




Influence of fitness test on membership purchase

May 31, 2018



Overview

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

Overview

Visitors were randomly assigned to one of two groups:

- **Group A** was still asked to take a fitness test with a personal trainer
- **Group B** skipped the fitness test and proceeded directly to the application

The hypothesis is that visitors assigned to Group B will be more likely to eventually purchase a membership to MuscleHub.

Data Set

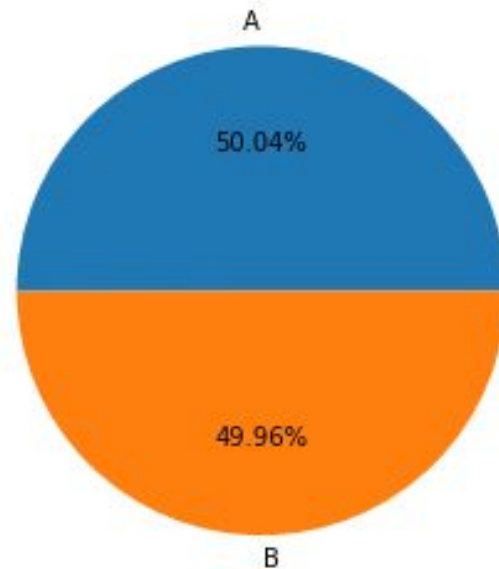
We have a SQLite database, which contains several tables that will help us in this investigation:

- ***visits*** contains information about potential gym customers who have visited MuscleHub
- ***fitness_tests*** contains information about potential customers in "Group A", who were given a fitness test
- ***applications*** contains information about any potential customers (both "Group A" and "Group B") who filled out an application. Not everyone in visits will have filled out an application.
- ***purchases*** contains information about customers who purchased a membership to MuscleHub.

There are **5004** visits occurred during the A/B test.

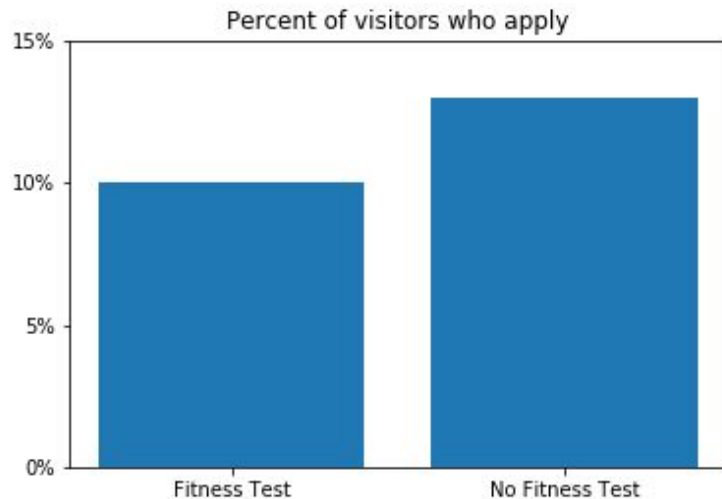
Visits by Test Group

Group	Visits
A	2504
B	2500



Who picks up an application?

Group	Visits	Applications	Percent with Application
A	2504	250	9.98
B	2500	325	13.00



This data shows that more people from Group B turned in an application.

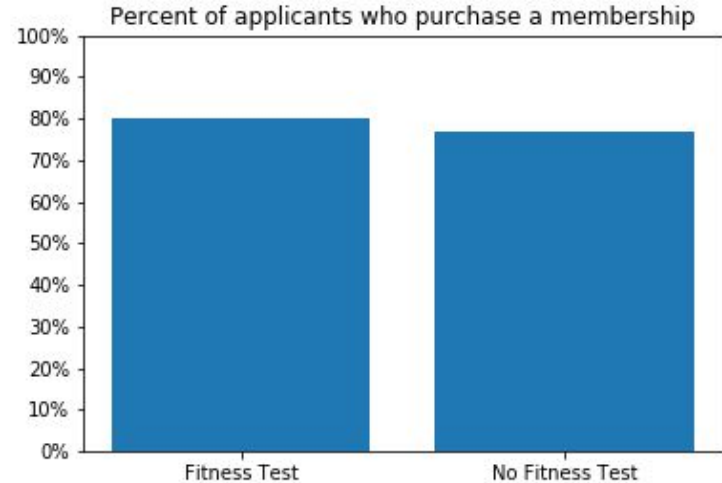
We have two categorical datasets that we want to compare, so we should use a Chi Square test.

The result of this test P-value = 0.0009647827600722304 (< 0.05).

That means that there is a **significant difference** between two of the datasets.

Who purchases a membership?

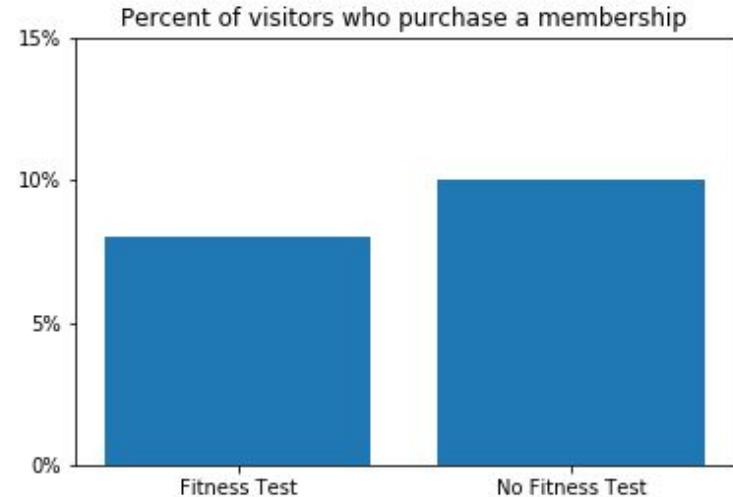
Group	Applications	Purchase	Percent Purchase
A	250	200	80.00
B	325	250	76.92



This data shows that more people from Group A purchased a membership *if they picked up an application*. We have two categorical datasets that we want to compare, so we should use a Chi Square test. The result of this test P-value = 0.43258646051083327 (> 0.05). That means that there is **no significant difference** between two of the datasets.

Who purchases a membership?

Group	Visits	Purchase	Percent Purchase
A	2504	200	7.99
B	2500	250	10.00



This data shows that more people from Group B purchased a membership from all visitors of MuscleHub. We have two categorical datasets that we want to compare, so we should use a Chi Square test. The result of this test $P\text{-value} = 0.014724114645783203 (< 0.05)$. That means that there is a **significant difference** between two of the datasets.

The qualitative data summary

We have 4 A/B test participants reviews.

Visitor	Fitness Test (FT)	Liked having/not having FT	Purchased Membership
1.Cora	Yes (Group A)	Yes	Yes
2.Jesse	No (Group B)	Yes	No
3. Sonny "Dad Bod"	Yes (Group A)	No	No
4. Shirley	No (Group B)	Yes	Yes

As we can see 2 of them from Group A and 2 from Group B.

Only one from each group ended up purchasing a membership.

But one person from Group B liked *not having* the fitness test and didn't make a purchase for different reason.

Conclusion

A/B test shows that visitors assigned to Group B are more likely to eventually purchase a membership to MuscleHub.

Analysis of participants reviews also proves this result.

I would recommend removing the fitness test from the membership procedure.