
From Holy Dips to Market Dips: Analysing the Relationship Between the Kumbh Mela and SENSEX

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Abstract

The following study attempts to find and establish, a relation between the commencement of the Kumbh Mela and the sentiments in the Indian Capital Market. This relation takes into consideration, the fluctuations experienced by the Standard and Poor (S&P) Bombay Stock Exchange (BSE) SENSEX from the year, 2010 to 2025.

A thorough analysis of SENSEX required a comprehensive deep- dive into the same, which was achieved by studying the investment patterns exhibited by not only, the Foreign and Domestic Institutional Investors (FII/DIIs), but also Gold Exchange Traded Funds (ETF's). A correlational study was undertaken, identifying SENSEX as the constant variable, while Gold ETF's and FII/DIIs were recognized as the dependent variables.

In order to provide a solid foundation for this correlational study, the use of Descriptive Statistics was imperative. The study revealed that, the Market sentiments were bearish during the period of the Kumbh Mela. Investors often opted for 'safe' assets, one of them being Gold ETF's, especially when the SENSEX was plummeting. This was done to ensure that their capital remained safe. However, there have been instances when the investors being overly optimistic, continued investing in the Markets despite the obvious negative sentiments.

An inverse relationship between Gold ETF's and SENSEX was quite evident, courtesy of the study. The correlational study between FII/DIIs and the SENSEX during the Kumbh period however, reaped interesting observations. Although, the over- arching results supported similar conclusions as the Gold ETF's study, there were situations when the correlational figures turned out to be positive, albeit a rare phenomenon.

These studies explore the psychological and cognitive mindsets of investors and their behaviour when it comes to Financial Markets. They seem to be irrational at times, when it comes to decision- making, and this factor is also attributable to the existence of certain cognitive and behavioural biases. Investors often rely on their intuitions, due to which, investments seem to be misaligned when compared with the Market outlook. Overall, the Kumbh Mela was not the sole factor responsible for the oscillations in the Capital Markets, but it was one of the biggest contributors of the same.

Keywords- SENSEX, Kumbh Mela, Gold ETF, Institutional Investments, Behavioural biases

JEL Classification- G1, G4

1. Introduction

Kumbh is an Indian Religious pilgrimage and mass gathering which takes place once every 6, 12, and 144 years. The Ardh Kumbh occurs once every 6

years, the Purna Kumbh occurs once every 12 years while, the Maha Kumbh, the grandest of them all, occurs once every 144 years. 2025 marks the year of the Maha Kumbh, which last took place in the year 1881. It is expected to host a gathering of around 60 crores which would mark the 2025 Maha Kumbh as the largest event ever held.

The S&P BSE SENSEX is an Indian stock market index, representing market performance of the 30 largest companies forming a part of the index. These companies belong to various sectors, from Banking, to Information Technology to, Automobiles, and many more.

The companies in the BSE SENSEX are selected based on their Free-Float Market Capitalization, among other significant criteria. SENSEX is listed on the Bombay Stock Exchange (BSE) and is considered as a barometer of India's stock market performance. SENSEX returns and movement over a given time frame, can be an indication of the volatility within the capital markets of the country.

While the Kumbh and SENSEX may seem unrelated, there seems to be an innate connection between the two, which this paper attempts to understand and establish. Furthermore, the paper explores the factors which contribute to the strengthening of this inter-relatedness, which are, Kumbh's association with Gold, SENSEX and other factors. The paper also attempts to establish the significance of behavioural biases that contribute to investment decisions taken by the public during the Kumbh season. Flows of Foreign Institutional Investors (FII) and Domestic Institutional Investors (DII) have also been analysed to prove the existence of a significant relationship.

2. Review of Literature

(Verma et al., 2024) studied the factors affecting the decision-making of an investor in financial markets, the specific focus of the authors was to refer investor's emotions and how events such as Festivals, pandemic, sport matches affect the investor's decision-making. The design of the Research was in sync with qualitative research and the specific tool used was exploratory interview which was semi structured.

(Białkowski, 2012) examines the impact of Ramadan on stock returns in 14 Muslim-majority countries from 1989 to 2007. They find that stock returns during Ramadan are nearly nine times higher and less volatile than the rest of the year, attributing this to positive investor sentiment driven by religious and social influences. The study rules out alternative explanations such as liquidity changes and calendar anomalies, concluding that psychological and behavioural factors significantly shape market behaviour during Ramadan.

(Ghazali, 2020) investigates gold's role as a diversifier, hedge, and haven against stock market losses in five countries. Using volatility models and TGARCH specifications, they find that gold serves as a strong hedge in India and the US, while acting as a diversifier in China.

