DATA MINING BASED PATTERN CLASSIFICATION OF NSE SHARIAH INDEX: A SEMI-MONTHLY PREDICTION MODEL

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ABSTRACT

This study examines the being of a Semi Month Effect (SME) in NSE Shariah index using data mining classifications. The current study usages the daily return data of the NSE Shariah Index for the data ranging between January 2009 and March 2019. The outcomes confirm the presence of seasonality Anomalies in NSE Shariah index stock yields in India. The results are also reliable with the Anomalies does exist in the stock market in India, Shariah index is inefficient, and hence, investors can time their share investments to expand earnings.

Keywords: Data mining, Anomalies, Semi Month Effect, Efficient Market Hypothesis, NSE Shariah and Riba rule.

I. INTRODUCTION

Islamic fund is a reasonably new phenomenon in the financial system of India. Sharia is the Islamic laws which standardize a lot of aspects of a Muslims life as well as the type of investments permitted to invest their money. For example, interests are measured according to the Riba rule hence bonds are prohibited to investors ensuing the Sharia law. A Shariah fund is an investment vehicle, and real estate fund organized by following Islamic rules. To capitalize in common stocks in firms involved in the halal companies. Firms are also screened to make sure of Shariah acquiescent accounting ethics. Semi-month Effect, the mean value of the First Half Month has been compared to the second half of the month. The aim of studying SME is to find suitable investment time during fortnight month [1-14]. Stock market plays an important role for the economic development of a rustic, by properly channeling the funds for productive purpose. The proposition that a well-regulated stock exchange extends significant economic services is now widely accepted and recognized by various academicians.

Financial exchange helps economy additionally as individual financial backers by assembling the scant assets and distribution in those areas, which utilize them ideally. Financial exchange helps singular financial backers by giving persistent commercial center to protections. According to monetary perspective, an all around created securities exchange has been viewed as imperative for financial development just as enhancements in nation's profitability. The advancement of a nation can be decided by finding out the securities exchange pointers like liquidity, resource evaluating and turnover. Likewise, by guaranteeing a free and reasonable exchanging of stocks and execution of estimating component, by guaranteeing a fitting profit from speculation will guarantee feasible venture openings, in the securities exchanges goes about as a main thrust for directing reserve funds into beneficial speculation and subsequently, guarantees an ideal assignment of capital. As of late, there has been more noteworthy misery amongst investors, portfolio chiefs and specialists worried about the conduct of securities exchange costs. The financial backers are anxious to procure a higher pace of profit from their speculations. Henceforth, to fulfill financial backer's assumptions, the portfolio supervisors need to take a gander at the securities exchange conditions definitely and in like manner exhort financial backers and to develop a sound portfolio. Our nation is accepted to be as one of the quickest cutting-edge markets on the planet with a grounded financial exchange with a long history of coordinated exchanging protections. Throughout the most recent couple of years, cutting edge innovation and online based exchanges have modernized the stock trades though, regarding the quantity of organizations recorded and complete market capitalization, the New Delhi market is considered enormous comparative with the nation's phase of monetary turn of events.
The subject of inconsistency in the financial exchange has pulled in the consideration of scientists for quite a while because of its capability of creating strange returns during specific times of the year. Abnormality alludes to the standard and dull vacillation in a period arrangement which happen occasionally over a range of not exactly a year. The presence of an articulated occasional conduct inside the market may recommend a type of market shortcoming. The presence of irregularity in stock returns, be that as it may, abuses a significant theory in money, for example Effective Market Hypothesis (EMH) in light of the fact that value costs are no longer irregular and might be anticipated upheld past design. The recommendation, "Stock returns are not unsurprising" was until as of late viewed as quite possibly the most solidly settled observational analysts on the conduct of stock returns. Nonetheless, the non-consistency recommendation has been addressed as of late and thus certain irregularities in the conduct of profits, for example, Week-of-the Month Effect, Day-of-the Week Effect, Intra-day Effect, Size Effect, Tax-year Effect, Turn-of-the Year Effect, January Effect, Monthly Effect, Turn-of-the Month Effect and Price-Earning Ratio Effect and some others have been noticed. These abnormalities refute the presence of Efficient Market Hypothesis.

