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A study on the effectiveness of trading strategies in stock market in India

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Abstract
Stock market is a major tool of investment as it drives the economic trade and makes sure to have a constant growth in the economy. The current study focuses on examining the effectiveness of trading strategies in stock market so that it will facilitate the identification of trading strategies leading to better performance. This will also enable the better and effective usage of the strategies for new age traders to perform better in the stock market. The impact of various strategies on traders' performance is observed to understand the extent of effectiveness. The study is based on professional traders actively involved in trading practices identified by snowball sampling. Chi squared test shows that there is a significant association between the demographic variables and trading strategies used. The results further indicate that swing trading has the strongest positive correlation with trader's performance while intraday trading reflects the weakest correlation with trader's performance. Regression analysis revealed that scalping trading has the highest magnitude of positive relationship between trading strategies and traders' performance while swing trading has the highest magnitude of negative relationship between trading strategies and trader's performance.

Keywords: intraday trading, BTST trading, position trading, swing trading, scalp trading

Introduction

The stock market of a country is among the finest indicators to understand the well-being of an economy since it covers all industries across all sectors of the economy. There has been a tremendous growth of volumes in Indian stock market where the number increased substantially from 37, 71, 836 in 2017-2018 to 74, 29, 579 in 2020-2021(Database of NSE, https://www1.nseindia.com). Stock market provides various facilities such as high liquidity of stocks, diversification of portfolios, ownership etc. One of the main benefits for trading in stock market is to enhance and magnify one's wealth in terms of returns which has led to usage of different strategies while trading to achieve the end. Trading strategies involves various methods through which a trader can improve his performance in the stock trade.

A systematic study of the existing literature on trading and strategies reveal that various scholarly works have concentrated on trading aspects of the stock market starting from volatility, leverage, liquidity, random walk theory, arbitrage to trading strategies.

Brock *et al*. (1992) [1] have investigated two most straightforward trading rules, i.e., trading range breakout and moving average. They discovered that the process of stocks producing returns is likely more complex than various rules claim. "Why such rules might work is an intriguing issue left for further studies". Bulkley and Tonks (1992) [2] claim that an efficient market definition that relies heavily on the premise of extreme information is addressed by excess volatility tests. They demonstrated the existence of a successful trading rule that generates returns that are much higher than those of a buy and hold strategy. Even when assessed using this less stringent criterion, they came to the conclusion that stock prices are overly volatile. Kahraman and Tookes (2017) [3] have researched on 'does trader leverage influence the liquidity of the equity market?' They discovered that the contrarian margin trading technique is what increases liquidity when stocks are made available for margin trading. The idea that there is a casual relationship between a trader's capacity for borrowing and a stock's market liquidity has been put to the test by the authors using the Indian equities market as a testing ground. Following periods of significantly negative or positive returns, margin traders frequently employ a contrarian trading approach. Selenfreund *et al*. (1968) [4] emphasized on stock price behavior according to the random walk theory which makes the assumptions that knowledge is easily accessible and free, and that there are enough market participants with adequate resources to take advantage of any profit opportunity resulting from a stock's price moving consistently in one direction. It was discovered that the trading rule that gave less weight to current prices and proportionately greater weight to the price series' prior performance performed the best. Buettner *et al*. (2017) [5] explored whether stock-market arbitrage takes use of lucrative tax fraud chances. These transactions rely on certificates of withholding tax that can be used to claim a tax credit or refund without having to pay withholding tax in advance. This tactic took advantage of variations in the withholding-tax liabilities of dividend distributions. Anghel (2017) [6] focused on the intraday price movement in the Central and Eastern Europe stock markets. He took a large sample of intraday prices and discovered that intraday price movements

presented important deviations from random walk theory. This study concluded that trading in high frequency data is not feasible in the stock market of Romania and the Efficient Market Hypothesis cannot be ignored in intraday price movements. Gallagher *et al*. (2013) [7] emphasized mainly on employing data from daily fund manager transaction, short-term swing trades with three phases, i.e., buy-sell-buy. The study found out that swing trades have increased stock price in formativeness and market efficiency. The authors came to the conclusion that when stock holdings are at their best, trades are most profitable. Furthermore, prices reflect fundamental value to a greater extent the stronger a particular stock institutional trade sequence and the larger the number of players.

