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Impact Of Muhurat Trading On Stock Return: A Case Study Of Page Industries Ltd.

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Abstract
This study examined the Muhurat trading effect on the equity returns of Page Industries Ltd. from 31st December 2012 to 31st December 2023 by using the non-parametric Mann-Whitney U test. The present study found abnormally high positive mean returns on Muhurat trading and post-Muhurat trading day. However, the abnormally high positive returns were not found statistically significant. Finally, this study concluded that the Muhurat trading effect does not exist in the stock return of Page Industry Ltd.

Keywords: *Muhurat trading, Textile and apparel industry, Mann Whitney U Test, Stock Market.*

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I. INTRODUCTION

Muhurat trading is a special trading session carried on in the Indian stock market on the evening of Diwali for an hour. This trading is considered very auspicious by the trading community in India. It is a symbolic and ancient custom that the trading community has continued to uphold and observe for centuries. As Diwali also marks the beginning of the New Year, It is generally believed that Muhurat trading on this day results in wealth and prosperity throughout the year. Since 2012 Sensex has ended on a positive note on Muhurat trading in seven years out of the last ten years. Since 2012, the only three times the Sensex actually, ended up degrading value on Diwali were during the Muhurat day trading sessions in 2012, 2016, and 2017 respectively. The following figure provides a glimpse of the performance of the Sensex, a flagship index of the Bombay Stock Exchange.

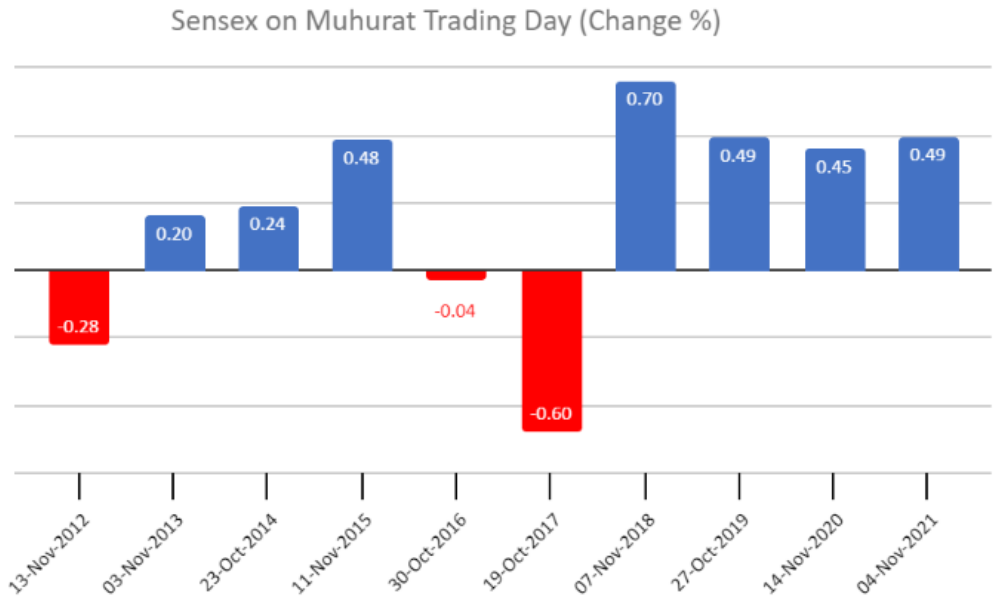

Figure 1.
Source: The Economic Times

II. REVIEW OF LITERATURE

By comparing the mean returns before and after festivals for various periods and using a paired t-test on the daily return series for the Sensex and Nifty from January 2003 to December 2012, Dhaval (2014) discovered that stock returns are not affected by holidays.

According to Hassan and Sarker (2018), the pre-and post-holiday return on the Dhaka Stock Exchange's DSE general index and DSE 30 index varied significantly. The study, which covered eight holidays from January 2013 to December 2017, took into account six fixed national holidays and two variable religious holidays in Dhaka. The hypotheses were tested using the non-parametric Wilcoxon signed-rank test. However, because of the short study time and potential lack of market fluctuations, the results of this study may not accurately depict the genuine impact of holidays.

In their analysis, Singh and Kansal (2010) showed that the incident significantly affected the return and volatility of the S&P CNX Nifty. To determine the influence of the event up to 15 days of trading from the union budget, they compared the return on it before and after the budget.

