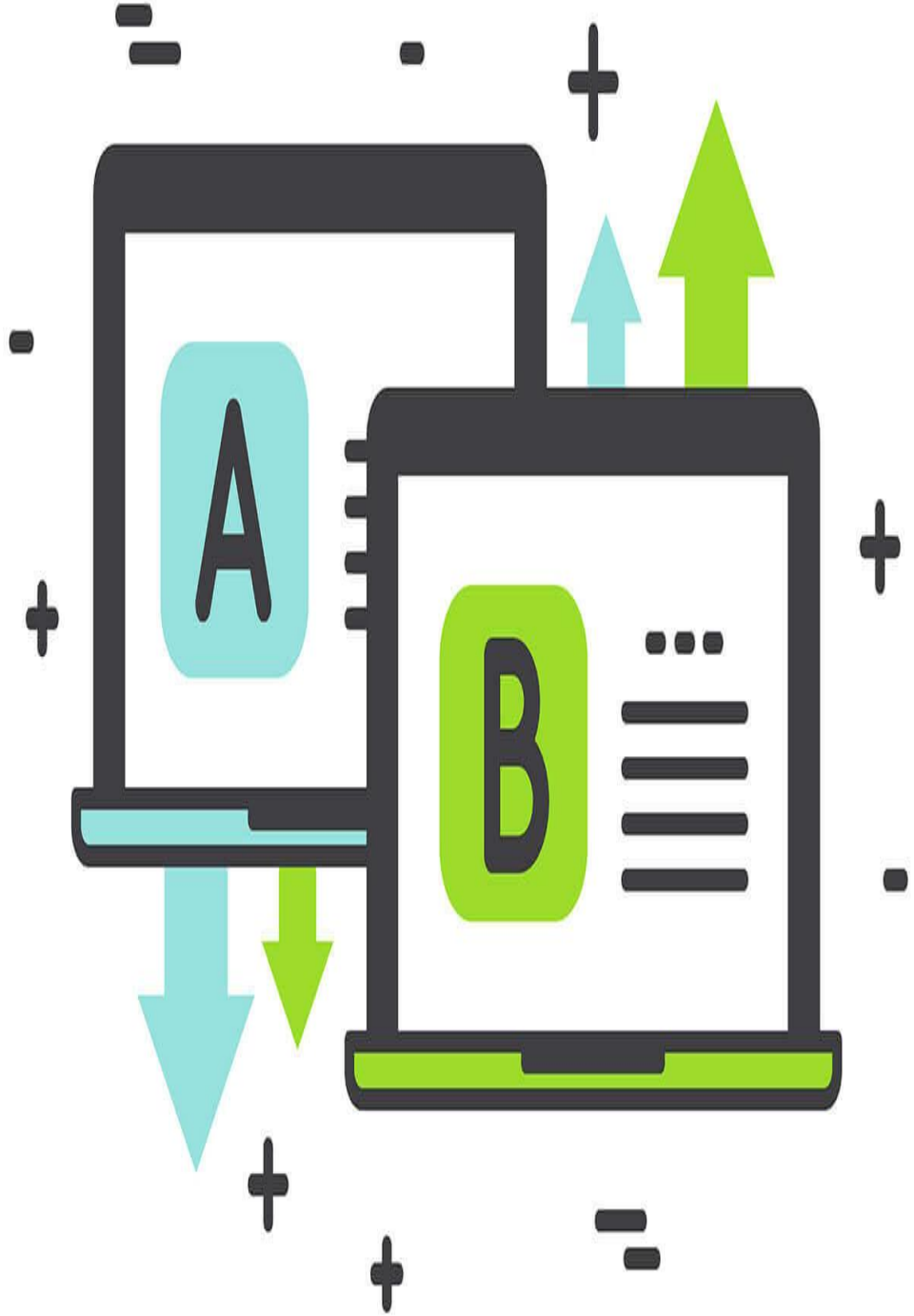


A/B Test Analysis: Time-Limited Discount Banner

Evaluating Impact on Conversion & Revenue

Author: Shubhika Singh

Experiment Design

Objective

Measure impact of time-limited discount banner on checkout conversion and revenue generation.

