



ARE THE EFFECTS OF THE MOON ON MARKET MOVEMENTS ANALOGOUS? – A STUDY ON NSE INDIA

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ABSTRACT

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The paper belongs to the area of Financial Astrology, an uncharted field of analysis of securities. Investors' fraternity continues to find investing in the stock market an attractive and challenging venture. During the recent decade, the growth and development of the Indian stock market have been tremendous. While managing their investments in the stock market, investors most often utilize fundamental analysis and/or technical analysis. Although neither of these strategies is successful in determining when to enter into a transaction and when to exit it to maximize profits or reduce losses. The answer to this issue is financial astrology, which uses planetary positions to predict stock/index prices. In the study, the link between the NSE NIFTY and the Moon's passage through Indian astrology's zodiacal signs is explored. An analysis of historical data from March 2010 to April 2020 is used in this study. In this research paper, we examine whether the moon's conjunction with 12 distinct zodiac signs has significant bullish and bearish effects. Based on the study's findings, investors may be able to predict when to buy or sell stocks based on lunatic trends. Trends are determined by conjunctions that have an average positive return and those that have an average negative return. Further research is needed in term of investigating the relationship between psychology factors (heuristic bias, information ignorance, and other factors) and investment decision making by putting lunatic trends as intervening factor. The effect of moon on certain anomalies has to examine specifically. Additionally, the study adds to the body of literature on the impact of lunar factors on stock prices.

KEY WORDS: *Historical return, Moon, NSE NIFTY, Financial Astrology. Chi-Square test*

1. INTRODUCTION

For every economy to grow and develop, investment is essential. In addition to being the economic system's lifeblood, the financial market also serves as its artery. This is because it promotes the conversion of savings into investments, which are themselves converted into production and consumption. There is a wide range of investment opportunities available to prospective investors in a well-organized and efficient financial market. Investors are invited to choose one of two investment options viz. Alternatives with low risk and Alternatives with high risk. "Investment in equity shares of a different

company through stock exchanges, commonly recognized as an investment in the stock market is a prominent and widely acceptable alternative in the category of risky investment (Sahoo, A. P., 2021)". Stock market investing can be a dangerous investment option, which is why security research should be part of an investment management strategy. Therefore, to profit from the stock market, it is crucial to predict share prices in the future concerning risk and return. Herbst (2007) also researched the link between moon phases and market returns. The relationship between moon and returns was varied and not consistent. Herbst explicates the

daily returns volatility movement is inconsistent with moon phases. Herbst concludes that the moon cycle is not reliable to predict returns or price volatility. Sivakumar and Satyanarayan (2009) examined the relationship between the moon cycle and Bombay Stock Exchange returns over 17 years. They surmise that the moon cycle did link with the returns. Gao (2009) also examined the relationship between the moon cycle and market return in two major Chinese stock markets over 16 years. Gao concluded lunar phases did affect the stock returns. Gao showed the returns are relatively lower on the new moon and relatively higher on the full moon. Nonetheless, making definitive predictions about investment decisions on the stock market is difficult since stock prices fluctuate continuously and numerous issues can affect these instabilities. “Therefore, share price prediction always remains an area of interest amongst investors and researchers (Sahoo, A. P., 2021)”. Security analysis for the prediction can be approached in different ways. “The two most popular approaches for predicting share prices are fundamental analysis and technical analysis (Cao, M., & Wei, J., 2005)”. The gravity of the moon affects human behavior as 80% of the human body consists of water. In more academic studies, much research found the role of the moon phase on people's behavior. For instance, is the paper of Huston and Passerello (1971). They found a relationship between depressive behavior and the moon phase. Cunningham (1979) also found the relationship between the moon and the generosity of humans. In the finance area, some papers also have worked in investigating the role of the moon on the developed market. For a long-term investment, fundamental analysis determines which stocks to buy or sell. Share price movement is affected by fundamentals related to the economy, industry, and company. By analyzing historical charts and share prices, the technical analysis seeks to identify the best entry and exit prices to use for a trade based on a stop-loss requirement. To maximize profits or decrease losses, neither theory establishes the optimal entry or exit time from trades. As an alternative, Financial Astrology provides a solution to this dilemma.