(Chauhan, 2020) analyses herd behaviour in the Indian stock market, finding that it is more prominent in large-cap stocks than in small-cap stocks. Using cross-sectional absolute deviations of returns, they show that herding significantly influences asset pricing. Their study integrates herding as a risk factor in a multi-factor asset pricing model and concludes that investor behaviour deviates from rational decision-making, impacting market efficiency.

(Canepa, 2014) examines the impact of Islamic religious beliefs on stock market behaviour in Saudi Arabia. Their study finds that Shariah-compliant stocks exhibit higher returns and volatility compared to non-compliant counterparts. The authors attribute these effects to religious tenets shaping investor behaviour, influencing portfolio choices, and increasing market participation by individual investors.

(Baker, 2019) examines the relationship between financial literacy, demographic factors, and behavioural biases among Indian investors. Using survey data and regression analysis, they find that biases such as overconfidence, herding, and mental accounting significantly impact investment decisions. Financial literacy negatively correlates with herding and the disposition effect but positively with mental accounting. Gender, age, and investment experience also influence these biases,

with men and experienced investors displaying higher overconfidence.

(Wasiuzzaman, 2018) examines the relationship between the Hajj Pilgrimage and the return and volatility of the Tadawull All- Shares Index (TASI). The results showcase that the Pilgrimage plays a minute role in the returns generated by the Sectoral Indices and the TASI, however the author observes an increase in volatility. The author attributes this to the fact that volatility is directly influenced by the reduced participation of the Investors due to their spiritual sentiments.

(Raut, 2020) attempts to understand the Efficient Market Hypothesis and its application and relevance in the Indian stock market. The author tries to figure out whether the investment decisions taken by Indian investors are based on rational decisions or behavioural biases and assumptions. The author concludes that investors often rely on mental shortcuts or heuristics to finalize their decisions.

(Kalimuthu & Saleem, 2023) scrutinizes the effect of Festivals on the performance of Indices like the Nifty 50 and other sectoral indices. The study shows a positive relationship between the onset of festivals like Diwali, Christmas and Ramadan, and market returns, especially during and post the Covid- 19 Pandemic.

(Kumar et al., 2019) tries to demonstrate a causal relationship between Forex, Gold, Oil Prices and the Indian stock market. The test yields a positive relationship between the variables and key Indian indices like the BSE SENSEX

(Goyal et al., 2010) Festivals are occasions where Indians spend a lot and spread happiness in their neighbourhood. We Indians take pride in celebrating every festival with the same enthusiasm. During the festive season, the stock market is also impacted due to changes in consumer spending.

(Lingaraja et al., 2019) Hindu Dharma associates every planet and star to a god and one such is Moon. There is lunar and solar eclipse known as full and new moon respectively. Surprisingly lunar eclipse also has an impact on stock market and sentiments of Indian investors. Quantitative tools like descriptive statistics, GARCH (1, 1) model and Granger causality is used to test the hypothesis and

study the impact of moon cycle on stock market volatility.

(Aggarwal, 2022) Two kind of groups invest in the Indian stock market, DII (Domestic Institutional Investors) and FII (Foreign Institutional Investors). The key focus is to study the period when DII exceeded FII by a significant margin and whether stock market volatility was impacted during those periods. The risk of volatility prevails because of both FII and DII although might have the same investment in terms of monetary value but the stocks in which they invest will be significantly different.

(Chatterjee, 2020) examines how personal cultural values shape stock trading behaviours within an emerging market setting. The theory of planned behaviour is applied to analyse the data of 259 Indian participants using structural equation modelling. Perceived financial effectiveness and risk tolerance are found to have a positive impact on stock market participation intention.

(Mishra et al., 2010) investigate the directional link between Indian domestic gold prices and stock returns. Employing a Vector Error Correction Model with data from January 1991 to December 2009, the paper finds bidirectional Granger causality between gold prices and stock market returns. This indicates that gold price movements can forecast stock returns and vice versa.

(Filippi, n.d.) examines the potential of religious tourism to propel India's economic rebound after the COVID-19 pandemic. The research points out the devastating effect of pandemic related lockdowns on India's tourism industry and recommends emphasising on the nation's deep religious heritage to reboot the economy.

(Sharma, 2025) examines the complicated effect of the Kumbh Mela on India's social values. The study looks after a festival's historical background, its function in the promoting cultural unity, and its effect on social and economic setting. Sharma highlights how the Kumbh Mela is a site for spirituality, promotes communal harmony, and boosts local economies through tourism and commerce.

(Vanitha, 2019) examines the importance of gold in India and by analysing the trend observed in the gold

rate, compares the returns made on investing in gold to returns on other investment options (fixed deposit, provident fund). The method used for predicting gold pattern value is based on the hypothesis that there is a strong relationship between current price value and

previous year's value

(Ghalke, 2023) studies the socio-cultural ecosystems, along with global flow of foreign capital and cross-country investments and in India, having multiple stock exchanges and listed firms. They tested the abstinence hypothesis to examine the "new moon day" effect, which the dominant investors consider inauspicious, and the juxtaposition observed, based on an Indian festival Diwali, considered auspicious to make investments and start any revenue-generating activity (Muhurat trading).