Consequently, in the current investigation a sincere endeavor has been made to determine whether Anomalies exists in BSE Sensex, NSE Index, BSE and NSE Sectoral lists and if exists, nature of oddity exists in Indian Stock Market. Assuming the market is productive, there exists some market effectiveness irregularities, the financial backers can acquire some strange returns by utilizing deliberately systems inside the market. A major blast has been seen in Stock Markets lately. Countless most recent players have entered the market and attempting to acknowledge piece of the pie during this quick improving business sector. Investigation of oddities help the financial backers in exploiting the abnormality of data on the lookout. Financial backers may have opportunities to utilize the schedule oddities to acquire unusual return. The developments of stocks during specific seasons, specifically securities exchanges can be noticed and ventures should be possible appropriately. The oddities could be recognized by considering the value developments of the stock and the financial backers can contribute astutely during these occasions to procure strange returns. Which conveyed significant straightforwardness in share market practices and accordingly prevailing to acquire confidence of public financial backers as well as the worldwide ones. Financial exchange assumes an essential part for the monetary advancement of a country, by appropriately directing the assets for beneficial reason. The suggestion that a very much controlled securities exchange broadens critical monetary administrations is currently generally acknowledged and perceived by different academicians. Securities exchange helps economy just as individual financial backers by preparing the scant assets and assignment in those areas, which utilize them ideally. Financial exchange helps singular financial backers by giving ceaseless market to protections. Securities exchange effectiveness is among the most investigated zones in money. Financial exchanges are viewed as effective enlightening. The frail type of market productivity expresses that it is beyond the realm of imagination to expect to foresee stock cost and return developments utilizing past value information. Following Fama (1965; 1970), an immense number of studies were directed to test the proficient market speculation (EMH). These examinations for the most part have shown that stock costs carry on haphazardly. All the more as of late, in any case, specialists have gathered proof restricting to the EMH.

They have recognized precise varieties in the stock returns. The significant irregularities incorporate the Semi-Monthly impact and the occasional impact. The presence of the occasional impact denies the feeble type of the EMH and suggests market failure. In a wasteful market financial backer would have the option to acquire unusual benefits, that is, returns that are not fitting with hazard. The idea of Shariah-agreeable lists originally came up inside the 1960s; nonetheless, they need as of late got famous. In any case, Shariah-agreeable resources represent under 1% of overall monetary resources, steady with proficient administrations firm PwC. Shariah-agreeable records had the chance to submit to Shariah standards, which means they are generally confined from putting resources into organizations associated with selling liquor, pork items, erotic entertainment or weapons, likewise as those with betting interests. Any pay emerging from these sources should be given to good cause. By barring these frequently unstable areas – large numbers of which are affected by political choices – these ETFs will in general be less unpredictable than others, and have beat in the course of recent years. Muslims address a couple of quarter of the total populace, which recommends the development capability of such a contributing is enormous.

The main Shariah-consistent files emerged in Malaysia inside the last part of the 1960s, trailed by the middle East inside the mid-1970s. The enormous players have all presented Shariah-consistent files, which are managed and affirmed by their individual Islamic administrative sheets. In 2009, the essential Shariah-consistent list was dispatched in South Africa, acquainting greater venture prospects with the country's huge Muslim people group.
Shariah-consistent lists aren't just fascinating speculation alternatives for Muslims, yet additionally for non-Muslim financial backers since they will be less unpredictable than different methodologies. The Bombay securities exchange (BSE) inside the Indian city of Mumbai has dispatched a substitution list which comprises of organizations that meet the Islamic code. The Tasis Shariah 50 was shaped utilizing rules from an Indian Shariah arranging board. Studies have tracked down that the lion's share Muslims in India are prohibited from the country's formal monetary area. That is on the grounds that shariah doesn't permit interest in organizations that sell merchandise like liquor, tobacco or weapons. Neither does it permit interest in organizations that infer huge exploit interest. The file is intended to be the thought for other Shariah-consistent monetary items.

BSE chief and Chief Executive Madhu Kannan said that the new list would pull in Islamic and other "socially mindful"; financial backers both in India and abroad. This file will make expanded consciousness of money related speculations among the majority and help improve monetary consideration, he said during an assertion. Organizations included inside the list are screened by Tasis, which is predicated in Mumbai and whose board individuals incorporate Islamic researchers and legitimate specialists. Before anybody can pull in financial backers might want to put in situ institutional framework, and having a record to follow Shariah-consistent stock is essential, MH Khatkhatay, senior counselor to Tasis, told the Reuters press office.

On the off chance that you have an ETF (trade exchanged asset), for example, you might want a file, or if abroad financial backers need to take a situation in Shariah list in India, this is frequently a call for interest for individuals to return and contribute. Tasis said the record would open the potential for Sharia interests in India. The BSE has the main number of recorded Sharia-consistent stocks inside the world said Shariq Nisar, head of exploration and activities at Tasis. All Muslim nations of the middle East and Pakistan set up don't have as many recorded Sharia-consistent stocks as are accessible on the BSE. Stocks will be surveyed month to month to ensure they actually satisfy the guidelines – any which don't will be taken out. A Shariah List during a record of organizations that are discovered to be agreeable with the Islamic sanctioned law or the Shariah. Most Shariah records which are made so inaccessible are upheld a current or a crucial document. The Shariah consistent resources in fig 2 and 3.

