MuscleHub Capstone Project 1

January 18, 2018

The Experiment Outline

- Non-member visits
- If non-member wants to fill out an application they are randomly assigned to Group A or B
  - Group A is required to take a fitness test before filling out the application
  - Group B is directed to fill out the application with no need to take the fitness test
- Non-member either does or does not purchase a membership

Overview

Analyzing the acquisition funnel of MuscleHub

- Data: Qualitative and Quantitative Data
- Group assignment: Random assignment of non-members who visit to Group A & Group B
- Principle question: does the prerequisite of a fitness test affect the conversion rate of non-members to members?
    - Does it affect the average number of non-members who fill out applications?
    - Of those who fill out applications does it affect the average number who purchase memberships?

Data Sets

Quantitative

The quantitative data consisted of 4 tables with each with a person's first name, last name, email, gender and a final column unique to that table.

Unique Columns:

- Each unique column is a date that reflects when that person completed the tracked activity, for example the column application_date is found in the visits table and indicates the day that person filled out an application.

Qualitative

4 potential customers gave some comments.

Takeaways:

- While the sample size is small the sentiment seems to be largely negative towards requiring a fitness test to submit an application

Randomly Assigned Groups

Group A	Group B
Was asked to take a fitness test with a personal trainer.	Did not have to take fitness test with a personal trainer prior to filling out an application.

Null Hypothesis 1:
There is no statistically significant difference between the average number of non-members who pick up an application between Group A and Group B

Hypothesis Test 1

Ran a Chi squared hypothesis Test.

Chi sq. results:

- P-Value < .001
- Reject null hypothesis 1

Null Hypothesis 2:

There is no statistically significant difference between the average number of non-members that picked up an application and purchased a membership between Group A and Group B

Hypothesis Test 2

Ran a Chi squared hypothesis Test.

Chi sq. results:

- P-Value = .433
- Fail to reject null hypothesis 2

Null Hypothesis 3:
There is no statistically significant difference between the average number of non-members who purchased memberships between Group A and Group B

Hypothesis Test 3

Ran a Chi squared hypothesis Test.

Chi sq. results:

- P-Value < .168
- Fail to reject null hypothesis 3

Understanding the market

Testing Rational

CHI SQ. Justification:

- Group identity was binary the non-member either belonged to a Group A or B
- All other Variables were binary, and without a expected proportion of success CHI SQ. is the best test to compare expected counts of categorical groups

Takeaway

- We lack any statistical significance in increasing the likelihood of non-members purchasing a membership
- We should investigate the ‘stickiness’ of those in Group A who signed up versus those in Group B
- ‘Stickiness’ defined here as the average length of membership in Group A vs Group B as we might be able to determine Group A has a longer average membership due to the higher bar of being able to submit an application