(Hajjar, 2024) investigates whether religiosity promotes herd behaviour among stock market investors. Their finding that changes in religiosity, depending on whether high or low, cause opposing effects on herding helps to understand the contradictory findings of prior research. Religiosity further induces more herding when there is low economic freedom and the state is either corrupt or incompetent, anti-herding is promoted when institutional quality is high.

Research Gap

- Rudimentary understanding of the relationship between Kumbh and SENSEX
- No accounting of aspects of Behavioural Finance, Gold ETF and Institutional Investment
- Not taking into consideration multiple periods of Kumbh Mela

3. Research questions

1. What is the correlation between foreign FIIs & DIIs inflows and SENSEX performance during the Kumbh Mela period?
2. How does the demand for gold during the Kumbh Mela, correlate with movements in the SENSEX?
3. How do behavioural biases in stock markets shape investor behaviour during the Kumbh Mela?

4. Research objectives

1. To understand the correlation existing between FIIs and DIIs inflows and SENSEX performance during the Kumbh Mela Period
2. To recognize the demand for gold during the Kumbh Mela and how it correlates to the movements in the SENSEX
3. To examine the impact of behavioural biases on investor decision-making in the stock market during the Kumbh Mela, analysing how cognitive and emotional factors influence market trends and investment patterns during this period.

5. Research Methodology

The paper can be classified as Correlational and Quantitative research, which uses external sources of secondary data from published databases. The secondary data was evaluated in the following steps.

1) Methodology Check

The databases like BSE and Investing.com have been used to collect historical data of the Indices analysed in the paper, it was processed by using MS Excel and was interpreted by the authors.

2) Accuracy Check

The data collected from Investing.com has been double checked, for reliability and accuracy, with the official BSE website.

3) Topical Check

The data in the paper is during the periods of Kumbh from the past 15 years. Even though the paper incorporates empirical data, the analysis has also factored in the data as recent as March 2025, which signifies a minimal time lag.

4) Cost-benefit analysis

The data was collected from easily accessible and cost-free databases, so the cost-benefit was maximized.

The historical price data (secondary data) for the relevant indices in the three objectives were collected through published data source (External source) namely Investing.com (or official BSE website) for every Kumbh that happened since 2010.

In the first objective, to understand the relation between FII, DII and SENSEX during Kumbh, we found the correlation between BSE SENSEX(BSESN) and (FII, DII) by processing the data in MS Excel. The variables for this correlational study were SENSEX, FII and DII. The moderating variable will be the 'Time-period of Kumbh' will have some effects on the relation between the two variables. While the political and economic stability of the country as well as the global scenario are the confounding variables because the investments by both FII and DII are influenced by global sentiments and macro-economic conditions of the country. FII investments are more influenced by global sentiments whereas DII investments are more influenced by domestic stability in India. One major extraneous variable during 2021 Kumbh was the Covid-19 pandemic. For 2025 Maha Kumbh is the Russia Ukraine War. These 2 are more significant because these 2 factors are not considered while conducting the correlation.

In the second objective, to comprehend Behavioural Biases and how it affects Investor Decision-Making, we have considered the BSE SENSEX during the periods of the Kumbh Mela. This data was processed and analysed through Measures of Dispersion techniques such as Standard Deviation, Mean, Kurtosis, etc on MS Excel. The indicators which assisted us in identifying the presence and effect of such biases within Market Participants included Average Mean of Returns, Standard Deviation of such returns, and the Average Trading volume, considering the Kumbh period as well as the post Kumbh period. We acknowledge the presence of a plethora of extraneous variables, including but not limited to, Global Market sentiments, Trade wars, Economic slowdown etc.

In the third objective, to understand the relation between Gold and SENSEX during Kumbh, we found the correlation between BSE SENSEX(BSESN) and Nippon India ETF Gold BeES (GOLDBEES.BO) by processing the data in MS Excel. The variables for this correlational study were SENSEX and GOLD ETF. The moderating variable will be the 'Time-period of Kumbh' will have some effects on the relation between the two variables. While the political and economic stability of the country are the confounding variables.

6. Data and Analysis

Objective 1: To understand the correlation existing between FIIs and DIIs inflows and SENSEX performance during the Kumbh Mela period?