2. FINANCIAL ASTROLOGY

“Financial astrology is a subset of astrology as a whole. Astrology is both an art and a science that studies the impact of celestial occurrences and events on human behavior as well as other social, cultural, economic, and political issues across the world. It forecasts stock or commodity prices, as well as foreign exchange rates, based on the positions of planets, stars, and signs (Zheng, Lu, Yuan, 2001)”. The value of various contributions provided by celestial entities is calculated and correlated with market prices. Several astronomical facts are used for explaining and forecasting market behavior. This is a tool that indicates when a stock should be purchased or sold. In addition, it predicts future price trends. Consequently, it provides us with an early alert to trend reversals. For example, if someone asks what the value of the share of Reliance would be in two years, fundamental analysis may be able to provide answers through its assessment of the company. “However, it is unable to provide an answer as to what level one should enter and exit a stop-loss position in Reliance Industries Ltd. A technical analyst might be able to answer this Even fundamental analysis forecasts the price for a longer period, implying at least three months (Bell, W. R., & Hillmer, S. C., 1983)”. A day or week's price movement of stocks cannot be predicted. “Technical analysis overcomes this constraint of fundamental analysis by predicting share prices even for the next hour (Crawford, A., 1988)”. However, none of the methodologies, but financial astrology, can answer the issue of the anticipated price trend of Reliance Industries between March 2030 and May 2030. Western countries even utilize financial astrology to filter trade calls based on technical research. In Western nations, the notion of financial astrology is quite widespread and adopted by the investing community as one of the techniques for security analysis. Western astrology, which dates back to the 17th century, is the foundation of the system. Our ancient Vedas may be credited with the origin of financial astrology thousands of years ago. Our ancient Vedic texts contain astrological concepts that are often regarded as superior and more scientific than their western counterparts.

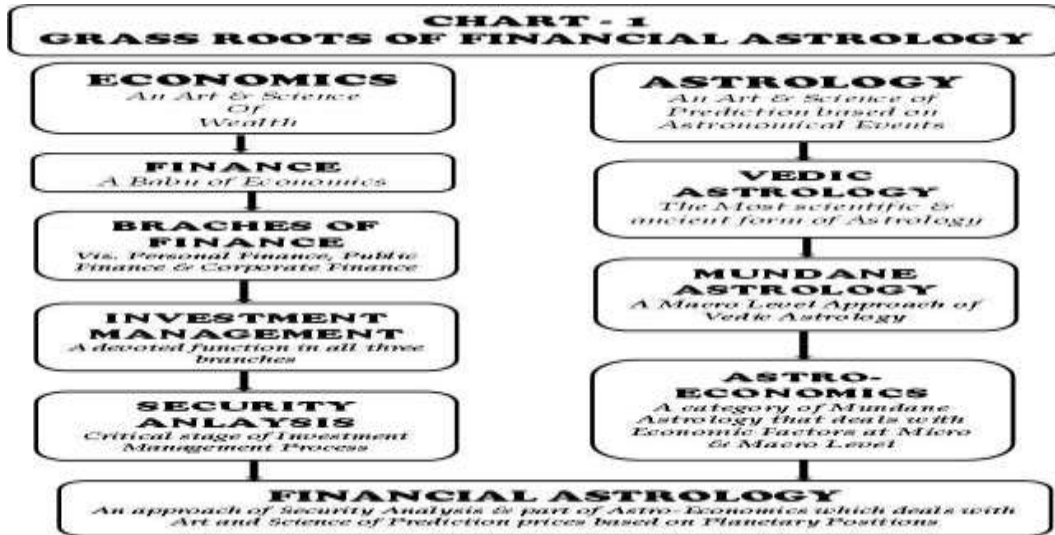


Figure:1 – Financial Astrology Chart Pattern

3. MOON & STOCK MARKET

In many countries worldwide, there are cyclical incongruities in share market volatility and returns that contradict the efficient market theory. This means that price fluctuations in stocks are not random. Globally, different studies are conducted to determine whether the moon has an impact on stock returns. Literature shows that the moon's location affects stocks and stock returns. There is no doubt that most of these studies investigate the shift from full moon to no moon. This is because they investigate how this affects the daily return of the moon to the Earth. Nevertheless, it is unclear whether the moon's alignments with other zodiac signs were

considered. This study examines Indian Vedic Astrology's relationship between lunar conjunctions with different zodiac signs and the movement of stock market prices. It is imperative to keep in mind that there are twelve distinct zodiacal signs; (below table no. 1), and 2.25 days after the new moon, the moon will transverse a zodiacal sign. When it moves from one zodiac sign to the next, the moon creates an amalgamation using other planets into the same signs. The following table lists the planets according to Indian Vedic Astrology. Moon and zodiac sign combinations were looked for as well as combinations of the moon and another planet to identify zodiac signs.

