A/B Testing Report

Preliminary Analysis

This report summarizes the A/B test results comparing a control group and a test group. The primary metric of interest is conversion rate.

Conversion Rate Performance:

The control group exhibited a conversion rate of 10.8%, with a 95% confidence interval ranging from 8.1% to 13.6%. The test group showed a higher conversion rate of 16.9%, with a 95% confidence interval ranging from 13.6% to 20.1%. Visually, the confidence intervals do not overlap, suggesting a potential difference between the two groups.

Statistical Significance:

We conducted both a t-test and a chi-squared test to assess the statistical significance of the observed difference. The t-test yielded a test statistic of -2.781 and a p-value of 0.0055. The chi-squared test resulted in a test statistic of 7.137 and a p-value of 0.0076. Both tests have p-values significantly below the conventional alpha level of 0.05. Therefore, both tests indicate a statistically significant difference in conversion rates between the control and test groups.

Effect Size:

To quantify the magnitude of the difference, we calculated Cohen's d, which resulted in a value of

0.176. According to conventional interpretations, this represents a small effect size. Although the effect is statistically significant, the practical importance may be limited due to the small magnitude of the effect.

Conclusion:

The test group demonstrated a statistically significant increase in conversion rate compared to the control group. Both the t-test and chi-squared test support this conclusion. However, the effect size, as measured by Cohen's d, is small.

Recommendations:

1. Deploy the New Feature: Given the statistically significant increase in conversion rate, we recommend deploying the new feature to the entire user base. Even a small improvement in conversion rate can translate to significant gains when scaled across a large user base.

2. Monitor Performance: After deploying the feature, it is crucial to continuously monitor its performance. Track the conversion rate and other relevant metrics to ensure that the observed improvement is sustained and that no unexpected side effects occur.

3. Further Investigation: While the test demonstrates a positive impact, further investigation is warranted to understand the underlying reasons for the increased conversion rate. Qualitative research, such as user surveys or usability testing, could provide valuable insights into how the new feature is impacting user behavior.

4. Consider Additional Testing: Explore further optimization of the new feature by running additional A/B tests with refined variations. This could potentially lead to even larger improvements in

conversion rate.

5. Cost-Benefit Analysis: Conduct a thorough cost-benefit analysis to ensure that the gains from the increased conversion rate outweigh the costs associated with implementing and maintaining the new feature.

A/B Testing Statistical Report

This report provides a detailed analysis of the A/B testing results to support decision-making.

Metrics:

Record 1: {'group': 'control', 'conversion_rate': '10.8%', 'conversion_CI_lower': '8.1%', 'conversion_CI_upper': '13.6%'}

Record 2: {'group': 'test', 'conversion_rate': '16.9%', 'conversion_CI_lower': '13.6%', 'conversion_CI_upper': '20.1%'}

T-Test Results:

Test Statistic: -2.781044104875063

P-Value: 0.0055226108112078716

Is Significant: True

Chi-Squared Test Results:

Test Statistic: 7.1370086650457445

P-Value: 0.007550901248336328

Is Significant: True

Effect Size:

Cohen's d: 0.1755985644385392

Interpretation: Small

Analysis & Recommendations:

The report indicates the performance differences between the control and test groups. Based on the statistical tests (T-Test and Chi-Squared) and the effect size, evaluate the significance of the differences. If the tests are statistically significant and the effect size is meaningful, consider rolling out the new feature. Otherwise, further analysis or iteration might be required.
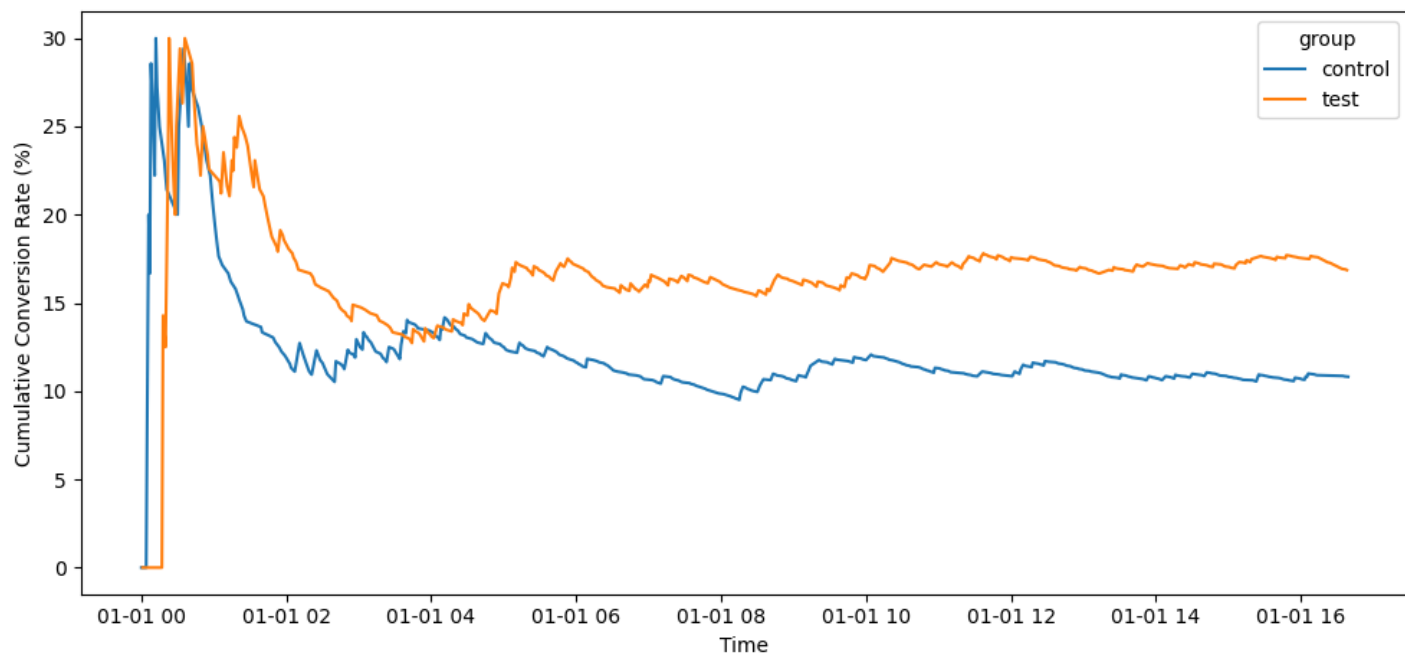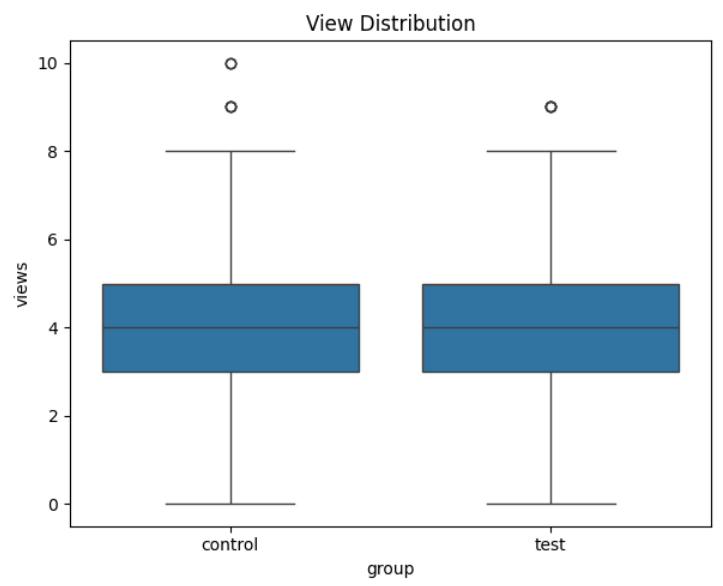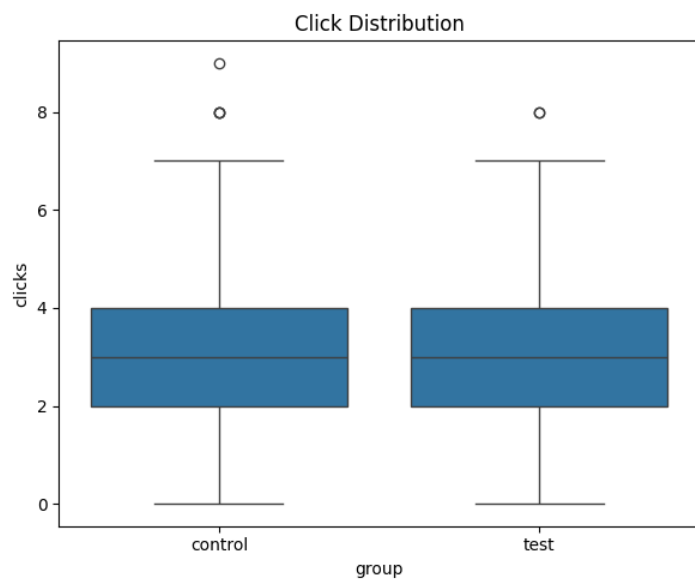
Plots