Diversified work can be seen in the area of equity and stock market trading; however, not much work could be found concerning the use of strategies and their impact on the performance of the trader. Works related to effectiveness of trading strategies used in the stock market are found to be scarce. Hence, the present research tries to highlight this issue and examine the effectiveness of these strategies on the performance of the trader. This study emphasizes on the importance of using these strategies in a constant manner and the impact on the traders' performance. The outcome will facilitate the identification of trading strategies leading to better performance which will enable the better and effective usage of the strategies for new age traders to perform better in the stock market.

Objective & Methodology

The current study's primary goal is to examine the effectiveness of the trading strategies in stock market and in order to meet the objective of the study; the impact of usage of various strategies on trader's performance has been studied.

The present study is descriptive-analytical in nature and is an admixture of both primary and secondary data and the research design used is both descriptive and analytical research as it requires an in-depth information from the stock traders. Along with this, this paper requires both qualitative and quantitative research as it deals with both numerical and documentation data. Primary data are used in collecting information regarding the trading performance of the traders. The use of primary data is limited to the traders in the stock market transacting professionally. Only professional traders have been deemed appropriate for the present study. Professional traders for this current study refer to those traders whose primary occupation is trading in the stock market.

The framework for the present study has been conceptualized by taking into account the various trading strategies in practice which were identified from literature review. In order to examine the content validity, a pilot study was conducted with two stock brokers, one investment banker, four professional traders and two academic experts which led to the identification of five popularly used strategies for trading in the stock market namely Intraday trading, Swing trading, Positional trading, BTST trading and Scalping which are used in the current study. The effectiveness of all the five trading strategies is determined by the performance of the traders which is reflective of effectiveness of using the trading strategies. In the present study, traders' performance is calculated individually for all the five trading strategies and compared with each other as depicted by Figure 1.

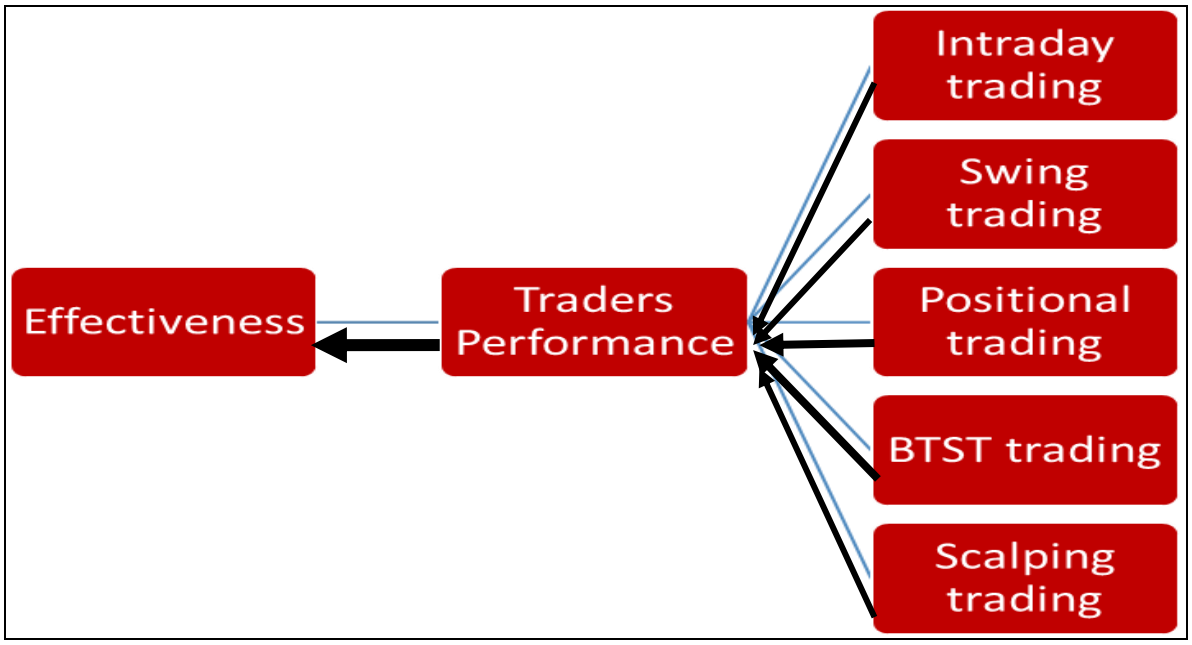

Fig 1: Framework of Trading strategies leading to Effectiveness

Since it is difficult to identify a professional trader from a trader in general; hence the researcher has used snowball sampling to collect data from the professional traders. Closed ended questioners was structured and communicated to 15 such professional traders which were known to the researcher. They were then asked to forward it to their acquaintances fitting the sample criteria. Accordingly, around 50 responses were collected but

