codecademy

Introduction to Data Analysis

MuscleHubA/B Test

Murillo Müller

05/26

Scenario

Currently, when a visitor to MuscleHub is considering buying a membership, he or she follows the following steps:

1. Take a fitness test with a personal trainer;
2. Fill out an application for the gym;
3. Send in their payment for their first month's membership.

Objective

*T*o figure out if the fitness test influence visitors to become new members of MuscleHub and, based on the results, to make a business recommendation for the gym.

Hypothesis

*V*isitors who skip the fitness test are more likely to eventually purchase a membership to MuscleHub.

Procedure

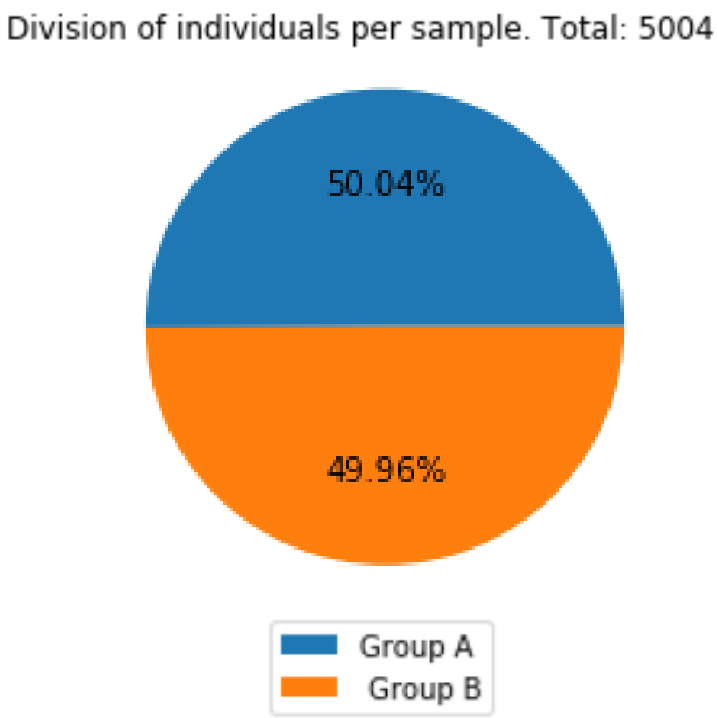
Visitors were randomly assigned to one of two groups:

a. Group A were still asked to take a fitness test with a personal trainer;
b. Group B did not take the fitness test and proceeded directly to the application.

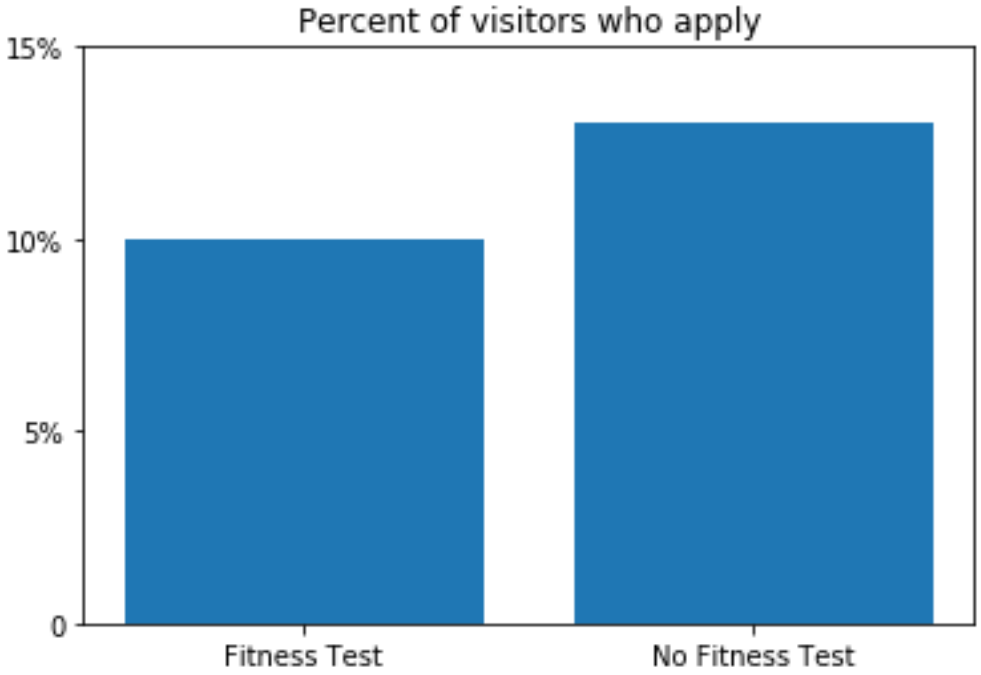
Chi Square Test was the type of hypothesis test used on the three tests. Chi Square test is very useful when we handle with two or more categorical dataset that we want to compare. The two categorical data on this test are “Took the fitness test" and “Did not took the fitness test".

Data Set

- 5004 visitors took part in the A/B test;
- Group A: 2504 participants
- Group B: 2500 participants.
- Hypothesis tests that result a pval higher than 0.05 were considered statistically significant.