Conversion Rate Over Time
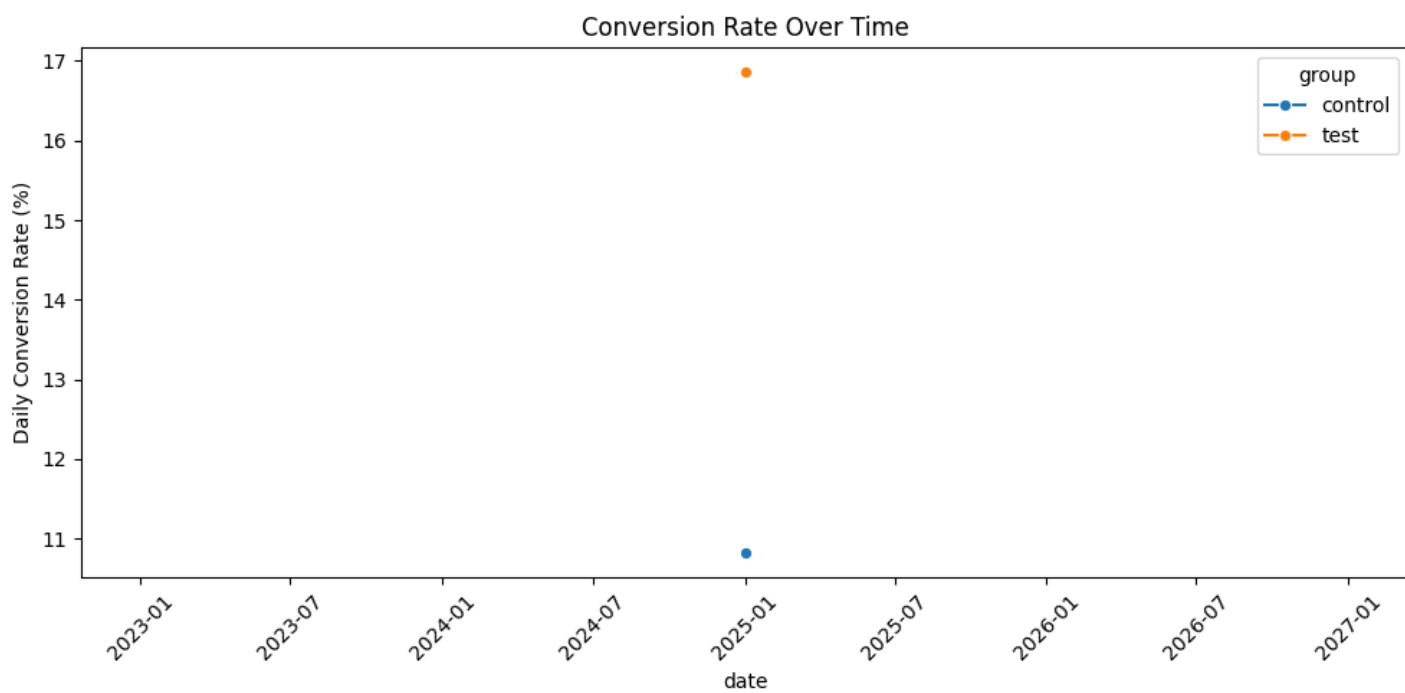
Conversion Rate with 95% Confidence Intervals