Ho: There is no relationship between FII, DII and SENSEX during Kumbh Mela

H1: There is relationship between FII, DII and SENSEX during Kumbh Mela

FII are foreign entities in the form of pension funds, hedge funds, investment funds that invest in the India capital market and bring in liquidity. They invest in stocks, bonds, mutual funds, Futures and Options (F&O). DII are Indian investors that invest in the domestic market. They usually invest with long term goal and their investment is in indirect relation with FII usually to provide stability in the market. Unlike FII their investment is more stable and less volatile.

Below is the correlation analysis of SENSEX, FII and DII.

Kumbh 2010 (Haridwar)

During the Q4 period, the global market was recovering from the 2008 crisis whereas the Indian market witnessed a strong rebound post 2009 bullish effect. During months of January and February, SENSEX had a neutralisation effect due to high bullish run. FII reduced its investment as they were aware of the potential loss from markets' self-correcting factor. DII kept investing money in the market to avoid a huge loss. Later, FII began investing in the Indian market again, driving the SENSEX prices up. Reserve Bank of India (RBI) increased the repo rate from 4.75% to 5.25% due to rising inflation. DIIs reduced because of this. However, the FII inflows overpowered the DII outflows causing SENSEX to rise from 15790 to 17558 in 2010. SENSEX and FII had a moderate positive correlation of 0.500. Weak global sentiments led FII to invest in India. Although it began since late February because the market was auto correcting itself initially. DII withdrew their investments early March due to RBI's inflationary measures leading to a weak negative correlation of -0.177 between DII and SENSEX. Conclusively, FII invested more whereas DII withdrew their

investment in order to avoid overvaluation of market.

Kumbh 2013 (Prayagraj)

Slow Indian market growth led to weak positive correlation of 0.289 between FII and SENSEX. RBI cut the repo rate from 8.00% to 7.75%, attracting FIIs. It fell in February as the cut was just 25 basis points whereas wholesale price index (WPI) inflation was at 6.5%. The Eurozone was in recession, demand for Indian exports reduced gradually leading to worsening of country's balance of payments. FII fell in March due to U.S. Reserves' speculation of quantitative easing. DII and SENSEX had a moderate negative correlation of -0.652 due to demoralising market conditions for investors. Even a cut in repo rate couldn't encourage them to invest more in the market.

Kumbh 2015 (Nashik)

Growth rate fell by 0.5% in Q2 compared to Q1 for 2016. SENSEX fell and following it, FII fell as well due to their weak positive correlation of 0.269. Again, the US fed rate was speculated to rise but

During Q4, SENSEX rose due to high FIIs in the market, the reason being Fed taking a dovish stance resulting in lower probability of interest rates rising. FII and SENSEX had a weak positive correlation of 0.23 and the reason for it was that during 17th Feb SENSEX rose by 80 points, but the FII fell by approximately 1800 points. This was momentary as the crude oil prices rose and high volatility in

Kumbh 2021 (Haridwar)

Q1 of 2021 both SENSEX and FII, DII had a strong negative correlation of -0.914 because of the Covid-19 scenario. SENSEX expectedly fell by 3000 points in a span of 20 days because of the second wave and its peak. FII had strong net buyers. As April progressed, their position improved since RBI

Kumbh 2025 (Prayagraj)

During Q4 of 2025, there were expectations for the hospitality sector to boom and SENSEX to rise due to tremendous ritual visits by over 66 crore people. However, it fell by 4000 points during the same period suggesting that many other factors impact the SENSEX as well. FII had a weak positive correlation of 0.283 with SENSEX. The reason

RBI reduced the repo rate from 7.25% to 6.75% resulting to FII outflows but lower than expected. Despite the SENSEX falling, DIIs kept on investing to avoid market crash leading to a weak negative correlation of -0.327. However, the SENSEX kept on falling due to higher net impact of FII outflows.

Kumbh 2016 (Ujjain)

During Q1 of FY17, India's growth rate was at 7.9%. This resulted in FII inflows being high. Market falls had no impact on FIIs which is represented by a moderate negative correlation of -0.538. However, indications of rising US fed rates led to fall in FII. Moreover, Chinese economy had a low growth rate of 6.7% which influenced FII decisions negatively in terms of global trade. The DII value was negative because their investment from F&O fell, and it was redirected to normal investment. However, the net inflow of 350.6 stabilizes the situation and hence, there is a weak negative correlation of -0.107.