all could not be utilized for the study due to incomplete information. Again, some questioners were on the verge of rejection because of very minor missing information. The researcher conducted telephonic conversations to obtain that information so that it could be included for the present study. Hence the present research is based on a total number of responses from 40 professional traders.

Hypotheses Testing

In order to strengthen the observations of the study, hypothesis testing was deemed appropriate. The various strategies were tested for association with the demographic variables gender, age and income to give a deeper comprehension of the impact of demographic variables on the usage of trading strategies for better performance. Accordingly, the following hypotheses were constructed based on age, gender and income of the traders.

$H1_0$ There is no significant association between age and IT
$H2_0$ There is no significant association between age and ST
$H3_0$ There is no significant association between age and PT
$H4_0$ There is no significant association between age and BTST
$H5_0$ There is no significant association between age and SCALP
$H6_0$ There is no significant association between gender and IT
$H7_0$ There is no significant association between gender and ST
$H8_0$ There is no significant association between gender and PT
$H9_0$ There is no significant association between gender and BTST
$H10_0$ There is no significant association between gender and SCALP
$H11_0$ There is no significant association between income and IT
$H12_0$ There is no significant association between income and ST
$H13_0$ There is no significant association between income and PT
$H14_0$ There is no significant association between income and BTST
$H15_0$ There is no significant association between income and SCALP

This research makes use of data collected through a structured questionnaire involving close ended questions. On a scale of 1 to 5, from Strongly Agree to Strongly Disagree, the respondents were asked to score their responses to the following questions.

Table 1

Trader's Performance	
TP1	Traders' performance is enhanced using this strategy
TP2	Outcome of the strategy is determined by the size of leverage taken
TP3	Traders' performance is enhanced by trading in highly liquid assets
TP4	Performance of trade is affected by market volatility
Intraday Trading	
IT1	I am frequent in using this strategy
IT2	This strategy is highly effective
IT3	Quick profit making has a significant impact in this strategy
IT4	Volatility plays a huge role in this strategy
IT5	European market has an impact in this strategy
IT6	I use leverage frequently in this strategy
Positional Trading	
PT1	I am frequent in using this strategy
PT2	This strategy is highly effective
PT3	Wanting big profit has an impact in this strategy
PT4	Trend of the market plays a huge role in this strategy
PT5	Liquidity has a significant impact in this strategy
PT6	I use leverage frequently in this strategy
Swing Trading	
ST1	I am frequent in using this strategy
ST2	This strategy is highly effective
ST3	Wanting big profit has an impact in this strategy
ST4	Trend of the market has a significant impact in this strategy trading
ST5	American market plays a huge role in this strategy
ST6	I use leverage frequently in this strategy
BTST Trading	
BTST1	I am frequent in using this strategy
BTST2	This strategy is highly effective
BTST3	American plays a huge role in this strategy

BTST4	Position sizing has an impact in this strategy
BTST5	Liquidity has a significant impact in this strategy
BTST6	I use leverage frequently in this strategy
Scalping Trading	
SCALP1	I am frequent in using this strategy
SCALP2	This strategy is highly effective
SCALP3	Quick profit making has a significant impact in this strategy
SCALP4	Position sizing plays a huge role in this strategy
SCALP5	Having less risk capital has an impact in this strategy
SCALP6	I use leverage frequently in this strategy

The analysis is done to find the descriptive statistics, correlation, regression, hypothesis testing by using SPSS. The descriptive statistic is used to find the mean and standard deviation between traders and trading strategies. A larger mean suggests that the traders are more inclined towards that strategy whereas a larger standard deviation indicating a greater variability of difference in traders' opinion. Hypotheses testing are conducted by using chi square test since the variables are ordinal in nature. Correlation is being used to find the association between the five trading strategies. A higher correlation between two strategies indicates a higher association between them and vice versa. Under regression, we have used Model fit testing, Goodness of fit testing, Pseudo R Square testing and Parameter estimate testing. Regression equation will help to test the relationship between one or more strategies, thus finding the magnitude of relationship between them. Hypothesis testing will indicate the importance of categorical variables (age, gender, income) with the various trading strategies.