Table-1: List of Planets & Zodiac Signs

Sr. No.	Name of Planet	Sr. No.	Name of Zodiac Sign
1	Sun	1	Aries
2	Moon	2	Taurus
3	Mars	3	Gemini
4	Mercury	4	Cancer
5	Jupiter	5	Leo
6	Venus	6	Virgo
7	Saturn	7	Libra
8	Dragon Head (Rahu)	8	Scorpio
		9	Sagittarius
9	Dragon Tail (Ketu)	10	Capricorn
		11	Aquarius
		12	Pisces

4. REVIEW OF LITERATURE

Financial astrology is a highly unexplored area and hence a little literature are available. William Delbert Gann (1954), Louise McWhirter (1977), L. J. Jensen (1978) & Lt. Cdr. David Williams (1984) explains the effects of planetary movement on the stock price of the market USA. They also suggested a forecasting model based on their findings.

Steve Puetz (1995) explained the relationship between eclipses and stock prices in the USA. Arch Crawford (1996) provides a significant correlation ship between major crashes in the stock market led by the economic crisis and Mars & Uranus Cycle in the USA. Bill Meridian (2000) presented a study on the Mars–Vesta Cycle in stock prices of the USA market. Graham Bates, Jane Chzanowska Bowles & Jane Bowles (1994) concluded that for the US

economy, the sign position of the lunar nodes is important. Apart from that Jupiter, Saturn, Sun, Neptune, and Pluto are having a significant effect on US Economic indicators and stock return. N. Shiva Kumar & Sathyanarayana (2007) researched the impact of 'Rahu Kala' (An astrological event) on Stock market activity and the movement of the prices in the stock market. Surendra Sinha (1996), Umesh Puri (2004), and Dr. Ajay Jain (2006) published their observations about the effects of planetary positions on the stock market on the Indian Stock Market. However, they are based on the astrological properties of planetary positions. Apart from this, there is substantial evidence available that states that stock price movement in all the major countries of different continents is influenced by the lunar cycle. Thus, literature shows the evidence related to financial astrology which states the effects of events based on the movement of planets on the stock market. However, there is no strong evidence for research that traces the utility of Indian Vedic Astrology into price perdition, especially in India. Therefore, there is lots of scope for research in this unexplored area. The researcher may research to find out the effect of planetary position into signs and/or nakshatras and/or this and/or other all other aspects of "Panchang" on price movement and volatility of prices of shares, commodities, and currencies. Research can be undertaken to test the validity of astrological properties and rules of different planetary conjunctions and their impact on price movement. Over the above, research can be undertaken to trace the effect of some important astrological events like Eclipses, Panchak, Rahukal, etc. on the risk and return of the securities. An early study was conducted by Huston and Passerello (1971), examining the implication of certain moon phases on human behavior. They conclude that the full moon phase affects human behavior by altering the moods to be more depressive behavior, emotional disturbance, and normal changes. Dewey (1971) addresses that more births occur during waxing than during the waning moon; the death rate is increasing after the full moon. Further, Cuningham (1979) addresses that the full moon phase affects the generosity of humans. Other studies also show the effect of the moon on arson activity and violence (Katzeff, 1981), accidents at work (Nogueira, 1982), anxiety and depression (Wilkinson, 1997), and quality of life (Barr, 2000). In medical science, the mood of humans increases the psychotic disorder, violence, and other deviant behavior during the full moon phase.

