

E-Commerce A/B Test: Variant B vs Control A

1. Project Objective

Assess whether Variant B improves user-level conversion rate relative to Control A.

2. Primary Metric

Conversion Rate (CR) = $\frac{\text{\# unique users with converted}}{\text{\# unique exposed users}}$

3. Experimental Design

User-level randomization, first exposure decides group; fixed-horizon analysis post test window.

4. Statistical Settings

- Significance (alpha): 0.05
- Power: 0.8
- MDE (relative): 5.00%
- Alternative (test direction): smaller

5. Results

- $n(A) = 145232$, $n(B) = 145352$
- $CR(A) = 12.03\%$, $CR(B) = 11.88\%$
- Absolute lift = -0.145 pp, Relative lift = -1.21%
- z-statistic = -1.2084
- p-value = 0.113450
- 95% CI (absolute) = [-0.381 pp, 0.090 pp]

6. Decision

Do NOT ship (retain A)

7. Recommendation

Retain Control A. Iterate on the variant; target a more impactful change, pre-register a realistic MDE, and ensure planned sample size is achieved

9. Resources

[GitHub Repo](#)

[Kaggle Notebook](#)