Kumbh 2019 (Prayagraj)

European market later. DIIs reduced in Q3 due to low Gross Domestic Product (GDP) growth rate. During the months of February and March, DII investments were volatile because of the Lok Sabha elections and RBI reduced the repo rate from 6.5% to 6.25%. This volatility led to a weak negative correlation of -0.10, which has little or no significance.

had announced measures to boost liquidity as well as US bonds were performing well. DIIs were continuously being made. Yet, it was the strong FII outflow which was a concern. The DII continued investing to avoid a market crash and the introduction of liquidity schemes by RBI further gave them confidence. SENSEX and DII had a moderate negative correlation of -0.596.

being that FII had strong net sellers across the period and the SENSEX was also falling during the same period. Donald Trump had announced reciprocal tariffs as well, which had a negative influence on FII. To avoid a market crash, DIIs were made in the market heavily despite SENSEX's decline. RBI reduced repo rate by 25 basis points which gave domestic investors confidence. There was a positive correlation between FII and SENSEX as well as DII

and SENSEX because there were few periods where the outflows were relatively lower by FII when RBI reduced the repo rate and due to market corrections as well. The positive correlation between DII and SENSEX has no relevance because its just 0.06.

On the basis of the above analysis, it is derived that SENSEX plummeted in 4 out of 7 Kumbh which is taken into account with the most prominent fall during the Maha Kumbh mela. Moreover, during the rest of the Kumbh as well, the rise in SENSEX is not very significant. In 5 out of 7 Kumbh, the relation between FII and DII is also inverse which is usually a normal case scenario. During the Maha Kumbh, while FII had a correlation of 0.28 the DII just had a correlation of 0.067 which is insignificant. It means that there was only one instance when DII and FII had a similar correlation. However, during Kumbh there is no significant change in the relationship between FII and DII, which means that during spiritual events as well, FII and DII have the same sentiments because the macro-economic conditions change frequently. Therefore, H1, which is the alternate hypothesis is rejected and Ho, which is the null hypothesis is accepted.

Objective 2: To examine the impact of behavioural biases on investor decision-making in the stock market during the Kumbh Mela, analysing how cognitive and emotional factors influence market trends and investment patterns during this period.

Behavioural Finance is the field of study to understand the financial decision-making take place among people. This field directly contrasts the traditional finance theories. Behavioural Finance is one of the factors why securities are priced away from their fair price. Behavioural Finance is important to understand the role of biases in Security selection and Transaction decision, Risk management, Irrationality.

We have identified a total of 6 Behavioural Biases which we believe are the ones that frequently impact Financial Markets, and the knowledge of which would significantly boost Informed Investment Decisions, Risk Management and mitigate Irrational Behaviours.

Illusion of Control Bias:

Illusion of Control Bias refers to a situation where an Individual believes that he/she can control and affect outcomes, which is not the case. This is further organised into 3 biases: Illusion of Knowledge, Self-Attribution, Overconfidence.

Availability Bias:

Availability Bias refers to a situation where an individual puts undue emphasis on information that is readily available, easy to recall, or based on personal experience or knowledge. It results in Individuals to give much significance to events that have occurred recently/ easier to recall.

Framing Bias:

Framing Bias refers to a situation when an individual's decision is highly influenced by how a question, fact, or statement is framed. It results in both gains and losses when in the aspects of market.

Loss-Aversion Bias:

Loss-Aversion Bias refers to the tendency of Financial Market Participants (FMP) to strongly prefer avoiding losses to achieving gains. It simply means that individuals tend to steer clear of losses over making gains, even if the potential gain is larger. This bias demonstrates an individual's risk-bearing capacity, as they prefer to book profits early to avoid losing their gains, while taking on larger risks to recover increasing losses.

Regret-Aversion Bias:

Regret-Aversion Bias is an emotional bias in which people tend to avoid making decisions out of fear that the decision will turn out poorly. It has 2 aspects to it: Regret from Action and Regret from Inaction. The former refers to regret felt by an individual due to a loss suffered because of an action, while the latter refers to the regret felt because of missing out on potential gains by not taking any action.

Confirmation Bias:

Confirmation Bias is the tendency to look for and notice what confirms prior beliefs and to ignore or undervalue whatever contradicts them. Simply put, individuals actively seek out information that supports their existing viewpoints, while ignoring and discarding information that would be contradictory in nature.

Confirmation bias causes Market Participants to act irrationally and undertake spontaneous and erratic decisions. Investors choose to focus on only the positive information, while not giving heed to the negative and often paramount information.

These concepts are not just theoretical in nature but have had significant implications on Financial Markets around the world. One of the most prominent examples of Behavioural Finance affecting Investor Decisions, is the Bitcoin crash of 2022. 2021 showcased an uptrend rally of Bitcoin prices, soaring to around \$70,000. Bitcoin investors actively sought out information that supported their pre-existing optimism, while neglecting and ignoring warning signs predicting a Price correction. In June 2022, Bitcoin plummeted to around \$20,000. This case is a perfect example of the Confirmation Bias coming into play.

