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Analysis Of The Lunar Cycle Effect: New Moon And Full Moon On The Price Pattern Of The Sri Kehati Index Over 5 Years (2019-2023)

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Abstract: *This study investigates the effect of the lunar cycle specifically the new moon and full moon phases on stock price patterns within the SRI KEHATI Index over a five-year period (2019–2023). Financial astrology, which integrates finance, astronomy, and behavioral psychology, has long been debated for its potential influence on investor sentiment and market movements. Using a quantitative research approach, this study analyzes secondary data from 11 companies selected through purposive sampling, resulting in 8,046 total observations across lunar cycles. Abnormal returns were calculated using the market model, and differences in stock price behavior were examined through paired sample t-tests comparing three days before and three days after both the new moon and full moon events. The empirical findings show no significant difference in abnormal returns surrounding either lunar event. Specifically, price patterns before and after the new moon exhibit no observable changes, indicating trend continuity rather than reversal. Likewise, the full moon phase does not produce statistically significant price deviations, suggesting that investor behavior in the SRI KEHATI Index is not influenced by lunar phenomena. These results contrast with prior studies that reported mixed evidence regarding lunar effects on market performance, implying that the impact of astronomical cycles may be context-dependent and vary across indices, time periods, and investor characteristics. Overall, this study concludes that lunar cycles do not affect price patterns in the SRI KEHATI Index. The findings contribute to behavioral finance research by emphasizing the limited role of lunar-driven sentiment in Indonesian sustainable stock indices.*
Keywords*: Financial Behavior, Financial Astrology, Lunar Cycle, New Moon, Full Moon.*

INTRODUCTION

The capital market is often used as an indicator of economic development. The capital market plays a vital role in Indonesia's economic movement, serving as a platform for companies, governments, and individuals seeking capital investment. According to Fadlilah, the capital market plays a crucial role in economic development, often viewed as an indicator of economic conditions. The Composite Stock Price Index (IHSG) is a frequently used indicator to measure economic growth in Indonesia. However, there are other indices within the Indonesian capital market with different functional indicators, one of which is the SRI KEHATI index, which aims to measure ESG development in Indonesia. The SRI KEHATI index evaluates sustainable company

performance based on Environment, Social, and Governance, which serves as an economic indicator (Kehati, 2025).

The capital market is inextricably linked to investor emotions, making it highly volatile and sometimes difficult to predict, yet revealing certain patterns. This has given rise to much speculation among investors about events that can influence their emotions. Many factors influence investor psychology, which are interesting factors to be studied and compared with the index containing stocks that drive the green economy in Indonesia, namely the natural phenomenon of the lunar cycle, especially the new moon and full moon, which are still being debated among Indonesian and global investors regarding their influence on the resulting price patterns. According to (Dharma et al., 2024), a recent study in Indonesia found that the new moon has a significant positive effect on increasing abnormal returns, while the full moon does not affect abnormal returns. On the other hand, (Pramono & Basana, 2022) found that the new moon has no significant effect on increasing stock returns, while the full moon has a significant effect on stock returns.

Market behavior caused by the lunar cycle can be measured using various methods, one of which is abnormal returns. This theory measures actual returns and compares them with expected returns. This method is effective for assessing differences before and after new moon and full moon events. For example, research by (Octaviani & Harianti, 2021) shows significant differences in trading activity and abnormal returns before and after a company implements a stock split. Other research by (Prayogo et al., 2022) indicates significant differences in abnormal returns before and after a stock split. The lunar cycle is a long-standing phenomenon that affects many aspects of life, from ocean tides and animal behavior to human sleep patterns and moods (Chakraborty, 2014) and (Dubey, 2024). According to (Dichev & Janes, 2001), the lunar cycle influences investment decisions. Investors tend to be more optimistic during the new moon period and pessimistic during the full moon period. The full moon phase influences human sleep. This occurs because humans are exposed to moonlight, which affects sleep time and duration because the body initiates the production of the hormone molatonin in the light-sensitive pineal gland at night (Casiraghi et al., 2021) and (Chakraborty, 2018).