5. OBJECTIVES

This paper investigates the impact of the moon passing through various zodiac signs according to the Vedic Astrological perspective on the inclusive movement of price in the stock market of India

6. RESEARCH METHODOLOGY

The current study employs an exploratory research design. In the study, the author endeavored to use financial astrology as a path to derive new market information which is comparatively unmapped yet. The information gathered for this study is secondary. ACE – Database & Software of Technical Analysis, was used to gather historic movement of prices in the stock market in India for this study. From April 2010 through March 2020, the moon's past moving trend transits as per Vedic astrology considering the zodiac signs were obtained from "Panchang" – "Hindu Vedic Calendar, provided by Prophet 2021" – a comprehensive software for Vedic astrology in India. The data for this study is the closing price of all publicly traded firms in various industries that have been accessible for trading on the stock market from their initial public offering. The equities index, on the other hand, might indicate the total movement of many sectors. As a result, the closing price of the NSE NIFTY index from April 2010 to March 2020 is used to represent the Indian equities market. The Judgmental or Purposive sampling approach is employed in this study. The acquired data's credibility was determined by cross-referencing it with other sources.

7. HYPOTHESIS

H1: The movement of share price and moon with or without signs of the zodiac are no analogs in nature.
H2: The positive and negative returns on daily basis on an average are not different.

8. DATA ANALYSIS & INTERPRETATION

The data acquired have been checked to find the validity and consistency and determined to be adequate. The above-mentioned two sets of data were then combined and displayed in a single table by ordering them in chronological order from April 1, 2010, to March 31, 2020. "The percentage change in the closing stock prices was used to compute the daily price fluctuation/movement or daily return in prices (Jing-Ming K., Jerry C., and Wood A., 2010)".

The stock prices were plotted against the combinations of one hundred eight (i.e., moon with different zodiac signs as well as the moon and other zodiac signs with particular zodiac signs) throughout the eighteen years under consideration. 101 of the 108 combinations satisfied the statistical data sufficiency criteria, allowing meaningful interference to be drawn. The combinations were then categorized based on how often they occurred over eighteen years.

To check whether all the given data is equally distributed KS test has been used and found the existence of normality in the data set. All of the data were discovered to be regularly distributed. The first winning trade percentage (Strike Rate) based on

closing prices has been calculated along with the established link of analogous movement of both moon as a single planet and after paring with other

planets with zodiac signs considering the gain to loss ratio on an average.

Table-1: Moon and zodiac signs (Transitory statistical values)