Indicators determining if biases have influenced SENSEX returns during Kumbh-Mela:

Past negative returns during Kumbh

The past negative returns during Kumbh act as an indicator to determine statistically if the market participants illustrated any bias. This phenomenon closely resonates to *Availability Bias*, these bias states that market participants excessively react to recent or easily recalled events. Here, it can be illustrated such that the participants might have recalled the past negative returns during a Kumbh, and acted upon it by aligning their prejudice, this might have led to ignorance of Fundamental analysis at that stage of market.

Presentation of Disseminated Information about negative returns during Kumbh

The presentation of information relates to the way in which media has presented the news about negative returns during Kumbh. This can be closely linked to *Framing Bias*, these bias states that market participants may get influenced in their reasoning about an investment by the way in which it has been presented. Generally, these act as a Nudge. Here, it can be established that market participants might have been influenced by the media narrative, and this could be linked with the negative returns during that or the next Kumbh.

Trading Volume during Kumbh

The Trading Volume of the BSE SENSEX during the Kumbh period acts as an indicator to determine statistically whether Financial Market Participants have exhibited characteristics of behavioural biases during decision- making. Loss Aversion Bias, Regret Aversion Bias and the Illusion of Control bias, can best be highlighted by analysing and interpreting the aforementioned information. Loss Aversion Bias talks about how individuals tend to steer clear away from financial losses, even if the potential gain is larger. This behaviour comes into play when there is an increase in Trading Activity during Financial downturn, especially during the Kumbh Period, as investors frantically try and minimize their losses. Regret Aversion Bias mentions that individuals often avoid taking decisions out of fear that the decisions taken would lead to negative implications. This behaviour can be best illustrated by a decrease in Trading Volume, irrespective of Market Sentiments. Illusion of Control Bias highlights an individual's

perception of being in control over Market outcomes, which can be best demonstrated by overconfident and a significant increase in Trading decisions.

Standard Deviation during Kumbh

Standard deviation (SD) acts as the measure of risk, and historically for a stock index; the SD has been around 0.5-1% on a daily returns' basis (considering a non-volatile market).

Period-wise Analysis of Behavioural Biases:

The analysis below is completely based on the indicators determining if biases have influenced SENSEX returns during Kumbh-Mela, that has been explained above. The analysis arrives to conclusions by not considering any extraneous variables in the capital markets.

Haridwar Kumbh, 2010

The first Kumbh which has been analysed, is the 2010 Haridwar Kumbh, which took place from the 14th of January 2010 to the 28th of April 2010. The first factor to be considered is the Mean of returns during the Kumbh period, which comes out to be - 0.006%. In the context of things, this is a miniscule figure which does not explicitly suggest any aspect

of Behavioural Finance to be taking place but rather a very minor downtrend can be observed in the variable being measured, in this case, the returns. The Standard Deviation of the returns is around 0.984%, a relatively large figure, considering the mean returns. However, this does not suggest that the returns are highly turbulent but rather suggests that the returns were slightly volatile and not to a large extent. The difference in trading volume during the Kumbh period and post the Kumbh period, is an interesting factor to consider. The difference is close to around 2 million, which could suggest that investors were unwilling to trade during the Kumbh period, leading to the conclusion that investors displayed characteristics of the Regret Aversion Bias.

Prayag Kumbh, 2013

The second Kumbh which has been analysed is the 2013 Prayag Kumbh Mela, which took place from the 14th of January 2013 to the 8th of March 2013. The three factors which have been considered for the analysis, all of them paint a rather underwhelming picture. The mean of the returns is around 0.005%, a slight improvement from the previous Kumbh, but minimal enough to not have any significant implications on the Financial Markets. The Standard Deviation of the returns is around 0.727%, yet again a positive sign, indicating higher stability of the returns. The difference in Trade volume is around 0.2 million, once again displaying a similar picture as the 2010 Kumbh. However, due to the difference being as small as it is, it is not enough to point out the presence of behavioural biases in decision making of investors.

Nashik Kumbh, 2015

The third Kumbh to be taken for consideration is the 2015 Nashik Kumbh Mela, which took place from the 14th of July 2015 to the 24th of September 2015. Mean returns, Standard Deviation and Trading Volumes of this period, demonstrate a change from the normal.

The mean of the returns is around -0.141%, which although is still quite insignificant considering the scheme of things, this figure can point out the existence of availability bias affecting investors and their decision-making capabilities. The Standard Deviation of the returns is around 1.325% which is

significant enough to suggest that there was a feeling of apprehension among investors, which led to irrational decisions and panic selling, moving the stock prices away from the mean. The difference in Trading Volume was around 1.2 million, but this time it was higher during the Kumbh period. This could suggest that investors were influenced by the Loss Aversion bias, leading to higher trades taking place.

Ujjain Kumbh, 2016

Kumbh in 2016 took place from April 22 to May 21, for about a month, resulting in 21 trading days.