Research Question

Does a time-limited discount banner increase conversion rates without negatively impacting average order value?

Sample Size

50,000 sessions split evenly between variants A and B (25,000 each).

01

Primary Metric

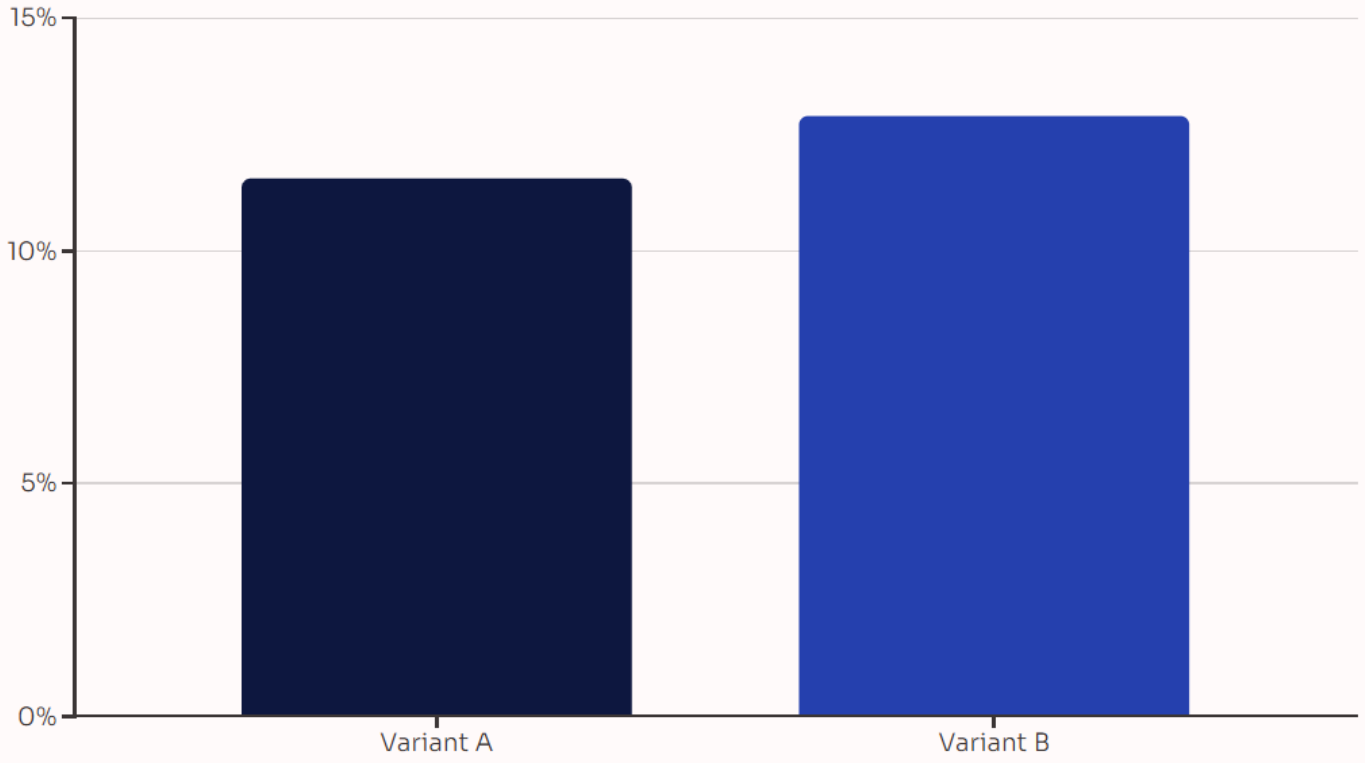
Conversion Rate – percentage of sessions resulting in completed purchases.

02

Secondary Metrics

Revenue per session, Average Order Value (AOV) among converters, and incremental revenue impact.

