A/B test Project insights :

1. To prepare A/B test i had to execute query which would pull all data needed to do the test (V1 vs V2) for both “NewYear” and “BlackFriday”

2. As their was wrong information about the clicks in the "adsense" table i have wrote query to get the conversion data from "raw_events" table for both marketing campaign.

   After the SQL query i got the results as below :

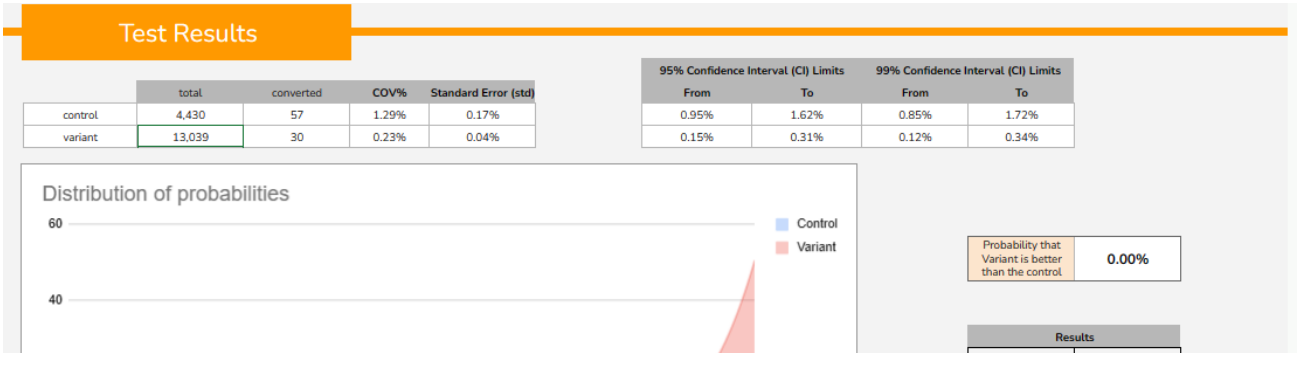
Month	Impressions	unique_users	Campaign
202101	13039	30	NewYear_V2
202101	4430	57	NewYear_V1
202011	24276	24	BlackFriday_V2
202011	8220	8	BlackFriday_V1

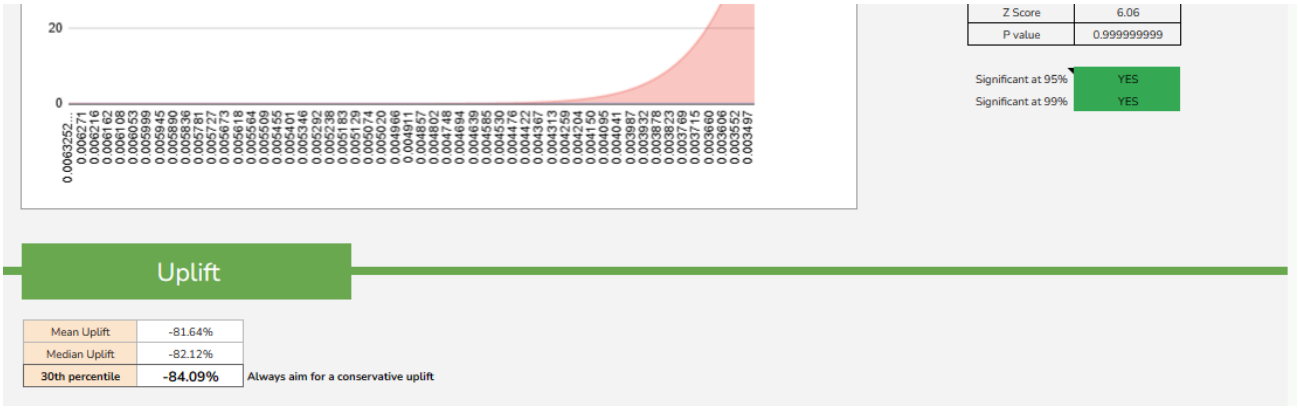
From this result its clearly visible that "adsense" table data about conversation (Clicks) were not tracked properly.

I have run the test in the **Binomial A_B test Calculator** results are given below :

NewYear (V1 vs V2) :

V1 as control & V2 as variant





Different Conversion Rates:
The control group has a substantially higher conversion rate (1.29%) compared to the variant group (0.23%). This indicates a noticeable difference in the success rate between the two conditions.

Sample Sizes:
The variant group has a larger sample size than the control group. This can often lead to a more precise estimate, as reflected in the smaller standard error for the variant group.

Standard Error:
The standard error quantifies the uncertainty in the conversion rate estimate. The control group has a higher standard error, possibly reflecting the smaller sample size and the higher variability in the conversion rate.

