

# Shortened A/B Testing Methodology

## Purpose

This document is to provide a framework for A/B tests that have the goal of “quick wins”. Due to the volume of A/B testing to be done, and the decreased team size, a standardized and streamlined framework is necessary so that both the Product and BI teams can focus on key objectives.

For these “Quick Wins”, **the only KPI that will be tested will be the clickthrough rate**. Another other KPI added will result in a 1-2 week lag in results.

## Steps for running the “Quick Wins” A/B tests

1. Before the test is ran, Product and BI meet to review specifics of the test. The length of how long the test will run will be determined by this calculator: <https://www.evanmiller.org/ab-testing/sample-size.html>.
  - a. Default inputs for Fox will be:
    - i. alpha = .05
    - ii. power = .9
    - iii. Minimal Detectable and it will be **relative**
      1. Effect = 10%
    - iv. Baseline Conversion Rate = the clickthrough rate of the button.
      1. Ex: The **Watch TV** button Baseline Conversion Rate (baseline CTR) on [FoxNews.com](https://www.foxnews.com) will be measured by the # of clicks on the button divided by the number of page views on the homepage
  - b. The output above is to be multiplied by the # of variations.

*Sample size:*

6,347

per variation

- c. Find the average daily # of page views for the page being tested for the past 7 days. If the past 7 days had a spike in activity, use the 7 days before that.
  - d.  $\frac{\text{The number in b}}{\text{The number in c}} = \text{the number of days to run the experiment. (number of page views required divided by the page views per day)}$ .
  - e. Add 1 to  $\text{the result from d}$  for good measure (so add 1 extra day)
2. The Product Manager will then run the test in Taplytics. Guidelines are here: [🔗 Overview of A/B Testing with Taplytics](#)
3. Results will be given from BI to the PM. For Confidence Intervals, please use:

**Confidence Interval** = diff CTR +/- 1.96 \* sqrt(standard error)

**where**

diff CTR = (CTR<sub>variant</sub> - CTR<sub>control</sub>)

standard error =  $[\#obs_{variant} * CTR_{variant} * (1 - CTR_{variant}) + \#obs_{control} * CTR_{control} * (1 - CTR_{control})] / (\#obs_{variant} + \#obs_{control})$   
\*  $(1/\#obs_{variant} + 1/\#obs_{control})$

Here is another version of the formula:

$$CI_{bounds} = (\mu_2 - \mu_1) \pm Z \cdot \left( \frac{\sigma_p}{\sqrt{n_1 + n_2}} \right)$$

where sigma(p) is the pooled standard deviation, which is:

$$[\#obs_{variant} * CTR_{variant} * (1 - CTR_{variant}) + \#obs_{control} * CTR_{control} * (1 - CTR_{control})]$$

Source: <https://cxl.com/blog/confidence-intervals/>

**BREAK GLASS:** Here is also an easy calculator: [https://act-on.com/statistical-significance-calculator/?samples\\_A=1000&samples\\_B=1080&conversions\\_A=90&conversions\\_B=112](https://act-on.com/statistical-significance-calculator/?samples_A=1000&samples_B=1080&conversions_A=90&conversions_B=112)