Conversion Rate Performance



+1.34

Absolute Lift

Percentage points increase

+11.58%

Relative Lift

Improvement over baseline

Statistical Significance: Z-test p-value = 4.85e-06 indicates highly significant results. Variant B clearly outperforms Variant A.

Revenue Impact Analysis

Revenue Per Session

Incremental revenue uplift of approximately **₹0.46** per session driven primarily by increased conversion rates.

Gross Revenue Uplift

Per 1,000 sessions, Variant B generates approximately **₹458.93** more in gross revenue compared to Variant A.

Conversion-Driven Growth

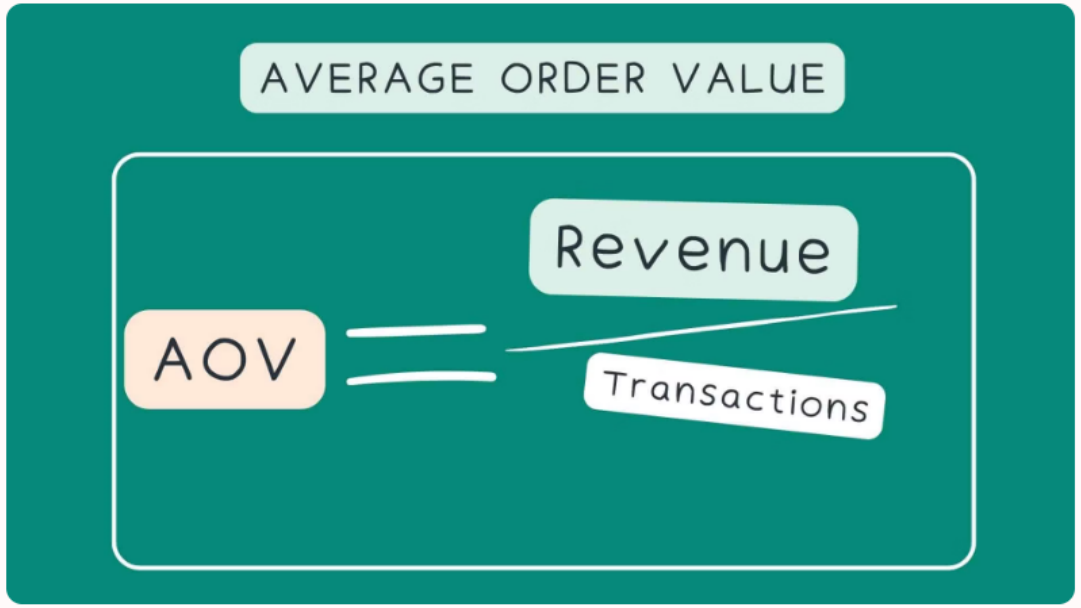
Revenue gains stem mainly from higher conversion rates rather than changes in customer spending behavior.

Average Order Value (AOV)

AOV Among Converters

Mann-Whitney U test reveals statistically significant difference ($p \approx 2.7e-07$) between variants.

- Bootstrap mean difference (B – A): **+₹1.84**
- 95% Confidence Interval: ₹1.05 to ₹2.64
- Right-skewed distribution requires non-parametric analysis



Non-parametric and bootstrap methods confirm Variant B shows modest but significant AOV improvement alongside conversion gains.

Statistical Validity

Distribution Analysis

Shapiro test confirms non-normal AOV distribution, validating use of non-parametric methods.

Variance Homogeneity

Levene test shows similar variances across variants, ensuring robust comparison.

Bayesian Posterior

P(B > A) = 1.0 provides overwhelming evidence that Variant B outperforms Variant A.

Statistical Power

Achieved power ≈ 92.9% ensures high confidence in detecting true effects.

Recommendations & Next Steps

Deploy Variant B

Statistically and practically superior performance justifies full rollout.

Phased Rollout

Begin with 10-20% traffic, monitor performance, then scale to 100% deployment.

Monitor Guardrails

Track refund rates, discount costs, and conversion stability post-launch.