Fig. 2 Shariah compliant assets (Source: https://aseanpost.com)
Whose constituents are evaluated for consistence by a board that is knowledgeable inside the norms of the Quran. How is that the screening done? The screening is finished at two levels, relying on the fragment that the corporate works in likewise as a couple of the working extents that the corporate works with, as obvious in their yearly report. For event, all organizations during a particular record whose business ranges are pork, alcohol, wagering, financials, tobacco, erotica, trading of gold and silver as money on a surrendered premise likewise as publicizing and media (excepting day by day papers and a couple of different cases which are taken apart on an individual reason), would be gotten out of the list. Likewise, the amount of commitment, money and accordingly the degree of pay that is assembled from resistant exercises is moreover contemplated. A model, a company may be agreeable if the proportion of obligation to the market cost of value is a more modest sum than 33%.

The BSE and Mumbai-based Taqwaa Admonitory and Shariah Speculation Arrangements (Tasis) has pushed India's to begin with esteem rundown of organizations that suits Sharia, the shariah, it's an undertaking to build support of Muslims inside the value market and pull in adventure from all inclusive stores that follow to shariah. The BSE Tasis Shariah 50 two or three the driving organizations, tallying TCS, Reliance Industries, ONGC and Bharti Airtel. Islamic laws don't permit theory in organizations that advantage from interest pay or arrangement of alcohol, tobacco and weapons. Islamic back has continued to create notwithstanding a hardship of sureness in overall financial systems. Sharia-consistent assets rose by 8.85% from $822 billion of every 2009 to $895 billion out of 2010, agreeing to an outline of Islamic asset instruct by The Investor. It's created at an accumulated yearly improvement pace of 23.46% from 2006 to 2010. The introduction of the BSE Tasis Shariah 50 File will offer help pull in pools of capital from the Gulf, Europe and South-East Asia.

As demonstrated by the 2001 Census, India has around 14 crore Muslims, basically 13.5% of the entire people. Notwithstanding this, their venture inside the money related structure is irrelevant. a huge segment of the Indian Muslim people isn't a piece of the formal financial system , unsurprisingly with the Sachar Committee Report (2006). Once-over of Shariah Compliant Companies Released: Idafa Investment Pvt. Ltd., a shariah reliable stocks adventure association, has conveyed a load of NSE 500 Companies picked on Islamic Parameters (NSE - National Stock Exchange). The summary was conveyed by Mr. Ahmad Randeree, Chairman of DCD Group, sponsors of Islamic Bank of england and Bank al-Islami of Pakistan. The once-over was conveyed at an "Monetary sponsor's Education Program" composed by Idafa Investments Pvt. Ltd. at Islam Gymkhana in Mumbai on 21st of May 2005. Inside the program Mr. Samir Mistry of the Tata open-end store (TMF) chatted on "The Art of Picking Stocks" and Mr. Imtiyaz Merchant, an agent chatted on "The Science of Timing the Markets". The two gatherings were followed by an issue and answer gatherings. Mr. Samir Mistry may be a Fund
Manager with TMF which had drifted the sole shariah reliable open-end store in India, called the Tata Select Equity Fund. Mr. Imtiyaz Merchant is an expert examiner who teaches the hypothesis wing concerning the Larsen and Toubro and different other offer sellers. Idafa Investments Pvt Ltd holds quick to the inflexible shariah requirements and screens associations related with creation and arrangements of liquor, tobacco, revolting delight, and people associations related with wagering, record and banking adventures.[52][53]

An enormous number of most recent players have entered the market and attempting to acknowledge piece of the overall industry during this quick improving business sector. Investigation of abnormalities help the financial backers in exploiting the anomaly of data on the lookout. Financial backers may have opportunities to utilize the schedule inconsistencies to acquire strange return. The developments of stocks during specific seasons, specifically securities exchanges can be noticed and speculations should be possible in like manner. The peculiarities could be distinguished by considering the value developments of the stock and the financial backers can contribute shrewdly during these occasions to acquire strange returns.

Organizations additionally are screened on other monetary boundaries like:

(a) a company shouldn't have revenue based getting very 33% of its market capitalization.

