



“APPLICATION OF TECHNICAL ANALYSIS IN INTRADAY TRADING-A COMPREHENSIVE REVIEW OF STRATEGIES AND INDICATORS.”

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Abstract: *Intraday trading refers to the practice of buying and selling financial instruments within the same trading day. This can include stocks, bonds, options, and other financial instruments. This platform typically offers a range of tools and resources for investors to research and execute trades, such as real-time stock quotes, charts, and analysis. It is generally more convenient and less expensive than traditional brokerage services, but it also comes with some risks, such as the potential for hacking and fraud. They aim to take advantage of small price movements in a short period of time. Intraday trading can be done in various markets such as Stock, Forex, and Commodity etc. It is considered a high-risk, high-reward form of trading, and it is not suitable for all investors. Intraday traders typically use short-term strategies, such as technical analysis, to identify opportunities for profit within the market's fluctuations. It requires discipline, focus and a good understanding of market conditions and technical analysis.*

Keywords- *Stock market, intraday trading strategies, cash market, indicators, technical analysis*

Introduction

Stock market trading refers to the buying and selling of stocks, which are shares of ownership in a publicly traded company. When an investor buys a stock, they become a shareholder and have a claim to a portion of the company's assets and profits. The stock market is a marketplace where stocks are bought and sold, and the prices of stocks fluctuate based on supply and demand. In stock market trading, investors can buy and sell stocks through a stockbroker or online trading platform. They can also participate in other investment activities such as options trading, derivatives trading and also Short selling. Stock market trading can be done for various reasons such as for long-term investments, to earn dividends, or for short-term speculation on stock price movements. Intraday trading in the cash market refers to the buying and selling of stocks within the same trading day using the cash market segment. The cash market, also known as the spot market, is where securities are bought and sold for immediate delivery and payment. Intraday traders in the cash market aim to take advantage of small price movements in a short period of time by buying and selling stocks quickly. In intraday trading in the cash market, traders typically use technical analysis and real-time market data to identify short-term trading opportunities. They also closely monitor market news and economic indicators that can affect stock prices. It requires a deep understanding of market conditions, technical analysis, and risk management. Traders must also be prepared for the potential for significant losses, as well as the need for strict discipline and focus to be successful.

The work described in this paper also addresses challenges relating to applying data mining techniques to detect stock prices manipulations and extends previous results by incorporating the analysis of intraday trade prices in addition to closing prices for the investigation of trade-based manipulations (Allen & Gale, 1992). Additionally, emphasis is placed in the definition of appropriate input variables that make financial interpretation more intuitive and in the explanatory power of the models describing intraday patterns that can be associated with manipulations (Diaz, D., Theodoulidis, B., & Sampaio, P. 2011 }

Literature review

- In recent years, many automatic intraday trading systems have been proposed in literature. They focus either on automatically generating trading for a selection of stocks that are deemed as particularly convenient to trade by domain experts or on forecasting single stock directions (long or short positions). However, deciding day by day what stocks are more convenient to trade is a

parallel yet appealing research problem. Baralis, E., Cagliero, L., Cerquitelli, T., Garza, P., & Pulvirenti, F. (2017). Discovering profitable stocks for intraday trading. *Information Sciences*, 405, 91-106.

- It develops a system to analyse how asymmetric information might induce intraday trading patterns. Instead of the strategic modelling approach typically used by market microstructure theorists, we construct an autonomous agent-based model. Our model corresponds to typical market microstructure models in that there are two types of agents, informed agents and uninformed, liquidity-motivated agents. However, our agents learn when to trade during the day according to two types of learning: a social learning using genetic algorithms and an individual learning using a modified learning algorithm. Kluger, B. D., & McBride, M. E. (2011). Intraday trading patterns in an intelligent autonomous agent-based stock market. *Journal of Economic Behavior & Organization*, 79(3), 226-245.
- This article develops a theory in which concentrated-trading patterns arise endogenously as a result of the strategic behaviour of liquidity traders and informed traders. Our results provide a partial explanation for some of the recent empirical findings concerning the patterns of volume and price variability in intraday transaction data. Admati, A. R., & Pfleiderer, P. (1988). A theory of intraday patterns: Volume and price variability. *The review of financial studies*, 1(1), 3-40.
- This study separates trading volume into buyer- and seller-initiated activities and examines the directional volume reaction in small and large trades to different types of earnings news. 'Good' ('bad') news triggers brief, but intense, buying (selling) in the large trades. However, a persistent period of unusually high buying activity is observed in the small trades irrespective of the news. This anomalous proclivity of small traders to buy is robust across firm size, trading volume, and different earnings expectation models. Several explanations are discussed, although the behaviour does not seem fully explained by existing theories. Lee, C. M. (1992). Earnings news and small traders: An intraday analysis. *Journal of Accounting and Economics*, 15(2-3), 265-302.