Results & Findings

Table 2 exhibits the correlation of all the five strategies with each other. Intraday trading has a moderate correlation with positional trading as the correlation between them is 0.548. While with the other three strategies, intraday trading has a low correlation as the value of all the three correlations are 0.351, 0.490 and 0.268 which are below the 0.500 significantly. Swing trading has a moderate correlation with BTST trading as the correlation between them is 0.514. While with the other three strategies, swing trading's correlation is low as the value of all the three correlations are 0.351, 0.475 and 0.187 which are below 0.500 significantly. Positional trading on the other hand has a moderate correlation with intraday and BTST trading with correlation of 0.548 and 0.651 respectively. While with the other two strategies, positional trading correlation is low as the value of the two correlations are below 0.500. BTST trading also has moderate correlation with swing and positional trading with correlation of 0.514 and 0.651 respectively. With the other two strategies, intraday BTST has a low correlation as the value of all the three correlations are below the 0.500 significantly. Scalping trading is the only trading strategy which has a low correlation with all the other four trading strategies with the lowest correlation of 0.035 with swings trading and highest of 0.82 with intraday trading. Amongst all the strategies, Swing trading has the strongest positive correlation with trader's performance while intraday trading reflects the weakest correlation with trader's performance. This implies that the impact on trading performance varies on the usage of different trading strategies.

Table 2: Correlation among trading strategies

		IT	**ST**	**PT**	**BTST**	**Scalp**	**EFF**
IT	Pearson Correlation	1	.351*	.548**	.490**	.268	.280
	Sig. (2-tailed)		.026	.000	.001	.095	.081
	N	40	40	40	40	40	40
ST	Pearson Correlation	.351*	1	.475**	.514**	.187	.035
	Sig. (2-tailed)	.026		.002	.001	.248	.830
	N	40	40	40	40	40	40
PT	Pearson Correlation	.548**	.475**	1	.651**	.131	.286
	Sig. (2-tailed)	.000	.002		.000	.420	.074
	N	40	40	40	40	40	40
BTST	Pearson Correlation	.490**	.514**	.651**	1	.281	.242
	Sig. (2-tailed)	.001	.001	.000		.079	.132
	N	40	40	40	40	40	40
Scalp	Pearson Correlation	.268	.187	.131	.281	1	.242
	Sig. (2-tailed)	.095	.248	.420	.079		.133
	N	40	40	40	40	40	40
EFF	Pearson Correlation	.280	.035	.286	.242	.242	1
	Sig. (2-tailed)	.081	.830	.074	.132	.133	
	N	40	40	40	40	40	40

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Regression denotes the relationship between dependent variable and one or more independent variables. As seen in this study, the five strategies have been considered as independent variable and performance of the trader as the dependent variable. Independent factor coefficient determines how far the variables are affected. Therefore, the independent variables will be intraday trading, swing trading, and positional trading, BTST trading and scalping trading whereas the dependent variable will be the trader's performance. As far as Pseudo R Square test is concerned, the Nagetkerke value came to be 16.9% indicating that the strategies explain a relatively small proportion relating to effectiveness. Also, the significant chi square statistic for Model Fit came to be greater than 0.05 indicating that the model may generate predictions based on marginal probabilities for the outcome categories. Moreover, the significance value of Pearson and Deviance statistic for Goodness of Fit came to be 0.624 and 1.0 respectively which indicated that the model is a good fit for the observed data since P>0.05.