In this period, after analysing the SENSEX data, it was concluded that the data had a standard deviation of 0.862%. This Kumbh period did not certainly have higher risk. This may indicate that market participants did not panic sell which generally moves the stock price away from the mean and increases SD.

For Loss-Aversion, Regret-Aversion, and Illusion of Control Biases; The average trade volume during this Kumbh was 12.08 million, the paper also has explored the trade volume Post Kumbh to draw any evident conclusion about the biases, but data of 21 trading days post Kumbh in fact showed more volume (12.86 million); which left the analysis with no conclusive evidence of influence by these biases.

For Availability Bias, the mean returns from previous Kumbh remained intact as both the periods had a return of around -0.1% on a daily returns' basis. This can potentially signify that the past negative returns have influenced market participants through availability bias.

Prayagraj Kumbh, 2019

Kumbh in 2019 took place from Jan 15 to Mar 4, for about two and half months, resulting in 34 trading days. In this period, after analysing the SENSEX data, it was concluded that the data had a standard deviation of 0.687%. This Kumbh period did not certainly have higher risk. This may indicate that market participants did not panic sell which generally moves the stock price away from the mean and increases SD.

For Loss-Aversion, Regret-Aversion, and Illusion of Control Biases; The average trade volume during this Kumbh was 18.40 million, the paper also has

explored the trade volume post Kumbh to draw an evident conclusion about the biases, data of 34 trading days post-Kumbh showed less volume (16.72 million); the analysis concludes that there is influence of these biases.

For Availability Bias, the mean returns for this Kumbh were around -0.02% on a daily returns' basis. This signifies those past negative returns of 0.1% in past two periods of Kumbhs have not been retained leading to no conclusive evidence about influence of availability bias.

Haridwar Kumbh, 2021

Kumbh in 2021 took place from April 1 to April 30, for about a month, resulting in 19 trading days.

In this period, after analysing the SENSEX data, it was concluded that the data had a standard deviation of 1.341. This Kumbh period certainly had higher risk. This may indicate that market participants did panic sell which generally moves the stock price away from the mean and increases SD.

For Loss-Aversion, Regret-Aversion, and Illusion of Control Biases; The average trade volume during this Kumbh was 13.13 million, the paper also has explored the trade volume Post Kumbh to draw any evident conclusion about the biases, but data of 19 trading days post Kumbh in fact showed more volume (13.77 million); which left the analysis with no conclusive evidence about influence of these biases.

For Availability Bias, the mean returns for this Kumbh were around -0.07% on a daily returns' basis. This signifies those past negative returns of 0.1% in past two periods of Kumbhs have not been retained leading to no conclusive evidence about influence of availability bias.

Prayagraj Kumbh, 2025

Kumbh in 2021 took place from Jan 13 to Feb 26, for 1 and a half months, resulting in 33 trading days.

In this period, after analysing the SENSEX data, it was concluded that the data had a standard deviation of 0.728%. This Kumbh period certainly did not higher risk. This may indicate that market participants did not panic sell which generally moves the stock price away from the mean and increases SD.

For Loss-Aversion, Regret-Aversion, and Illusion of Control Biases; The average trade volume during this Kumbh was 11.29 million, the paper also has explored the trade volume post Kumbh to draw an evident conclusion about the biases, data of 33 trading days post-Kumbh showed less volume (10.24 million); the analysis concludes that there is influence of these biases.

For Framing Bias, to conclude any influence of Framing bias on SENSEX returns during Kumbh, the media narrative in Jan 2025, about negative returns of SENSEX during Kumbh through articles, has been studied. There is no statistical evidence how the news about negative returns during Kumbh has been framed among market participants, but it is quite intuitive to assume that this factor would have also influenced.

Objective 3: To recognize the demand for gold during the Kumbh Mela and how it correlates to the movements in the SENSEX

Ho: There is no relationship between SENSEX and Gold ETF during Kumbh Mela

H1: There is a relationship between SENSEX and Gold ETF during Kumbh Mela

A gold exchange-traded fund (ETF) is a mutual fund that invests in gold bullion and tracks the price of gold. It's a low-cost way to invest in gold and can be bought and sold like stocks on stock exchanges. It is a passive investment option.

Below is the correlation analysis of SENSEX and Gold ETF.

Kumbh 2010 (Haridwar)

During the 2010 Haridwar Kumbh Mela, the correlation between SENSEX and gold ETF was 0.44861 which indicates that the relation is moderate. Since the correlation is positive but not too high suggesting that when SENSEX goes up, gold ETF also tends to go up but not at the same rate which can be seen in the first week of February where SENSEX rose from 15790.93 to 16152.59 whereas gold ETF just rose from 15.77 to 16.07. The market was in a recovery phase, post the 2008 financial crisis.