Name of Moon Combinations	Strike Rate	AGAL	P-Value of Chi- Square Test	P-Value (t-test)
Moon With Sagittarius	53.95	1.02	0.246	0.873
Moon With Virgo	57.07	0.92	0.055	0.538
Moon With Cancer	49.03	1.06	0.81	0.636
Moon With Aquarius	54.14	1.09	0.265	0.479
Moon With Capricorn	52.2	1.04	0.53	0.777
Moon With Aries	48.17	1.24	0.613	0.15
Moon With Pisces	46.91	1.16	0.389	0.33
Moon With Gemini	52.85	1.13	0.428	0.324
Moon With Leo	55.15	1.14	0.186	0.371
Moon With Libra	47	1.19	0.396	0.168
Moon With Scorpio	53.52	0.96	0.304	0.739
Moon With Taurus	56.12	0.98	0.086	0.875
Mars With Sagittarius	54.55	1.05	0.34	0.779
Sun & Moon with Sagittarius	60	0.67	0.655	0.603
Sun & Moon with Virgo	71.43	1.46	0.257	0.651
Sun & Moon with Cancer	63.64	1.13	0.366	0.833
Sun & Moon with Aquarius	42.86	1.52	0.705	0.731
Sun & Moon with Capricorn	50	1.32	1	0.655
Sun & Moon with Pisces	66.67	2.5	0.414	0.252
Sun & Moon with Gemini	57.14	1.47	0.593	0.613
Sun & Moon with Leo	62.5	1.72	0.48	0.495
Sun & Moon with Libra	66.67	0.63	0.414	0.621
Sun & Moon with Scorpio	66.67	2.82	0.414	0.294
Sun & Moon with Taurus	54.55	1.71	0.763	0.28
Moon & Mars with Sagittarius	58.33	4.61	0.564	0.078
Moon & Mars with Virgo	66.67	1.39	0.317	0.589
Moon & Mars with Cancer	55.88	1.27	0.493	0.395
Moon & Mars with Aquarius	74.07	0.91	0.012	0.849
Moon & Mars with Capricorn	64.29	1.65	0.285	0.15
Moon & Mars with Aries	50	1.23	1	0.619
Moon & Mars with Pisces	77.78	1.95	0.096	0.458
Moon & Mars with Gemini	55.56	0.96	0.564	0.933
Moon & Mars with Leo	60	0.86	0.317	0.635
Moon & Mars with Libra	52.94	1.78	0.808	0.03
Moon & Mars with Scorpio	54.55	1.39	0.763	0.256
Moon & Mars with Taurus	78.95	3.99	0.012	0.003
Moon & Mercury with Sagittari	57.14	1.38	0.705	0.405
Moon & Mercury with Virgo	50	1.08	1	0.904
Moon & Mercury with Cancer	62.5	1.54	0.48	0.316
Moon & Mercury with Aquarius	66.67	0.81	0.414	0.601
Moon & Mercury with Capricor	58.82	0.8	0.467	0.627
Moon & Mercury with Aries	80	0.67	0.18	NPC
Moon & Mercury with Gemini	66.67	0.54	0.414	0.675
Moon & Mercury with Libra	50	4.26	1	0.38
Moon & Mercury with Scorpio	70	0.54	0.206	0.534
Moon & Mercury with Taurus	80	1.79	0.058	0.424
Moon & Jupiter with Sagittarius	66.67	0.75	0.046	0.048
Moon & Jupiter with Virgo	53.33	0.9	0.796	0.828
Moon & Jupiter with Cancer	50	1.04	1	0.934
Moon & Jupiter with Aquarius	54.55	3.39	0.763	0.386
Moon & Jupiter with Capricorn	50	1.24	1	0.649
Moon & Jupiter with Aries	55.56	1.28	0.637	0.543
Moon & Jupiter with Pisces	37.5	1.73	0.221	0.095
Moon & Jupiter with Gemini	80	0.79	0.18	NPC
Moon & Jupiter with Leo	56.25	1.3	0.617	0.513
Moon & Jupiter with Libra	56.25	1.09	0.48	0.784
Moon & Jupiter with Scorpio	50	1.34	1	0.074

Moon & Venus with Sagittarius	90	3.22	0.011	NPC
Moon & Venus with Virgo	85.71	1.43	0.008	0.32
Moon & Venus with Cancer	37.5	2.45	0.48	0.569
Moon & Venus with Aquarius	44.44	1.35	0.739	0.628
Moon & Venus with Capricorn	42.86	2.24	0.705	0.472
Moon & Venus with Aries	57.14	0.89	0.593	0.7
Moon & Venus with Pisces	53.85	1.04	0.695	0.903
Moon & Venus with Gemini	50	1.32	1	0.643
Moon & Venus with Leo	55.56	1.08	0.637	0.901
Moon & Venus with Libra	92.31	6.03	0.002	NPC
Moon & Venus with Scorpio	71.43	5.24	0.257	0.121
Moon & Venus with Taurus	46.15	1.72	0.782	0.215
Moon & Saturn with Virgo	72.73	1.8	0.033	0.108
Moon & Saturn with Cancer	61.54	0.81	0.15	0.511
Moon & Saturn with Aquarius	48.89	1.08	0.881	0.695
Moon & Saturn with Aries	57.14	0.93	0.593	0.91
Moon & Saturn with Pisces	63.16	1.2	0.251	0.722
Moon & Saturn with Gemini	44.74	1.34	0.516	0.28
Moon & Saturn with Leo	55.56	1.06	0.637	0.889
Moon & Saturn with Taurus	66.67	0.59	0.317	0.03
Moon &Rahu with Sagittarius	56.52	0.95	0.532	0.867
Moon &Rahu with Virgo	56.52	1.32	0.532	0.459
Moon &Rahu with Cancer	59.09	1.14	0.394	0.67
Moon &Rahu with Aquarius	43.48	1.56	0.532	0.392
Moon &Rahu with Capricorn	87.5	0.76	0.003	0.126
Moon &Rahu with Aries	56	1.04	0.549	0.906
Moon &Rahu with Pisces	50	1.55	1	0.356
Moon &Rahu with Gemini	56.25	1.46	0.617	0.45
Moon &Rahu with Leo	53.85	1.43	0.695	0.268
Moon &Rahu with Libra	52	1.04	0.841	0.888
Moon &Rahu with Scorpio	50	1.26	1	0.535
Moon &Rahu with Taurus	73.33	1.36	0.071	0.435
Moon &Ketu with Sagittarius	65.22	1.42	0.144	0.23
Moon &Ketu with Virgo	52.63	1.68	0.819	0.181
Moon &Ketu with Cancer	54.55	1	0.67	0.991
Moon &Ketu with Aquarius	58.82	0.74	0.467	0.603
Moon &Ketu with Capricorn	57.14	1.28	0.45	0.482
Moon &Ketu with Aries	54.55	1.15	0.602	0.515
Moon &Ketu with Gemini	45	1.38	0.655	0.462
Moon &Ketu with Leo	50	1.43	1	0.429
Moon &Ketu with Libra	52	1.04	0.841	0.888
Moon &Ketu with Scorpio	56	0.95	0.549	0.881
Moon &Ketu with Taurus	60	0.79	0.371	0.511