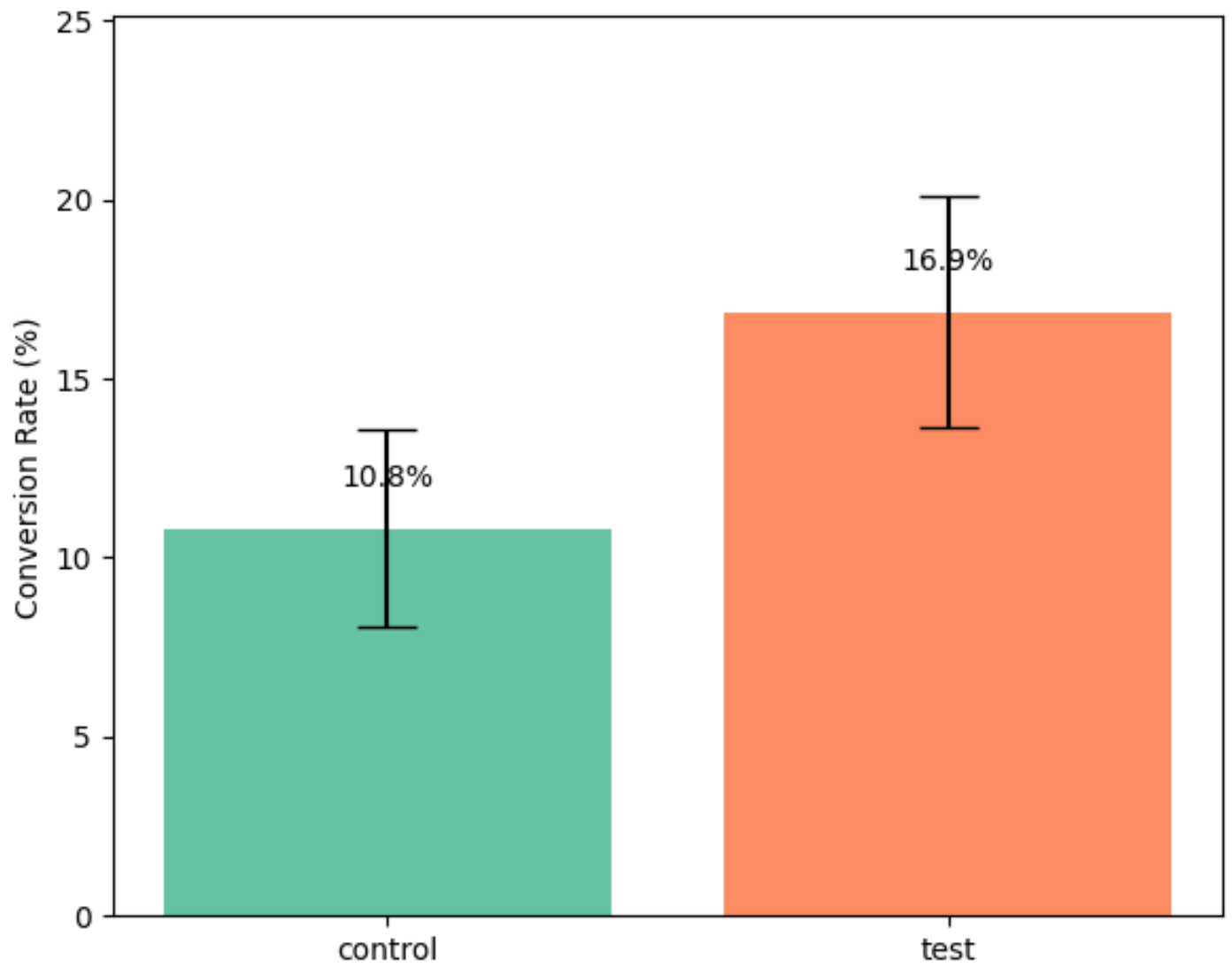
Cumulative Conversion Rate Over Time

User Funnel: Views → Clicks → Conversions