Research gap

The research gap of intraday trading in the cash market refers to the areas where there is a lack of information or understanding about the topic. Some potential research gaps in intraday trading in the cash market may include

- The impact of high-frequency trading on intraday cash market trading: High-frequency trading (HFT) is a form of trading that uses advanced technology to execute trades at extremely high speeds. There is a lack of research on how HFT affects intraday traders in the cash market and the potential implications for market efficiency and fairness.
- The effectiveness of different intraday trading strategies: While there are many intraday trading strategies that traders can use, there is a lack of research on which strategies are the most effective and why.
- The impact of market microstructure on intraday trading: Market microstructure refers to the ways in which market participants interact and the rules that govern their interactions. There is a lack of research on how market microstructure affects intraday traders in the cash market and how it could be improved to benefit traders. Research in these areas could help to improve the understanding of intraday trading in the cash market and identify ways to improve the performance and profitability of traders.

Objectives

- To study the concept and application of technical analysis of stocks.
- To understand the basic concept of equity market and intraday trading.
- To analyse market manipulation with high volatility and fluctuations in intraday trading.

To evaluate the effectiveness of different intraday strategies applied to price and volume fluctuations in stocks

Scope and Importance of study

The scope of study is limited to equity with special reference to intraday trading strategies. This study highlights the most profit-making intraday strategies. A trader can use these strategies and earn profits daily. Intraday trading requires a lot of patience, knowledge, meticulousness, and research and risk appetite. Research is an integral part of trading. There is need to conduct in-depth research and develop understanding before trading in any stock.

Limitations of the study

However, choosing day by day the most profitable stock to trade is challenging, therefore these are the two limitations. First is there are large number of stocks listed on the stock exchange, and secondly the manual inspection of financial data is time consuming and, sometimes, practically unfeasible.

Research Methodology

There are several methodologies adopted for gathering information and trading decisions in which fundamental analysis, technical analysis, new market sentiment analysis, backtesting and historical data analysis, quantitative analysis, expert advice and research reports etc. Out of which for our research work we are considering technical analysis methodology for our study purpose. Technical analysis methodology involves study of various price charts, patterns, technical indicators, to identify the trend, support and resistant level.

Data collection- secondary data from various sources like journal, news, books, manuals etc are collected for analysis

Parameters to be implemented to select stock for intra-day trading.

- **Choose highly liquid stocks** Liquidity is a vital feature of intraday stocks, as without this feature such trade would not be possible. Equity shares of small and mid-cap companies can be easily bought and sold, as well as experience tremendous volatility due to market fluctuations. The cyclical variations should be carefully observed by analysing 52-week high and low values, as it gives a precise idea about whether an individual should assume long or short positions while investing.
- **Volatility** Best intraday stocks tend to possess medium to high volatility in price fluctuations. Generally, market value fluctuations more than 3% should be avoided while performing intraday trading, as the possibility of incurring a loss is huge in case of an adverse downturn in the stock market in an economy.
- **Strong correlation** It is ideal to purchase an intraday share having a high correlation with a benchmark index of a reputed stock exchange. Thus, substantial movement in share prices can be observed when index value tends to fluctuate. Since benchmark indices consist of shares of top companies listed in a stock exchange, it can be assumed that fluctuations will move in an upward direction, barring any economic abnormalities. Thus, capital appreciation through intraday trading will be substantial if this rule is followed.
- **Higher trade volume** Intraday investors can track the trade volume index of a particular security to identify price fluctuations. A higher trade volume index reflects either excessive demand or supply, depending upon an underlying company's performance. Capital appreciation gains can be earned through both purchase and sale transactions in such cases.