Table 3: Parameter Estimates

Threshhold/Location	Estimates	Significance
IT	.321	.553
ST	(.593)	.255
PT	.634	.269
BTST	.257	.631
Scalp	.705	.174

In intraday trading, the value of the estimate is 0.321 which is a significant positive predictor of effectiveness. Therefore, the coefficient will be interpreted as for every one unit of increase in intraday trading; there is a predicted increase of .321 in the log odds of being in a higher level of the dependent variable. In swing trading, the value of estimate is -0.593, thus it is not a significant predictor of effectiveness. The coefficient is interpreted as follows: For every one unit increase on swing trading, there is a predicted decrease of 0.593 in the log odds of being in a higher level of the dependent variable. In positional trading, the value of estimate is 0.634 which is also a significant positive predictor of effectiveness. Therefore, the coefficient will be interpreted as for every one unit of increase in intraday trading; there is a predicted increase of .634 in the log odds of being in a higher level of the dependent variable. In Buy Today Sell Tomorrow trading, the value of estimate is 0.254 which is also a significant positive predictor of effectiveness. Therefore, the coefficient will be interpreted as for every one unit of increase in intraday trading; there is a predicted increase of .254 in the log odds of being in a higher level of the dependent variable. In scalping trading, the value of estimate is 0.705 which is also a significant positive predictor of effectiveness. Therefore, the coefficient will be interpreted as for every one unit of increase in intraday trading; there is a predicted increase of .705 in the log odds of being in a higher level of the dependent variable.

Out of all the trading strategies, swing trading strategy will have a decrease in the log odds of being in a higher level of the dependent variable for every one unit of increase. In case of intraday trading, swing trading, positional trading and BTST trading, for every one unit of these strategies, there will be an increase in the log odds of being in a level of dependent variable.

Table 4 tests the hypotheses of association between demographic variables and the trading strategies used. Considering age, the significance value of all the strategies is more the 0.05. Thus, the null hypothesis of the association between age and intraday trading, swing trading, positional trading, BTST trading and scalping are rejected. This indicates that the age of the trader needs to be considered for effective usage of trading strategies. With regard to gender, the significance values of all the strategies are more than 0.05. Thus, the null hypothesis of the association between gender and intraday trading, swing trading, positional trading, BTST trading and scalping are rejected. This indicates that the gender of the trader is considered in determining the strategies they use while trading. In the context of income, the significance value of all the strategies is more than 0.05. Thus, the null hypothesis of the association between income and intraday trading, swing trading, positional trading, BTST trading and scalping are rejected. This indicates that the income of a trader is highly focused on getting the optimum returns from the trades. Thus, the alternative hypothesis of having an association between all the trading strategies and the variables age, gender and income is accepted in every case as the significance value is more than 0.05 for every variable. This indicates that the age, gender and income of the traders will determine which strategy they use at what circumstances of trading.

Table 4: Tests of Hypotheses

Variable	Strategy	Null Hypotheses	Significance	Result
Age	IT	$H1_0$: There is no significant association between age and IT	0.742	Reject
	ST	H20: There is no significant association between age and ST	0.334	Reject
	PT	H30: There is no significant association between age and PT	0.771	Reject
	BTST	H40: There is no significant association between age and BTST	0.93	Reject
	SCALP	H50: There is no significant association between age and Scalp	0.23	Reject
Gender	IT	H60: There is no significant association between gender and IT	0.177	Reject
	ST	H70: There is no significant association between gender and ST	0.719	Reject

	PT	H80: There is no significant association between gender and PT	0.391	Reject
	BTST	H90: There is no significant association between gender and BTST	0.62	Reject
	SCALP	H100: There is no significant association between gender and Scalp	0.841	Reject
Income	IT	H110: There is no significant association between income and IT	0.352	Reject
	ST	H120: There is no significant association between income and ST	0.924	Reject
	PT	H130: There is no significant association between income and PT	0.12	Reject
	BTST	H140: There is no significant association between income and BTST	0.795	Reject
	SCALP	H150: There is no significant association between income and Scalp	0.808	Reject

Conclusion

When a person goes long or short in markets, with a fixed plan to achieve a profitable return in future, it is termed as a trading strategy. Trading strategies are being used by traders for many years to make their returns profitable with minimum risk that need to be taken. In the present study, five of the most popular strategies (intraday, swing, positional, BTST, and scalping) have been taken to determine the level of effectiveness in terms of the trader's performance. The outcome of the study indicated that swing and positional trading are the most effective among all the five trading strategies as these two strategies were mostly correlated and the variability of difference between them is the least. Intraday trading had a moderate correlation and variability of difference while BTST and scalping were the least effective with the lowest correlation and highest variability of difference between all the five trading strategies.

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