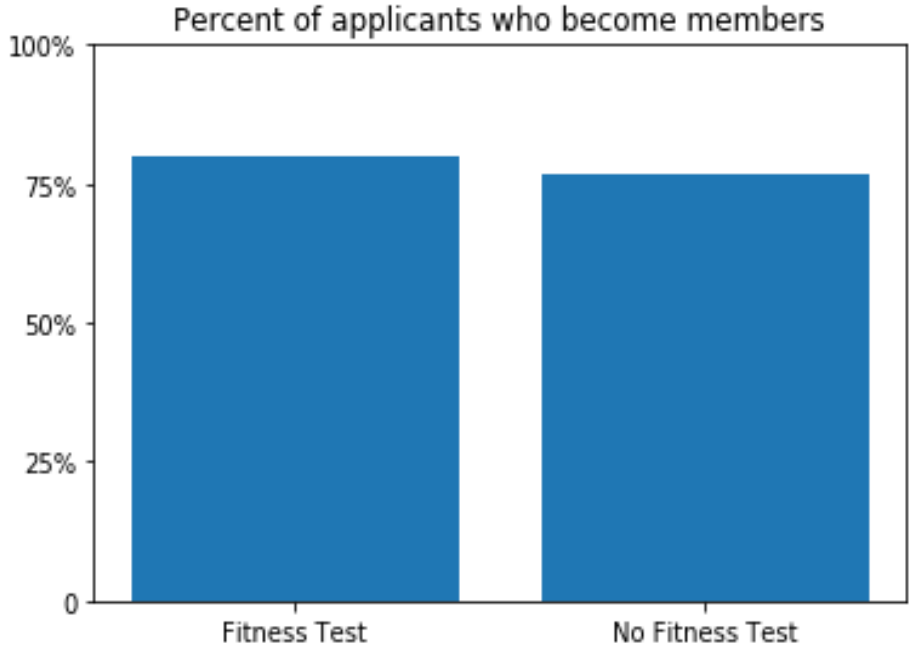
Hypothesis test 1



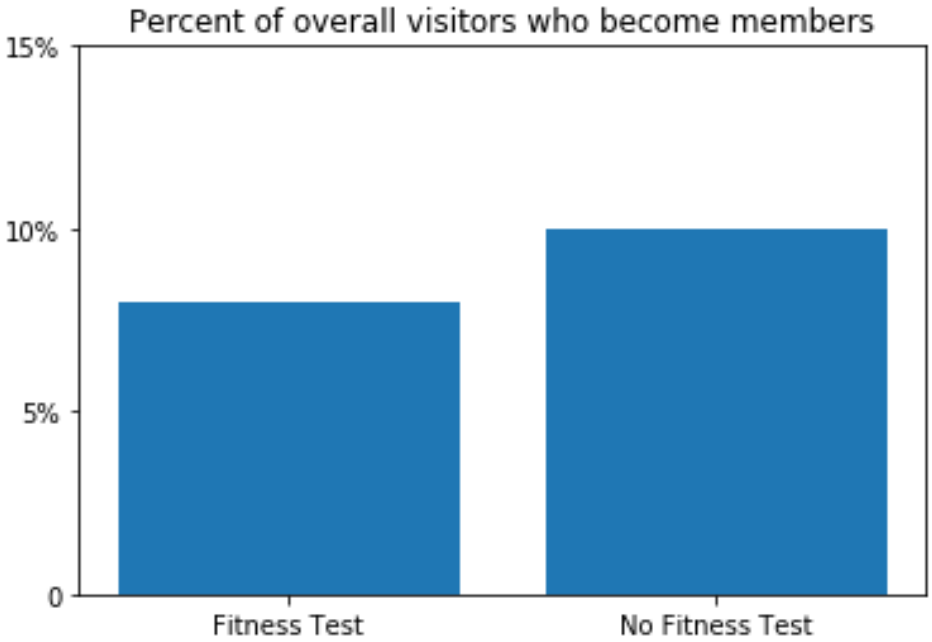
- About 10% of visitors who took the fitness test filled out the application to be come a member.
- On the other hand, 13% of visitors who didn't take the test filled out the application.
- The difference, however, cannot be considered statistically significant (pval= 0.0009).
- Therefore, our main hypothesis cannot be proved nor refuted by the analysis of this data.

Hypothesis test 2

- 80% of visitors who took the fitness AND filled out the application to become a member actually purchased membership. On the other hand, 76% of visitors who didn't take the test AND filled out the application actually purchased membership.
- The difference can be considered statistically significant(pval= 0.4325).
- Therefore, we can accurately afirm that visitors who take the fitness test and show interest by filling out the applicantion form are more likely to actually become a new member of MuscleHub.



Hypothesis test 3



- About 8% of over all visitors who took the fitness purchased membership. On the other hand, 10% of visitors who didn't take the test purchased membership.
- The difference, however, cannot be considered statistically significant (pval= 0.014).
- Based on the significance test, our main hypothesis cannot be proved nor refuted by the analysis of this data.

Qualitative Data

To complemente the hypothesis test, four visitors were interviwed after completing the application process.

Based on those few interviews, we can affirm that:

a. People may not like too intense fitness tests;
b. The fitness test is a good way to introduce the gym’s personal traineirs and equipment.

Business Recomendation

Based on the qualitative and quantitative analysis performed, we cannot be sure that the fitness test is intimidative.

What we are certain is that visitors who take the test and fill the application form are more likely to become member.

Recomendation

You should keep the fitness test in the application processes!

More important: focus on improving it by selecting the best personal trainers to deliver it and by setting up a fitness test thats hows the best features of the gym to the visitor.

Once the fitness test is well adapted to the expectations of the visitors, it can become a great tool to increase the likelihood of visitors on joining MuscleHub and lifting some weight!