Intraday trading:

1. Candle stick Pattern and Charts Pattern

A. Japanese candlestick pattern

• Single candlestick patterns-

- **Spinning top-** A spinning top is formed when a candlestick has a long wick both above and below a narrow body. So the market had an extensive trading range, but little difference between its open and close.
- **Marubozu** It comes from the Japanese word for 'bald'. It means a candlestick that has no wick whatsoever. A green marubozu opened and closed at its lowest and highest levels respectively. A red marubozu opened and closed at its highest and lowest levels respectively
- **Doji:** In a doji pattern, the open and close prices are exactly equal (or almost exactly equal). So the body appears as a very thin line – typically less than 5% of the total range of the period.
- **Hammer** One can spot a hammer by its long wick below a comparatively short body, with little to no wick above. The body should be two to three times shorter than the lower wick.
- **Inverted hammers** It looks exactly the same as hammers, just upside down. So there's a comparatively short body underneath a high upper wick, with little range below.
- **Hanging man** It looks identical to a hammer, the only difference being where it crops up. While a hammer appears after a bear market, a hanging man will do so after an uptrend. They're taken as a sign that selling sentiment is growing against buyers, and therefore that a reversal may be coming soon.

• Double candlestick pattern: -

- **Engulfing** In this pattern, a candlestick is immediately followed by another larger one in the opposite direction. In the bullish engulfing, a red candle is dwarfed by the green one that follows it. Technical traders might take this as a sign that positive opinion is taking hold, so a significant move up may be on the way – particularly if a bullish engulfing appears after a period of consolidation. A bearish engulfing arises when a bullish stick is then swallowed by a subsequent bearish one. So negative opinion may be forming.
- **Harami** It is essentially a backwards engulfing pattern: a candlestick is followed by a much smaller one in the opposite direction. In a bullish harami, a red candlestick is followed by a green one that is completely contained within the body of the previous candle. This is often taken as a sign that a downtrend may be ending. In a bearish harami, the opposite happens: a green candle followed by a smaller red one. In both cases, the size of the second stick is used to determine the strength of the signal: the smaller the better.

B. Charts Patterns

- **30 Minute Chart** Most traders and investors are familiar with bar charts based on time. For instance, a 30-minute chart shows the price activity for each 30-minute time period during a trading day and each bar on a daily chart shows the activity for one trading day.
- **15 Minute Chart** These charts show movement at 15 minutes time frame for any stock. The charts display the opening, closing, high, and low price of a stock at every 15-minute interval. These charts can be used to identify very short-term trends in the market.
- **5 Minute Chart** The particular chart is one of the most frequently used charts in the trading community. It is used by both short-term and long-term traders. The 5-minute chart is quite useful for quick scalps that last from several minutes to hours during an intraday trading session for long-term traders
- **2 Minute Chart** The 2-minute intraday charts represent the price action of stocks for a few hours. The chart represents the opening, closing, high, and low price of a stock at every 2-minute interval. These charts are useful for traders who are looking at a very short-term opportunity.
- **Candlestick charts** show the open, close, high, and low prices during the trading time. Candlestick charts can be used to make decisions based on the trends, these charts are best used for short-term analysis
- **Volume Chart** Volume is counted as the total number of shares that are actually traded (bought and sold) during the trading day or specified set period of time. It is a measure of the total turnover of shares. Each ticket represents a trade and counted towards the total trading volume. While the same shares may be traded back and forth multiple times, the volume is counted on each transaction. The Volume Chart shows the number of shares that have been traded over a given period. Volume is measured from close-to-close. When the price closes below the previous close, the volume bar is red. When the price closes above its previous close, the bar is green. Volume data can give an indication of whether price trends are sustainable. If an uptrend is accompanied by rising volume, this could indicate that a growing number of bullish investors are buying the stock. The price trend could therefore be more sustainable. On the other hand, there are typically less active market participants during bearish phases. Therefore, if trading volume is falling or steady, it could signal that a market is becoming exhausted and a price reversal is around the corner. (Figure No 1)