Kumbh 2010 (Prayagraj)

During the 2013 Prayagraj Kumbh Mela, the correlation between SENSEX and gold ETF was 0.69672 which indicates that the relation is between moderate to high levels. This strong positive correlation is not a likely situation in the market because Gold ETF is usually considered as a haven asset. The stock market was highly volatile across the globe hence the gold prices and SENSEX were falling. It was surprising that it was a period of Poorna Kumbh, which is considered a very auspicious period for Hindus, and they are usually likely to buy Gold but they did not.

Kumbh 2015 (Nashik)

During the 2015 Nashik Kumbh Mela, the correlation between SENSEX and gold ETF was - 0.72887 which indicates that the relation is strong negative. This correlation strongly validates that Gold ETF is considered as a haven asset by investors. This occurs usually in times of economic times or recession where investors move from riskier assets to safer assets. However, India's GDP growth rate for FY16 Q2 was at 7.4%. Despite this strong growth rate, SENSEX fell by 3000 points and became 25,863.50 from 28,112.31 suggesting that there were external factors influencing it. This was true as the Chinese stock market crashed which led to global slowdown fears.

Kumbh 2016 (Ujjain)

During the 2016 Ujjain Kumbh Mela, the correlation between SENSEX and gold ETF was - 0.99717 which indicates that the relation is strong negative. This relation shows that Gold is acting as a perfect hedge (safest investment), however the situation was different this time unlike the Last Kumbh held in Nashik. During the period of FY17 Q1, India had the status of one of the fastest growing economies. During this period the SENSEX rose from 25606.62 to 26,653.60, this rise in SENSEX was due to global market movements and expectations of good monsoons along with government reforms. The FII flows were also steady because the US federal reserve delayed its rate hikes. Thus, many investors saw this as an opportunity to maximise returns and shifted from Gold ETF to SENSEX justifying the strong negative correlation.

Kumbh 2019 (Prayagraj)

During the 2019 Prayagraj Kumbh Mela, the correlation between SENSEX and gold ETF was - 0.41493 which indicates that there is a moderate negative correlation. FY19 Q4 experienced the GDP growth rate of 5.8% which was the lowest in nearly 5 years. Elections were about to be held during April 2019, so SENSEX and Gold ETF were influenced by elections more than the Kumbh Mela because it was Lok Sabha elections, which holds a significant importance in the Indian Constituency.

Kumbh 2021 (Haridwar)

During the 2021 Haridwar Kumbh Mela, the correlation between SENSEX and gold ETF was - 0.18144 which indicates that there is very weak correlation. This period was heavily impacted by the second wave of covid 19, and the government expenditures were at its peak due to focus on vaccinating maximum population. The growth rate for FY22 Q1 was substantially at 20.1%. This growth rate seems to be unrealistic however, it was due to a low base effect from 2020. The SENSEX remained volatile in April particularly because that was the period where covid cases were rising. During this period, it was Covid-19 which had a greater influence on both the variables rather than the Kumbh Mela because the strength of Covid-19 (extraneous variable) was too strong.

Kumbh 2025 (Prayagraj)

During the 2025 Prayagraj Maha Kumbh Mela, the correlation between SENSEX and gold ETF was - 0.38972, indicating a weak correlation. The 2025 Maha Kumbh has significant significance because it was held after 144 years and was visited by around 66 crore devotees. Despite this the SENSEX fell by 4000 points during this period. Because of such a fall in SENSEX, investors began investing in Gold because of which Gold ETF rose from 66.66 to 71.1 during the period. Another reason would be that as the Maha Kumbh is very auspicious religious event, people would have purchased more of gold as well (which Indians usually do during any religious festival) which could have further driven the gold ETF prices.

7. Conclusion

The study was conducted to understand and analyse whether the Kumbh Mela- the largest religious gathering in the world had any significant impact on the Indian financial markets. The BSE SENSEX, FII/DII investments, and gold ETF were considered as separate variables as part of a correlational study that was conducted, with BSE SENSEX being the dependent variable and the other factors being the independent variables respectively.

Market data during the Kumbh and post Kumbh periods were considered for the analysis, and the results established the fact that the variables under consideration showcased similar correlational behaviours during the Kumbh as well as post the conclusion of the Kumbh. However, behavioural biases played a significant part in influencing the correlational study, resulting in notable deviations of the same.

Illusion of Control Bias, Availability Bias and the Loss Aversion Bias were some of the major behavioural biases affecting the decision-making capacity of Financial Market participants. This meant that, while the FII/DII inflows and Gold ETF's had a relatively stable relationship with SENSEX returns during the Kumbh period, the elements of Behavioural Finance showcased cognitive and emotional inconsistencies in individuals, leading to significant impact on SENSEX returns.

Scope of Research

- Extraneous Variables not controlled
- No Sentiment Analysis
- No advanced statistical tests/models

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