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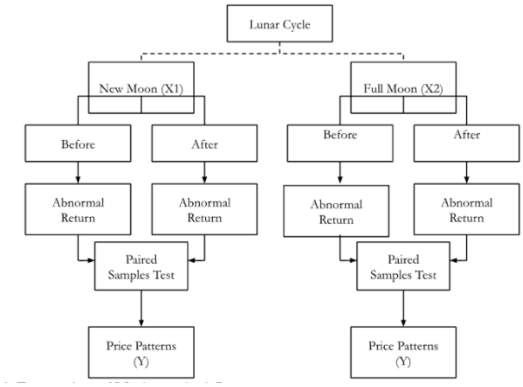
This study was conducted to test for differences before and after the lunar cycle in stock price patterns on the SRI KEHATI index. The urgency of this study lies in understanding and providing new insights into the influence of factors other than macro, micro, and fundamental factors that can influence the stock price performance of sustainable stock indices, such as the SRI KEHATI Index, which are rarely studied in the Indonesian capital market. This can open new insights into stock price analysis. The findings of this study are expected to serve as a reference for investors and market analysts in understanding the dynamics of stock prices influenced by natural phenomena, particularly the lunar cycle. Based on the previous explanation, the objectives of this study are as follows:

1. Is there a difference before and after the new moon in the stock price pattern of the SRI KEHATI index?
2. Is there a difference before and after the full moon in the stock price pattern of the SRI KEHATI index?

METHOD

This study uses quantitative research by testing hypotheses to find differences before and after the lunar cycle event that occurs by dividing 3 days before and 3 days after each new moon and full moon event. According to (Sugiyono, 2020), quantitative research can be interpreted as research based on positivism used to study a specific population or sample, using data and research instruments, and quantitative data analysis to test the hypotheses that have been applied. The research design used in this study is as follows:



According to (Hartono, 2022), abnormal returns can be calculated using a mathematical equation formulated as follows:

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$ERi=\alpha+\beta(ERm)$

ERi = security return

α = intercept or expected value of the security return

β = slope or coefficient that measures the change in security return due to changes in market return

ERm = Market index return

Then, after this calculation, the next calculation is to calculate the abnormal return:

Ari.t = Ri.t - E(Ri.t)

Ari.t = Ri.t - E(Ri.t)

Ari.t = abnormal return for stock i on event t (or day t)

Ri.t = actual return for stock i on day t

E(Ri.t) = expected return for stock i on day t

RESULT AND DISCUSSION

The historical price data in this study were taken from the idinvesting website, while new moon and full moon data were taken from timeanddates. The study population consisted of 45 stocks included in the SRI KEHATI index for five consecutive years. Purposive sampling was used, resulting in a sample of 11 stocks that met the criteria. The calculations and groupings yielded a total of 4,086 data points before and after the new moon and full moon. The data for pre- and post-new moon events totaled 3,960, with an average period of 660 from t-3 to t-1 days before the new moon and 660 from t+3 to t+1 days after the new moon. For full moon events, the data for pre- and post-full moon events totaled 4,086, with an average period of 681 from t-3 to t-1 days before the full moon and 681 from t+3 to t+1 days after the full moon.

Data collection was conducted by collecting historical closing prices of sample stocks on specified days within the observation window. The data was then processed to calculate abnormal returns using a market model. This method allows for the calculation of abnormal returns without using an estimation period. This test was conducted to detect differences in average abnormal returns between the periods before and after each lunar phase using a paired sample test in SPSS. The data processing for this study used SPSS, and the results showed no difference in abnormal returns before and after the new moon. Similarly, during a full moon, no differences were found

before and after the full moon. This indicates no changes in price patterns. This indicates no differences in price patterns before and after a new moon or a full moon in the stock price patterns of the SRI KEHATI index. Based on the existing results and following Dow's theory by (Rhea, 1932) in categorizing patterns, price patterns before and after a new moon or a full moon tend to follow or continue existing patterns (continuous trends).