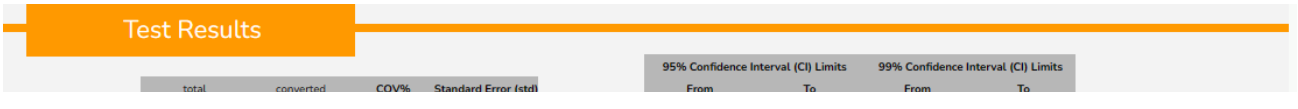
P value 0.99
that along with the other information in the table, indicates that the A/B test did not find a statistically significant difference between the control and variant groups, despite the apparent difference in conversion rates. But when z score is higher p value would be lower to reject the null hypothesis .

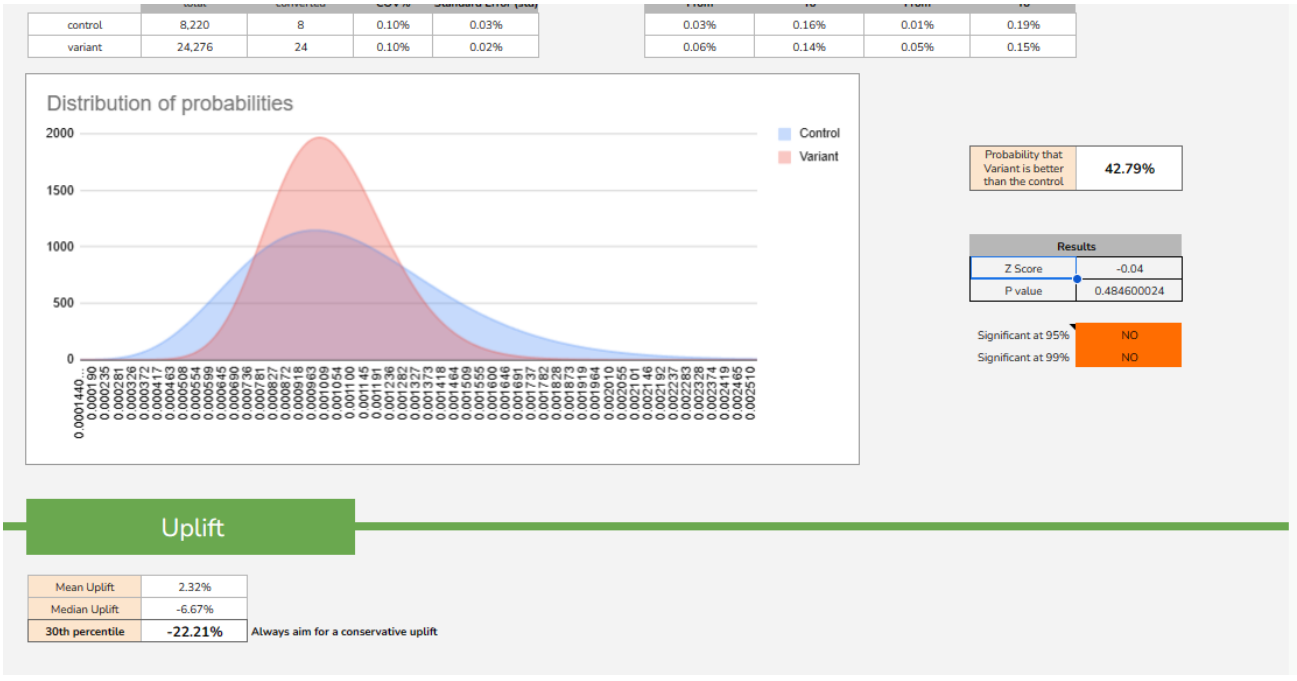
Z-score of 6.06
It would typically mean that there is strong statistical evidence of a difference between the groups. i would reject the null hypothesis in favor of the alternative hypothesis.

As we can clearly see that in the test the V1 (control) is far better then the V2(Variant) .

Black_Friday (V1 vs V2) :

V1 as control & V2 as variant





My hypothesis were null hypothesis before conducting the test.

Similar Conversion Rates:

Both the control and variant groups have the same conversion rate of 0.10%. This suggests that the change being tested did not lead to a detectable difference in conversion rates between the two groups.

Different Sample Sizes:

The variant group has a substantially larger sample size than the control group. This could impact the precision of the estimates.

Standard Error:

The standard error is smaller for the variant group, possibly reflecting the larger sample size. A smaller standard error means a more precise estimate of the conversion rate.

Z score : -0,04

Since -0.04 is close to 0, it suggests that the difference between the two groups is very close to the mean difference of the results. This is typically indicate as a small effect size or even no effect at all.

P value : 0,48

Since this p-value is much greater than the commonly used significance level of 0.05, i would fail to reject the null hypothesis. In the context of an A/B test, this means that there is not enough statistical evidence to conclude that there is a significant difference between the two groups (A and B).

In other words, the result is not statistically significant, and the differences observed in the sample are likely due to random variation rather than a true underlying effect.

So to reject my null hypothesis there are not enough evidence to support that there are significance difference between this 2 versions