2. Oscillators and Indicators

- **RSI** The relative strength index (RSI) is a momentum indicator used in technical analysis that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of a stock or other asset. The RSI is displayed as an oscillator (a line graph that moves between two extremes) and can have a reading from 0 to 100. The indicator was originally developed by J. Welles Wilder Jr. An asset is usually considered overbought when the RSI is above 70% and oversold when it is below 30%. RSI is considered overbought when above 70 and oversold when below 30. These traditional levels can also be adjusted if necessary to better fit the security. For example, if a security is repeatedly reaching the overbought level of 70 you may want to adjust this level to 80 During strong trends, the RSI may remain in overbought or oversold for extended periods. RSI also often forms chart patterns that may not show on the underlying price chart, such as double tops and bottoms and trend lines. Also, look for support or resistance on the RSI. In an uptrend or bull market, the RSI tends to remain in the 40 to 90 range with the 40-50 zone acting as support. During a downtrend or bear market the RSI tends to stay between the 10 to 60 range with the 50-60 zone acting as resistance. (Figure no.2)
- **VWAP** -VWAP stands for Volume Weighted Average Price It signifies, whether, current market is cheap or expensive. It considers intraday volumes for calculation and shows more accurate price movement with context of volume whether the market participant are buying the underlying or the price is just inflated and vice versa. The VWAP is considered as intraday trading tool by most of the traders. This tool is used for taking entries and exits to determine the better price. Generally the price below the VWAP is considered as cheap whereas the price above the VWAP is considered as expensive. This can be considered as mean reversion model technique whereas trend following technique considers price above the VWAP. The stock or underline is considered to be in uptrend or strong whereas the price below the VWAP considered as weak. Intraday traders also get help with trend of VWAP. (Figure no.3)
- **Stochastic**- The stochastic oscillator, also known as stochastic indicator, is a popular trading indicator that is useful for predicting trend reversals. It also focuses on price momentum and can be used to identify overbought and oversold levels in shares, indices, currencies and many other investment assets. The stochastic oscillator measures the momentum of price movements. The stochastic indicator is a two-line indicator that can be applied to any chart. It fluctuates between 0 and 100. The indicator shows how the current price compares to the highest and lowest price levels over a predetermined past period. The previous period usually consists of 14 individual periods. When the stochastic indicator is at a high level, it means the instrument's price closed near the top of the 14-period range. The general rule for the stochastic indicator is that in an upward-trending market, prices will close near the high. In contrast, in a downward-trending market, prices will close near the low. If the closing price slips away from the high or low, it signals that momentum is slowing. The stochastic indicator can be used to identify overbought and oversold readings. It can also predict trend reversals. (Figure no.4)
- **MACD**-Moving Average Convergence Divergence (MACD) is a trading indicator used in technical analysis. It is also called a "Trend" indicator. MACD indicator has 3 components in it, MACD Line - MACD line is the "Blue" line in the MACD indicator. It is a calculation result of subtracting 26-period EMA from 12-period EMA, secondly Signal Line - Signal line is the "Red" line which is plotted on top of the MACD line. It is basically 9-period EMA of the MACD line. When MACD line crosses the Signal line in upward direction it triggers a BUY signal Secondly, when MACD turns up from below zero it is considered bullish. and if it turns down from above zero it is considered bearish (Figure No.5).

3. Breakout Strategies

- **Support level** It is a price level where a downtrend can be expected to pause due to a concentration of demand or buying interest. It refers to the price level that an asset does not fall below for period of time. The support line can be flat or slanted up or down with the overall price trend. Other technical indicators and charting techniques can be used to identify more advanced versions of support.
 - The support level represents a price point that an asset struggles to fall below over a given time period.
 - Support levels can be visualized using different technical indicators or simply by drawing a line connecting the lowest lows for the period.
 - Applying trend lines or incorporating moving averages provides a more dynamic view of support. (Figure No 6)
- **Resistance level** A Resistance level represents a price point that an asset has had trouble exceeding in the time period being considered.
 - Resistance can visualized using different technical indicators rather than simply drawing a line connecting highs.
 - Applying trend lines to a chart can provide a more dynamic view of resistance.

In terms of technical analysis, the simple resistance level can be charted by drawing a line along the highest highs for the time period being considered. Resistance can be contrasted with support. There are more advanced ways to identify resistance incorporating bands, trend lines and moving averages. Technical traders identify both the resistance and support level so that they can time their buying and selling of a stock to capitalize on any breakouts or trend reversals. In addition to identifying entry and exit points, resistance can be used as a risk management tool. Traders can set stop-loss orders to follow the resistance level or use any breach as a trade trigger (Figure no 7)

Findings:

- It is found that for intraday trading VWAP is very useful as it gives accurate signal to buy and sell a specific stock it
- It is found that knowledge of Japanese candle stick is and its patterns is very essential for intraday trading
- It found that along with Japanese stick candle patterns VWAP confirms the trend
- it is found that a trader should buy a stock when a bullish candle closes above VWAP. The position should be squared off after earning 15 to 20 points.
- It is found that MACD helps in understanding at which point the trend will be bullish and vice versa. It is understood that when a bullish candle is formed above VWAP the MACD is always positive
- It is found that RSI is very important oscillator, without which understanding the buying strength is not possible. Usually a stock is bought when RSI is above 60.
- It can be understood that in each of the trades a trader could earn more than Rs. 3,500 To 5,000 with an investment of Rs. 5,00,000/-
- It is found that using all the parameters together is important and only then a profit can be earned
- It is found that consistent practice is needed to excel in this strategy. Gradually a trader will earn profits in each trade

Suggestions:

- A trader should not invest unless he or she has received training in technical analysis
- A trader should gradually increase its investible amount i.e capital. One should not imitate others to earn higher profits
- A trader should follow all the steps mentioned in the project for accurate buying and selling signals
- A trader should learn to control greed and emotions while trading in intraday.

Conclusion:

Technical analysis is the study of behaviour of buyer & seller. It is very useful tool to capture gain with the help of technical analysis. It is very important analysis is the study of investor behaviour and its effect on the subsequent price action of financial instruments. The main data that we need to perform our studies are the price histories of the instruments, together with time and volume information. Technical analysts examine the price action of financial markets instead of fundamental factors that to effect to market prices. It is important to understand to enter in the transaction & understand the trade management once you understand this psychology then it is easier to predict future & earn profit. While it is time to rejoice at the booming Indian economy and the historical journey of the Sensex, the foremost question in the minds of all investors is whether it is the right time to buy or sell stocks now. Intraday trading is risky compared to delivery-based trading or investment. For intraday a trader should deliberately learn to control greed and emotions. In case a trader is unable to do it even if he is in profit he may incur losses. Through this project study is undertaken to analyse the accuracy of VWAP for intraday trading. It is understood that VWAP is very beneficial and helps in generating profits in most of the trades.