The new moon phenomenon, a temporary anomaly that frequently occurs in the market, does not significantly impact the pre- and post-stock price pattern differences. This phenomenon frequently occurs, resulting in more stable investor emotional reactions. Investors respond to this event with nearly identical emotional responses. This market reaction indicates that the new moon phenomenon has no impact on market behavior, despite the nearly significant result of 0.095. Although the market is highly emotional and sensitive, leading to fear and greed, this phenomenon does not significantly impact or contribute to market emotions. This study shows that the new moon does not contribute to changes in price patterns. Other factors can influence investor decisions and emotions, such as emotional maturity and confidence in holding, buying, selling, or not buying shares, news with a significant impact on price, or the intrinsic value of a stock, which can influence investor decisions. Other factors, such as bid and offer factors, can also influence investors, given that the investor base in Indonesia is still relatively small and can be easily influenced by news or bid and offer factors.

Similar to a new moon, a full moon phenomenon does not influence abnormal returns, which can be categorized as determining price patterns. Research (Dichev & Janes, 2001) suggests that a full moon can influence investors' decisions regarding aggressive and pessimistic decisions. Exposure to moonlight at night can affect sleep duration and quality because the body is sensitive to light at night, and the brain releases excess melatonin, which can disrupt sleep quality and duration. However, this phenomenon was not proven to affect the market in this study; prices tended to be more stable, reflecting investor reactions, with no differences before and after the full moon. The market did not reflect aggressive decision-making, as evidenced by the results of the paired sample test, which showed an insignificant result of 0.417. Investor reactions were not particularly strong in moving market prices; patterns tended to remain the same and did not change

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the trend direction in response to this phenomenon. Other factors can influence investor decisions, even though the time window was narrowed to three days before and three days after. These factors could stem from psychological and emotional factors that influence investors' decisions to buy, sell, or hold their shares. The existence of news or issues that can be one of the factors that can influence stock prices, other factors such as the existence of bid offers that can influence investor decisions in buying or selling shares can be a factor that is one of the factors that does not cause differences before and after.

CONCLUSION

The lunar cycle is one of many psychological factors that can influence stock buying and selling decisions. People can choose to respond to these factors, such as following psychological influences or rejecting them, or even altering the effects of the lunar cycle. This study found that the lunar cycle, particularly the new moon and full moon, did not significantly differ in price patterns within the SRI KEHATI index, either before or after the events. The test results showed a significance value of 0.095 for the new moon, which is greater than 0.05, the standard criterion for decision-making. Abnormal returns indicate no change in the pattern, indicating a continuation of the existing pattern, known as a trend.

The full moon test results showed a value of 0.417, which is greater than 0.05, the standard criterion for decision-making. These test results indicate no difference before and after the full moon. Abnormal returns indicate no change in the existing price pattern, but rather a continuation of the existing trend. Overall, the heterogeneity of findings in the literature indicates that the influence of lunar phenomena on stock markets is complex and contextual. The inconsistency of results across studies suggests the need for a more comprehensive consideration of moderating factors and mediating variables that may influence the relationship between lunar phases and financial market performance.

This research is expected to contribute to research related to the Indonesian capital market, particularly those that address astronomical phenomena, such as the moon phases, and the SRI KEHATI index. There are also limitations to this research that are expected to be further developed and expanded by adding or replacing variables or criteria that may influence the results. These

additions could include increasing the time and sample size with a longitudinal period, using moderating variables, using the lunar cycle that only coincides with weekdays, reducing the research period to increase the sample size, or replacing it with another index on the Indonesian stock exchange.

Discussion

The findings of this study indicate that the lunar cycle, specifically the new moon and full moon phases, does not produce significant differences in abnormal returns or price patterns within the SRI KEHATI Index over the 2019–2023 period. This result suggests that, in the context of sustainable stocks in Indonesia, lunar phases do not function as a systematic source of market anomalies. Although previous behavioral finance and financial astrology literature has often emphasized the potential influence of astronomical events on investor mood and decision-making (Dichev & Janes, 2001; Pesavento & Smoleny, 2015), the empirical evidence from this research points to a more rational and trend-following behavior among investors in the SRI KEHATI constituents.

