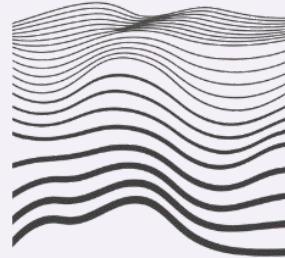


Large Sample Test



project by:



LINDSAY MCFARLANE

www.lindsaymsba.com

831.601.7684 | lindsay.alexandra14@gmail.com | [linkedin: lindsay-mcfarlane](#)



Summary



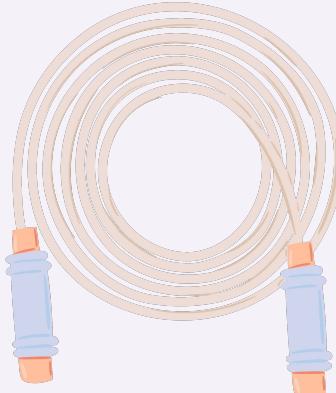
Full Deck

Summary



Background

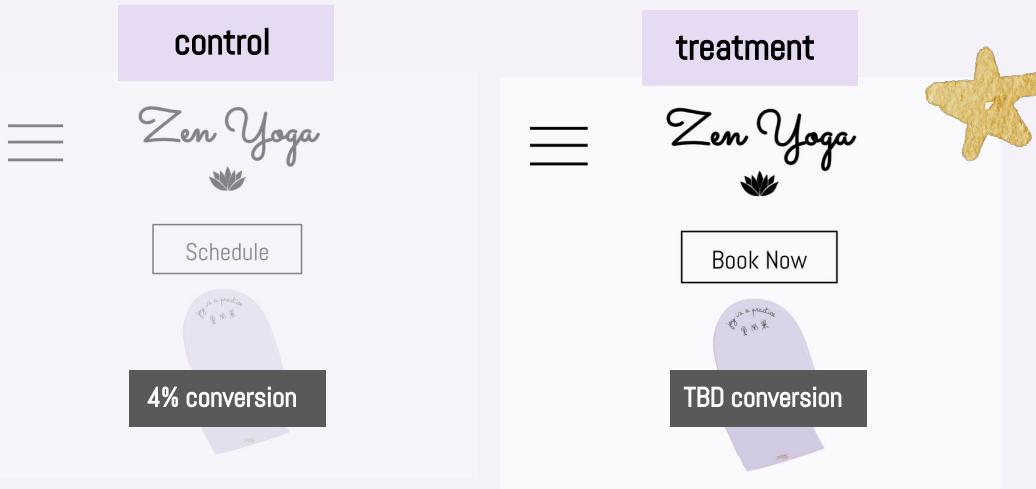
*A national class-booking platform integrates into websites of their customers, which are fitness studios. The platform want to run an **A/B test on the CTA** that exists on the landing page framework to start booking a class.*



Hypothesis

For CTA on a class-booking platform:

The treatment landing page performs better than the control
(significance at the 5% level)



Conversion is currently on the lower end of **industry benchmarks**
(up to 5%) & there is reported **confusion over "schedule" having dual meaning**
(view class schedule vs. book)

More **clarity and a sense of urgency/encouragement**

Methodology

Randomized controlled experiment:

Randomly assign users
to each group
to ensure no pre-existing
differences



Use Control that does
not receive treatment
to use as a baseline

Control
vs.
Treatment(s)

Statistical Test

I will use **z-Test for Two Proportions**
since there is a large sample and two
conversion rates to compare

Test Design

Sample Size

The sample size needed is **~14,000 users** (per group)

Significance level: 5%

Power: 80%

Baseline conversion rate: 4%

Sample Needed: ~14,000 / group

Results

Test confirms:
treatment > control

Conversion Rates:

Control Conversion Rate: 4.01%
Treatment Conversion Rate: 4.64%

95 percent confidence interval:
0.002327633 1.000000000

Observed treatment
conversion rate is:

15%

higher vs.
control

True treatment
lift is:

≥ 0.23 pp

(% points) vs.
control

95%
Confident

Result is statistically significant:

P-value: 0.0044 (< 0.05)



Test was adequately powered:

Result Power: 83.6 %



Revenue Impact

Control ("Schedule"):

users * bookings * avg price / class =

$14,500 * 582 * \$30 = \$17,460$ revenue

Revenue / user = \$1.20

Treatment ("Book Now"):

users * bookings * avg price / class =

$14,550 * 675 * \$30 = \$20,250$ revenue

Revenue / user = \$1.39

Observed difference: **\$0.19 / user**

(15.6% uplift)

~\$216K+
/ year
expected
uplift

for 300K users/month

95% Lower Bound: \$0.06+ revenue /user

(5.7%+ uplift on \$1.20 / user)

Math for 5.7%: 0.0023pp min. uplift/0.0401 control rate=5.7% min uplift

Recommendation

In this case, due to the significance, statistical power, low cost of implementing treatment, and the sizable impact & improvement for studio customers...

**I recommend moving forward with
implementing the treatment:**



[Book Now](#)



notebook link:



Tools: R in Google Colab
Data Source: Self-generated

Click for Full Deck

