Recommendations for an A/B Testing Simulation: Evaluating User Engagement Through Hypothesis Testing

Statistical Summary

Click-Through Rate (CTR)

- Webpage A CTR: 25.4%
- Webpage B CTR: 32.3%
- Chi-Square Statistic: 11.26 | P-Value: 0.00079 (< 0.05)
- Conclusion: Significant difference; Webpage B performs better.

Time Spent

- Webpage A Mean: 29.49 sec | Webpage B Mean: 31.14 sec
- T-Statistic: -1.64 | P-Value: 0.10 (≥ 0.05)
- Conclusion: No significant difference in time spent.

Conversion Rate

- Webpage A Conversion: 33.3%
- Webpage B Conversion: 26.9%
- Chi-Square Statistic: 9.43 | P-Value: 0.0021 (< 0.05)
- Conclusion: Significant difference; Webpage A performs better.

Actionable Insights

CTR

- Focus on Webpage B's design and content to understand why it performs better.

- Improve Webpage A's CTR by optimizing Call to Actions, layout, and content clarity.

Time Spent

- Investigate qualitative user behavior (e.g., scroll depth, interactions) to ensure time spent is meaningful.

Conversion

- Strengthen Webpage A's conversion strengths, like Call to Actions and subscription flows.
- Analyze Webpage B's funnel to address points where users drop off.

Continuous Improvement

1. Iterative Testing: A/B test layout, Call to Actions, and visuals on both webpages.
2. User Segmentation: Personalize content and design based on audience segments for better engagement.

Strategic Decisions

1. Traffic Allocation: Use Webpage B's strong CTR to drive traffic and redirect to Webpage A for better conversions.
2. Focus Efforts:
   - Improve Webpage A's CTR to attract more clicks.
   - Refine Webpage B's conversion funnel to retain users.
3. Performance Monitoring: Continuously track metrics to ensure improvements are sustained.