(b) Interest acquiring shouldn't be very 5% of its complete pay

(c) Receivable (current + long haul) shouldn't be very 45% of the whole resources

- The NSE 500 rundown has been accumulated with regards to the above subjective and quantitative parametens.
- NSE dispatches new brand character for NIFTY Indices
- Proposed NSE IFSC-SGX Connect gets administrative agreements
- NSE EMERGE accomplishes 200th SME posting achievement
- NSE Commodities Segment gets acknowledgment from CBDT
- NSE opens Center for Behavioral Science at IIMA
- Launch of Interest Rate Options on Government of India securities
- NSE Indices dispatches Nifty BHARAT Bond Index Series
- NSE pronounced world's biggest subsidiaries trade 2019 by WFE
- NSE dispatches Request for Quote (RFQ) Platform in Debt Securities

II. REVIEW OF LITERATURE

Bahadur etc (2005) in their study found that the SME does not exist in the Nepalese Stock Market.

Muhammad Shahid Iqbal, Rehana Kouser, and Muhammad Azeem (2013) in their study discover that significant Ramadan effect, the month of the year effect, day of the week effect, and TOM effect in Karachi Stock Exchange. Calendar anomaly does exist in the Pakistan stock market.

Silva. P. M (2010) in his study initiate that the calendar anomaly does exist in the Portuguese stock market.

Anwar Halari a, Nongnuch Tantisantiwong, etc (2018) in their study found that calendar anomalies exit all Islamic months in Pakistan. Halari, Anwar, etc in their study found that calendar anomalies exist in Pakistan particularly Ramadan month.

Nida Shah, and etc (2017) in their study found that to buy the shares in Zil-Haj month and selling the later month to earn a higher return in Pakistan.

Shakila Band etc (2017) in their study found that the SME does not exist in the BSE.
III. OBJECTIVE OF THE STUDY
To examine the Semi Month Effect in Shariah index.

IV. RESEARCH METHODOLOGY
The research is analytical’ Shariah index is computed since 2009 in NSE Nifty. Historical data collected for the period ranging between January 2009 and March 2020.

V. TOOLS FOR ANALYSIS
The collected figures have been investigated by making use of Returns, Descriptive statistics, Shapiro-Wilk test and Paired t-test.

VI. ANALYSIS AND INTERPRETATION

TABLE I
SEMI MONTH EFFECT – SHARIAH INDEX

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Vari</th>
<th>Skew</th>
<th>Kurt</th>
<th>Shapiro</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>-.0422</td>
<td>0.052</td>
<td>0.861</td>
<td>0.741</td>
<td>-8.748</td>
<td>92.75</td>
<td>0.0</td>
</tr>
<tr>
<td>Second half</td>
<td>0.0866</td>
<td>0.079</td>
<td>0.341</td>
<td>0.117</td>
<td>1.112</td>
<td>6.41</td>
<td>0.0</td>
</tr>
</tbody>
</table>

High mean yields were noticed in the second half of the month (0.0866) and low mean return were found in the first half of the month (-0.0422). While relating to variance, High instability was noticed in the first half of the month (0.741) and low instability was noticed on the second half of the month (0.117). The Calculated P value of the Shapiro-Wilk test of NSE Shariah index returns is less than 0.05, it is evidently showed that the data are not normally scattered. Hence, anomaly occurs NSE Shariah index returns.


TABLE II
SEMI MONTH EFFECT – SHARIAH INDEX

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>(p) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>-.0422</td>
<td>0.86108</td>
<td>1.605</td>
<td>0.111</td>
</tr>
<tr>
<td>Second half</td>
<td>0.0866</td>
<td>0.34159</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NSE Shariah index yields does not vary between the first half and the second half of the month.

VII. SUGGESTIONS
Significant returns are seen on Second - half of the month; henceforth, financial backers may want to stocks purchase on First - half of the month and sell them on Second - half of the month. There are different components to be considered prior to contributing. We likewise suggest that the equivalent can be applied in least number stocks and extend something similar on blue-chips base on the dangers and prizes. It is fundamental for the Indian financial backer to deliberately consider the generally accessible sign, since it has an imperative impact in the Market Efficacy and changes on the lookout. The current examination would be valuable for local and unfamiliar financial backers, merchants and arbitragers who develop the productive exchanging procedure the financial exchange [15-33].

VIII. CONCLUSION
The results affirm the presence of Semi Month Effect in NSE Shariah file. The examination raises inquiries on the EMH which situations with stock costs are arbitrary and those financial backers can't get atypical benefits utilizing verifiable costs. The NSE Shariah designs consequently and unpredictability can capable financial backers to take advantage of nearly standard market changes by manipulative and executing exchanging strategies, which justification such expectable structures. The existent speculations are deficient in displaying financial exchange. The financial exchange is brimming with oddities. In the event that the market isn't
productive, financial backers can make benefit by examining the memorable information. By diving in to tremendous information you can uncover a lot of failure which can be to make in to exceptional yields. By finding these shortcomings you can make the framework more productive.

REFERENCE

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