Agrawal et al. (2014) investigated the impact of Diwali on the Nifty Fifty Indices before and after the holiday. The results of their study, which used a paired "t" test to test their hypotheses, do not indicate any appreciable differences between the Nifty 50 Index return before and after Deepawali. However, because the study was only limited to one Index and was only conducted for a short time, the results might not be considered credible. The paired "t" test may not produce accurate results because the total data set used in this investigation was not normally distributed.

Pathak (2013) used daily and monthly data sets to investigate whether seasonality exists in Nifty return. He investigated the S&P CNX Nifty for this and reported that there was no day effect on volatility. Finally, he concluded there is no seasonality in Nifty daily and monthly returns.

After going through a brief literature review, we found a lack of study on Muhurat trading effects considering the stocks of the textile and apparel industry hence this study is necessary to conduct which will enrich the existing literature, providing a shred of new empirical evidence.

III. METHODOLOGY

Materials and Method

The daily closing stock prices have been collected from the website of the Bombay Stock Exchange, from 31st December 2012 to 31st December 2023. From the daily adjusted closing price, we calculated daily percentage stock returns by applying the logarithmic return formula.

$$R_{it} = ln\left(\frac{p}{P_{t-1}}\right) \times 100 \quad \text{----------(i)}$$

where,

R_{it} = percentage daily stock return at time i

ln = natural log,

P = present closing stock price at day (p)

P_{t-1} = closing stock price of the previous day (P_{t-1})

The date of Muhurat trading for the last years has been compiled from the website of the BSE and the Hindu Almanac, which has been arranged chronologically in Table 1.

Table 1. Muhurat trading in the Indian stock market

Year	Date of Muhurat trading
2013	03/11/2013
2014	23/10/2014
2015	11/11/2015
2016	30/10/2016
2017	19/10/2017
2018	07/11/2018
2019	27/10/2019
2020	14/11/2020
2021	04/11/2021
2022	24/10/2022

The non-parametric Mann-Whitney U test is used to compare two sample means that come from the same population because the data set utilized in this study is not normally distributed (see Table 2). The Mann-Whitney U test was used in studies by Novotná and Zeng (2017), Oran et al., (2018) and Bolar et al., (2020) to identify calendar anomalies such as holiday effect, weekly effect, etc.

Operational definitions
Pre-Muhurat trading: It means trading day immediately before Muhurat trading (T-1)
Post-Muhurat trading: It means trading day immediately after Muhurat trading (T+1)
Muhurat trading: It means a special trading session on the evening of the Diwali (T)
Regular trading: It means trading day throughout the sample period

Objective
To examine the effect of Muhurat trading on the stock return of the Page Industries Ltd.

Hypothesis
3. 4. 1
H_0 – Mean returns of Page Industries Ltd. on the day of Muhurat trading are not different from mean returns on regular trading day.
H_1 - Mean returns of Page Industries Ltd. on the day of Muhurat trading are different from mean returns on regular trading day.
3. 4. 2
H_0 – Mean returns of Page Industries Ltd. on the day of Muhurat trading are not different from pre - and - post-Muhurat trading returns.
H_1 – Mean returns of Page Industries Ltd. on the day of Muhurat trading are different from pre - and - post-Muhurat trading returns.
3.4.3
H_0 – Pre - and - post-Muhurat trading mean returns of Page Industries Ltd. are not different.
H_1 – Pre - and - post-Muhurat trading mean returns of Page Industries Ltd. are different.

IV. RESULTS AND DISCUSSION

Table 2. Descriptive statistics for Muhurat trading effect

Statistics	Muhurat trading	Pre-Muhurat trading	Post- Muhurat trading	Regular trading
N	10	10	10	2475
Range	5.59	4.78	8.41	25.87
Minimum	-1.12	-2.57	-3.15	-11.02
Maximum	4.47	2.21	5.26	14.85
Mean	0.48	-0.24	0.94	0.10
Std. Error	0.52	0.44	0.97	0.04
Std. Dev.	1.64	1.40	3.06	2.05
Variance	2.69	1.96	9.38	4.18
Skewness	1.74	0.18	-0.04	0.32
Kurtosis	3.76	**-0**.05	-1.69	3.09

(Source: author's calculation)