Figure No.1 Volume Chart



Figure no.2 RSI



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Figure No. 3 VWAP



STOCHASTIC OSCILLATOR



FigureNo.4Stochastic

Figure No. 5 MACD

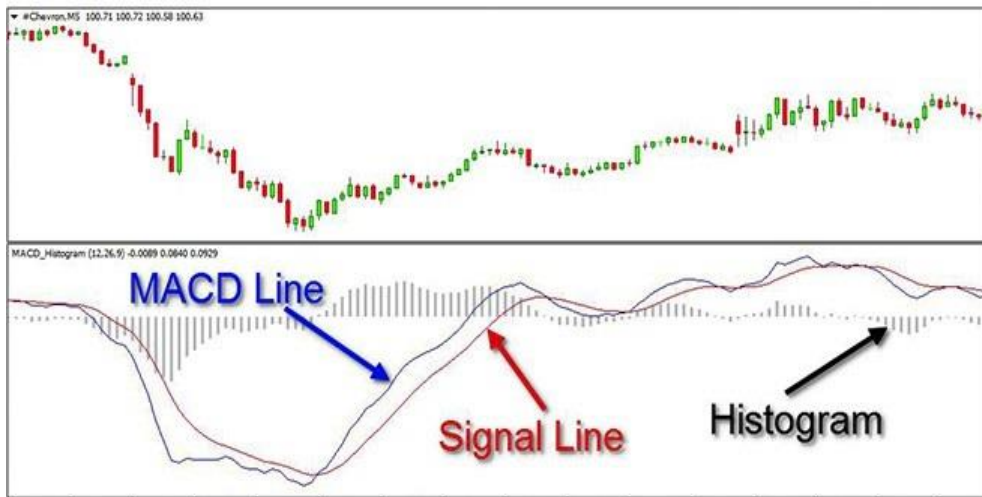


Figure No 6 Support level

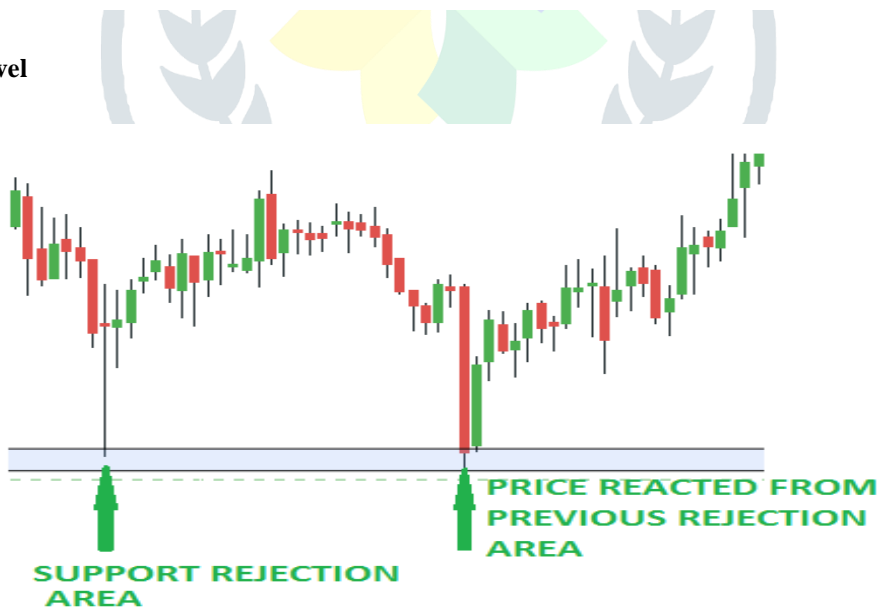


Figure No 7 Resistance level



References

1. Diaz, David and Theodoulidis, Babis and Sampaio, Pedro(2011) Analysis of stock market manipulations using knowledge discovery techniques applied to intraday trade prices, *Expert Systems with Applications*, volume38(4)
2. Aggarwal, Rajesh K and Wu, Guojun(2006), Stock market manipulations, *The Journal of Business*, volume 79(4), pages1915-1953
3. Golmohammadi, Koosha and Zaiane, Osmar R(2014), Detecting stock market manipulation using supervised learning algorithms, *International Conference on Data Science and Advanced Analytics (DSAA)*, pages 435-441
4. Imisiker, Serkan and Tas, Bedri Kamil Onur(2013), Which firms are more prone to stock market manipulation?, *Emerging Markets Review*, volume 16, pages119-130
5. Cherian, Joseph A and Jarrow, Robert A(1995), Market manipulation, *Handbooks in Operations Research and Management Science* volume 16, pages 611-630
6. Jiang, Guolin and Mahoney, Paul G and Mei, Jianping(2005), Market manipulation: A comprehensive study of stock pools, *Journal of Financial Economics* volume 77(1), pages-147-170
7. McFarlane, Michael Bowe Stuart Hyde Lavern, Duration, trading volume and the price impact of trades in an emerging futures market
8. Heuson, Andrea J and Su, Tie(2003), Intra-day Behavior of Treasury Sector Index Option Implied Volatilities around Macroeconomic Announcements, *Financial Review*, volume 38(1), pages-161-177
9. Inamdar, Mohd Merajuddin and Chari, Latha (2023), Liquidity Impact of Novel Market Surveillance Measures—An Evidence from India, *FIIB Business Review*
10. Dewally, Michaand Ederington, Louis H and Fernando, Chitru S(2010) Determinants of Trading Profits of Individual Traders: Risk Premia or Information?, *SSRN 1535543*
11. Baralis, E., Cagliero, L., Cerquitelli, T., Garza, P., &Pulvirenti, F. (2017). Discovering profitable stocks for intraday trading. *Information Sciences*, 405, 91-106.Kluger, B. D.
12. McBride, M. E. (2011). Intraday trading patterns in an intelligent autonomous agent-based stock market. *Journal of Economic Behavior& Organization*, 79(3), 226-245.
13. Admati, A. R., &Pfleiderer, P. (1988). A theory of intraday patterns: Volume and price variability. *The review of financial studies*, 1(1), 3-40.
14. Lee, C. M. (1992). Earnings news and small traders: An intraday analysis. *Journal of Accounting and Economics*, 15(2-3), 265-302.
15. Diaz, D., Theodoulidis, B., & Sampaio, P. (2011). The trade prices. *Expert Systems with Applications*, 38(10), 12757-12771
16. Allen, F., & Gale, D. (1992). Stock-price manipulation. *The Review of Financial Studies*, 5(3), 503-529.