

Business Challenge

- **Challenge**

- The homepage call-to-action button had a very low CTR (~2%).
- UX suspected the button's color and wording affect user interaction.

- **Goal**

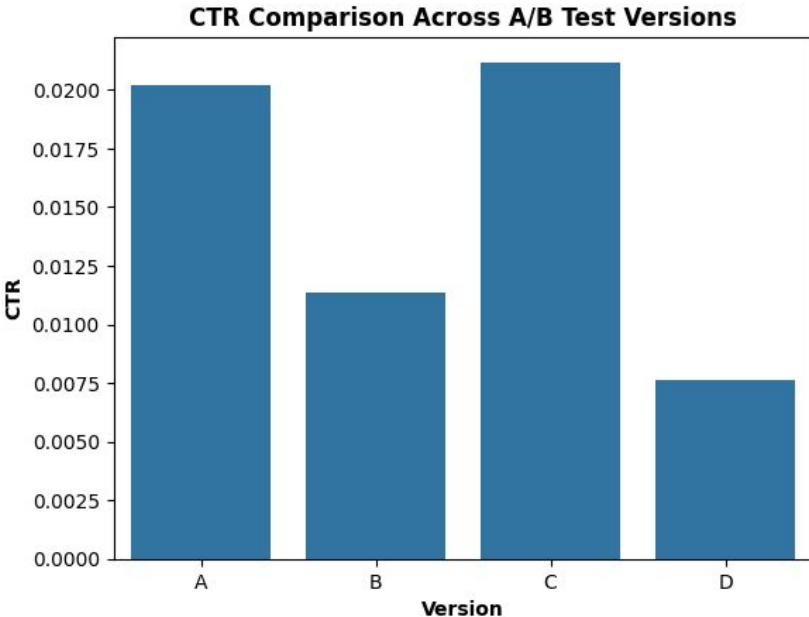
- Test different designs.
- Identify which version improves user engagement using data.

A/B Test Setup

Version	Color	Text
A	White	SHOP NOW
B	Red	SHOP NOW
C	White	SEE DEALS
D	Red	SEE DEALS

- **Metric:** Click-Through Rate (CTR)
- **Statistical test:** Chi-Square
- Post-hoc with **Bonferroni** correction
- The test checks **both color and wording** at the same time.

CTR Results & Statistical Test



- **Observations**
 - Version C shows the highest CTR.
 - Version D shows the lowest CTR.
- **Chi-Square Test**
 - The difference in CTR between versions is statistically significant ($p < 0.05$).
 - This means user clicks depend on the button version.
- **Post-Hoc Test (Bonferroni)**
 - All versions are significantly different except A and C.
 - A and C are not statistically different in CTR.

Looking Beyond CTR

CTR → click through rate

Drop-off rate → users leaving after click (lower is better)

Homepage return rate → users coming back to Homepage(lower is better)

Version	Click	NoClick	CTR	DropOff_x	ReturnRate_x	DropOff_y	ReturnRate_y
A	512	24814	0.020216	62.0	5.3	62.0	5.3
B	281	24466	0.011355	NaN	NaN	NaN	NaN
C	527	24349	0.021185	71.0	4.7	71.0	4.7
D	193	25040	0.007649	69.0	2.6	69.0	2.6

Drop-Off Rate

Version A → lowest drop-off (users continue)

Version C → highest drop-off (users leave)

Homepage Return Rate

Version D → lowest return

Version A → highest return

- **Although Version C attracts many clicks, users leave more often after clicking.**
- **Version A keeps users engaged in the process.**

Final Decision

Final Decision: Version A (White + “SHOP NOW”) is the winner

Why?

- The Chi-Square test showed real differences between versions.
- Post-hoc test showed Version A and C are not statistically different in CTR.

After the click:

- Although Version C attracted many clicks, it did not keep users engaged.
- Version A provides a more reliable and effective user journey.

Business Insight:

Optimizing for CTR alone would have led to the wrong decision.