 20	28778.15
18-Mar, 20	24186.50	29-Apr, 20	28665.00
19-Mar, 20	23970.75	30-Apr, 20	28669.30
20-Mar, 20	25931.60	04-May, 20	27599.00
23-Mar, 20	23184.05	05-May, 20	27138.60

Source: Retrieved from
https://www1.nseindia.com/products/content/equities/indices/historical_index_data.htm

Analysis:

H_{03}: There are no significant perceptional changes among the investors regarding the different FMCG sector in the lockdown period.

H_{13}: There are significant perceptional changes among the investors regarding the different FMCG sector in the lockdown period.

Table 6: t-Test- Paired Two Sample for Means		
	Pre lockdown Period	Lockdown Period
	INDEX VALUES (Rs.)	INDEX VALUES (Rs.)
Mean	28164.418	27959.152
Variance	6053645.647	2017634.915
Observations	25	25
Pearson Correlation	-0.381035743	
Hypothesized Mean Difference	0	
df	24	
t Stat	0.313251971	
P(T<=t) one-tail	0.378397691	
t Critical one-tail	1.710882067	
P(T<=t) two-tail	0.756795383	
t Critical two-tail	2.063898547	

Source: Researchers Own Computation

It has been clearly observed from the above Table 6 that the t Stat value is at 0.31, which is less than the t Critical one-tail value at 1.71 and having a P value of 0.378. Hence, here the H_{03} is accepted at 5% level of significance since the P value is more than 0.05 and there have been no significant perceptional changes among the investors regarding different FMCG sector in the lockdown period; rather it can be said that the sentiments and perception of individuals and investors regarding this sector have hardly been changed.

DISCUSSION AND CONCLUSION

On the basis of extensive analysis of the behavior of the select NSE indices, it is evident that the overall perception of the investors has turned negative towards the securities market and the overall growth prospects of the industrial sector of our economy. NSE Nifty 50 index is a benchmark index which consists of the top performer companies belonging to all the sectors of the economy. The overall investors' perception turns negative towards the index represents that investors' confidence has declined towards the market in narrow sense and towards the industrial growth prospects in broader sense. A severe shutdown of industrial units and economic activities has resulted in negative approach towards almost all the sectors of the market. This is clearly evident from the behavior of the above selected indices except for FMCG sector. In case of financial services, the demand for these kinds of services has declined and the possible reason being the slowdown of the economic condition and there is a drastic fall in the demand of financial products and services and the investors perception has turned negative in the lockdown period. The pandemic has worsened the situation which has resulted in negative perception of investors towards the index. The requirement for funds for operations of the industries and individuals has dwindled and as a result the requirement for financial services have spurned. But in case of FMCG sector, the perception of investors has not changed. Rather, it is evident from the above analysis that the perception has turned positive for this sector and the reason behind such shift is that the FMCG sectors revenues have not declined in the lockdown period. The demand for products related to the FMCG sector has remained stable which has created a positive impact on the mindsets of the investors towards this sector.

RECOMMENDATIONS

Based on the above analysis, the researchers observed that the sentiments of the investors have turned negative. The fear for further downfall of the market has resulted in excessive selling pressure on the stocks and indices has resulted in huge losses of investors and bearish trend is evident in Indian securities market. There are many reasons for such behavior of the investors but the prominent one is instinct and the pandemic also impacted the thought process and sentiment of the investors. On the basis of above discussion, the researcher recommend that for short term investors it is the time to square off their position only if they have a cash crunch and are incapable of bearing the risks associated in this pandemic situation. Since the stock market is a zero sum game, the short sellers have gained considerable profits from this pandemic. For long term investors it is suggested to hold the current position as this is the favorable time for them to enter the market and build strong portfolios for better returns and risk averse investors should stay away from the stock market in the Covid-19 Pandemic situation. The fall off situation in the indices is temporary and will definitely recover in the near future and therefore the researchers should act and trade accordingly in the stock market.

LIMITATION AND FUTURE RESEARCH SCOPE

The study is based on analysis of data for a shorter time frame and is conducted on very limited select indices. There is an enormous purview of the study and the research work can be extended by selecting more such indices for a longer time frame and by using more sophisticated statistical tools. Moreover the behavioral aspect of the investors can be assessed using primary survey under the preview of behavioral finance for future researchers.

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