Source: Author’s Calculation in SPSS25

“The daily Average Gain to Average Loss ratio was determined using the ratio of positive to negative days based on the daily closing price (Bell, W. R., & Hillmer, S. C., 1983)”. The chi-square test is used to determine if certain planetary conjunction is highly related to stock price changes daily. The results of these analyses are used to determine whether or not astrological alignments have a major impact on stock prices.

H1 is rejected in those pairings with a P-Value of less than 0.05, showing that there is a substantial relationship between the transit of the moon and price movement. On the Average Gain to Average Loss

ratio, a two-sample independent T-Test is performed. H2 is rejected in those combinations where the P-Value is less than 0.05, showing that there is a substantial difference between the average daily positive and negative returns.

9. FINDINGS

In the research, researchers determined whether several different conjunctions have a bullish or bearish impact on price movement and how significant their relation is to price movement. Additionally, the findings determined the vigour of bearishness or bullishness, which ranged from

moderate to highly significant. Trends are determined by conjunctions that have an average positive return and those that have an average negative return. Below are the conditions given for determining the level of bullish or bearish intensity, ranging from moderate to highly significant to

excessively significant i.e., SR and Average Gain to Loss ratio should be 1. The multiples of SR and AGLR should be higher than or equal to ninety and both chi-square and t-test outcomes must be significant in case of excessive, highly, and moderately bullish and bearish trends.

10. DISCUSSION

BULLISH

Excessively Significant Bullish

✓ Moon & Mars with Taurus sign

Highly Significant Bullish

✓ Moon & Venus with Sagittarius sign

✓ Moon & Venus with Virgo sign

✓ Moon & Venus with Libra sign

✓ Moon & Saturn with Virgo sign

Moderately Bullish

✓ Moon & Mars with Virgo sign

✓ Moon & Mars with Pisces sign

✓ Moon & Mercury with Cancer sign

✓ Moon & Jupiter with Aquarius sign

✓ Moon & Venus with Sagittarius sign

✓ Moon & Venus with Virgo sign

✓ Moon & Venus with Scorpio sign

✓ Moon & Rahu with Taurus sign

Moon & Ketu with Sagittarius sign

✓ Sun & Moon with Virgo sign

✓ Sun & Moon with Pisces sign

✓ Sun & Moon with Leo sign

✓ Sun & Moon with Scorpio sign

✓ Sun & Moon with Taurus sign

The study found which specific conjunctions affect price movements and how bullish or bearish they are. The results also distinguished between moderate, extremely significant, and very significant levels of bearishness or bullishness. In determining the effects of the moon's conjunction with various zodiac signs throughout its transit, the following characteristics have been derived from the statistical analysis and interpretation of the results. To determine the trend, we look for conjunctions that provide an average positive return, while conjunctions that do the opposite are deemed bearish. An amplitude scale from moderate to highly significant to excessively significant is used to determine whether a trend is bullish or bearish in this study.

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BEARISH

Excessively Significant

Bullish:

None

Highly Significant Bearish

✓ Moon & Mars with Libra sign

Moderately bearish

✓ Moon & Mars with Sagittarius sign

✓ Moon & Mars with Capricorn sign

✓ Moon & Mercury with Libra sign

✓ Moon & Mercury with Taurus sign

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