When compared to prior studies, the results of this research provide an interesting contrast. Dharma et al. (2024) found that the new moon has a positive effect on abnormal returns in the Indonesian market, while Pramono and Basana (2022) reported that the full moon significantly affects stock returns in the LQ45 Index. Meanwhile, studies in other markets, such as Kapil (2021) in India, Kati and Demirici (2022) in Turkey, and Yousop et al. (2021) in Islamic countries, show mixed evidence regarding lunar effects. Some document higher returns or elevated volatility around certain lunar phases, whereas others find no consistent pattern. The absence of lunar effects in the SRI KEHATI Index implies that such anomalies may be index-specific, time-bound, or dependent on market structure and investor composition.

Several contextual factors may help explain why the lunar cycle does not significantly influence the SRI KEHATI Index. First, the index is composed of companies selected based on strong ESG (Environment, Social, Governance) criteria, which tend to attract more informed, institutionally oriented, and long-term investors (kehati.or.id, 2025). This investor profile is arguably less susceptible to short-term sentiment swings triggered by natural phenomena and more focused on fundamental and sustainability-related information. Second, the increasing

sophistication of investors, supported by digital information access, may reduce the role of non-fundamental signals such as lunar phases, especially in a niche index like SRI KEHATI that emphasizes responsible investment.

From a methodological perspective, the use of abnormal returns based on the market model and paired sample tests across symmetric windows (t–3 to t–1 and t+1 to t+3) around new and full moon dates provides a robust framework to detect short-term shifts in price patterns. The fact that no significant differences were found even with a relatively large number of observations (8,046 data points) reinforces the conclusion that the lunar cycle does not generate systematic trading opportunities in this index. The nearly significant p-value of 0.095 for the new moon suggests, at most, a very weak and economically negligible effect, insufficient to be considered a reliable anomaly in line with Dow Theory's notion of trend continuity (Rhea, 1932).

These results also contribute to the broader behavioral finance discussion by illustrating that not all theoretically plausible psychological or astronomical factors manifest in observable market outcomes. Although experimental and physiological studies show that lunar phases can influence human sleep, mood, and biological rhythms (Chakraborty, 2014; Casiraghi et al., 2021; Dubey, 2024), such effects may be attenuated or overridden in financial markets by stronger drivers such as macroeconomic news, corporate actions, regulatory changes, and liquidity conditions. In other words, the "signal" from the lunar cycle appears too weak compared to more dominant information flows affecting SRI KEHATI stocks.

At the same time, the heterogeneity of findings in the literature suggests that the impact of lunar phenomena is highly contextual. Market maturity, cultural beliefs, trading mechanisms, and the dominance of retail versus institutional investors may act as moderating factors (Ghalke et al., 2023; Trifan, 2021). For instance, markets with a high proportion of speculative retail traders and strong cultural or religious associations with moon phases might display stronger lunar-related anomalies than more institutionalized markets. In this sense, the SRI KEHATI Index, with its ESG orientation and relatively selective constituents, may represent a segment where rational and fundamental-based decision-making dominates over astro-psychological influences.

This study also has several implications for practitioners. For investors and analysts focusing on sustainable portfolios in Indonesia, the results suggest that lunar phases should not be used as

a basis for timing strategies within the SRI KEHATI Index. Instead, attention should remain on fundamental analysis, ESG performance, and macro-financial conditions. For academics, the findings underscore the importance of testing behavioral and astro-financial hypotheses across different indices and market segments rather than generalizing from a single sample. The non-significant results in this study are valuable because they help delineate the boundary conditions under which financial astrology may or may not hold.

Finally, the limitations of this research open avenues for future inquiry. The observation window was restricted to three days before and after each lunar phase; future studies could experiment with longer or alternative windows or distinguish between bull and bear market regimes. Additional moderating variables—such as trading volume, volatility, or investor composition—could also be incorporated to better capture conditional effects. Researchers might also compare the SRI KEHATI Index with conventional indices (e.g., IHSG, LQ45) or Islamic indices to examine whether sustainability or religious considerations influence sensitivity to lunar phenomena. Overall, while this study finds no evidence of lunar-cycle effects on SRI KEHATI price patterns, it strengthens the empirical foundation of behavioral finance by showing that not all hypothesized anomalies survive rigorous testing in specialized and sustainability-oriented segments of the market.

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