Table 3. Ranks

	Classification	N	Mean Rank	Sum of Ranks
Muhurat trading and regular trading	Muhurat trading	10	1368.25	13682.50
	Regular trading	2475	1242.49	3075172.50
	Total	2485		
Pre-Muhurat trading and Muhurat trading	Pre-Muhurat trading	10	9.20	92.00
	Muhurat trading	10	11.80	118.00
	Total	20		
Muhurat trading and post-Muhurat trading	Muhurat trading	10	10.20	102.00
	Post-Muhurat trading	10	10.80	108.00
	Total	20		
Pre-Muhurat trading and post-Muhurat trading	Pre-Muhurat trading	10	9.60	96.00
	Post-Muhurat trading	10	11.40	114.00
	Total	20		

(Source: author's calculation)

Table 4. Empirical results of Mann Whitney U Test for Muhurat trading effect

Test statistics for Muhurat trading effect				
	Mann-Whitney U	Wilcoxon W	Z-Value	P -Value
Muhurat trading and regular trading	11122.50	3075172.50	-0.553	0.58
Pre-Muhurat trading and Muhurat trading	63.00	118.00	0.98	0.35
Muhurat trading and post-Muhurat trading	53.00	108.00	0.23	0.85
Pre-Muhurat trading and post-Muhurat trading	59.00	114.00	0.68	0.53

(Source: author's calculation)
** Significance level at 0.05

Any symmetric data should have a skewness that is close to zero since the skewness for a normal distribution is zero. Negative values of skewness show that the data are skewed left. Positive values for the skewness show that the data are skewed right, which means having a longer or fatter tail on the right. According to Bulmer, M. G., Principles of Statistics (Dover, 1979) If the skewness value lies between -0.5 and 0.5, the distribution is assumed to be approximately symmetric. In addition, for normal distribution, the kurtosis value must be 3.

So, if we look at Table 2 which shows that the skewness of pre-Muhurat trading, post-Muhurat trading, and regular trading are 0.18, -0.04, and 0.32 respectively which lies between -0.5 to +0.5 hence the distribution is assumed to be symmetric. The Muhurat trading skewness is 1.74 which shows the distribution is asymmetric. But if we look at the kurtosis value reported in Table 2 which shows the distribution for Muhurat trading is Leptokurtic (Kurtosis =3.76 > 3.0), for pre-Muhurat trading and post-Muhurat trading is Platykurtic (Kurtosis < 3.0) and for regular trading is Mesokurtic (Kurtosis =3.09 which is almost equal to 3.0). It is clearly, evident that the entire data set does not follow normal distribution. Hence, we decided to use the non-parametric "Mann Whitney U test" to test our hypothesis.

It is evident from Table 2 that pre-Muhurat trading mean returns are lowest (-0.24 %) while the post-Muhurat trading mean returns are highest (0.94 %). The standard deviation which explains volatility, is found highest for post-Muhurat returns (3.06), followed by regular trading (2.05), for Muhurat trading (1.64), and least for pre-Muhurat trading (1.40). High positive post-Muhurat trading returns may be on account of higher risk.

Table 2. shows that Mean returns on the day of Muhurat trading (0.48 %) are approximately five times higher than regular trading returns (0.10 %). However, the p-value reported in Table 4 is evident that the abnormally high Muhurat trading returns are not statistically significant at 0.05 level of significance (p-value = 0.58 >0.05 at 0.05 level of significance). Hence, we fail to reject the null hypothesis one. Mean returns on the day of Muhurat trading (0.48 %) is abnormally high in comparison to pre-Muhurat trading (-0.24 %). But the p-value = 0.35 > 0.05 at 0.05 level of significance, which shows it is statistically insignificant. Similarly, post-Muhurat trading mean returns (0.94 %) are approximately two times that of Muhurat trading mean returns. But p-value =0.85 >0.05 at 0.05 level of significance, which shows it is highly insignificant. Hence, we fail to reject the null hypothesis two. Further, post-Muhurat trading mean returns (0.94 %) are abnormally high in comparison to the pre-Muhurat trading mean returns (-0.24 %). However, the empirical result presented in Table 4 (p-value = 0.53 > 0.05 at 0.05 level of significance) shows it is statistically insignificant. Hence, we fail to reject the null hypothesis 3. This study proposed that purchasing the stocks of Page Industry Ltd before Muhurat trading and selling them either on the day of Muhurat trading or post-Muhurat trading will fetch huge abnormal returns. However, this strategy is not statistically approved.

V. CONCLUSIONS

This study does not find a statistically proven Muhurat trading effect on the stock return of Page Industries Ltd., which shows the Indian stock market is weak-form efficient and absorbs information instantly.

VI. LIMITATIONS OF THE STUDY

The duration of the study is limited to ten years, having only ten observations.

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