



MuscleHub A/B Test

Does the Fitness Test Affect Membership Rates?

Agenda



01. A Summary of The Dataset

Insight into the data used for this analysis.

03. Results of The Three Hypothesis Tests

Because the data is categorical with two dichotomous variables, we'll use the Chi Square Test. Are the differences statistically significant?

02. What Happened in The A/B Tests?

- Who picks up an application?
- Of those who pick up an application, who purchases a membership?
- Of all visitors, who purchases a membership?

04. A Summary of The Qualitative Data

Insight from visitor interviews.

05. Recommendations

Lessons learned from this experience.

Introduction

I've been hired to help MuscleHub, a fancy gym, run an A/B test! Janet, the manager of MuscleHub, thinks that the fitness test intimidates some prospective members, so she has set up an A/B test. Visitors will randomly be assigned to one of two groups:

- Group A will still be asked to take a fitness test with a personal trainer.
- Group B will skip the fitness test and proceed directly to the application.

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



A Summary of The Dataset

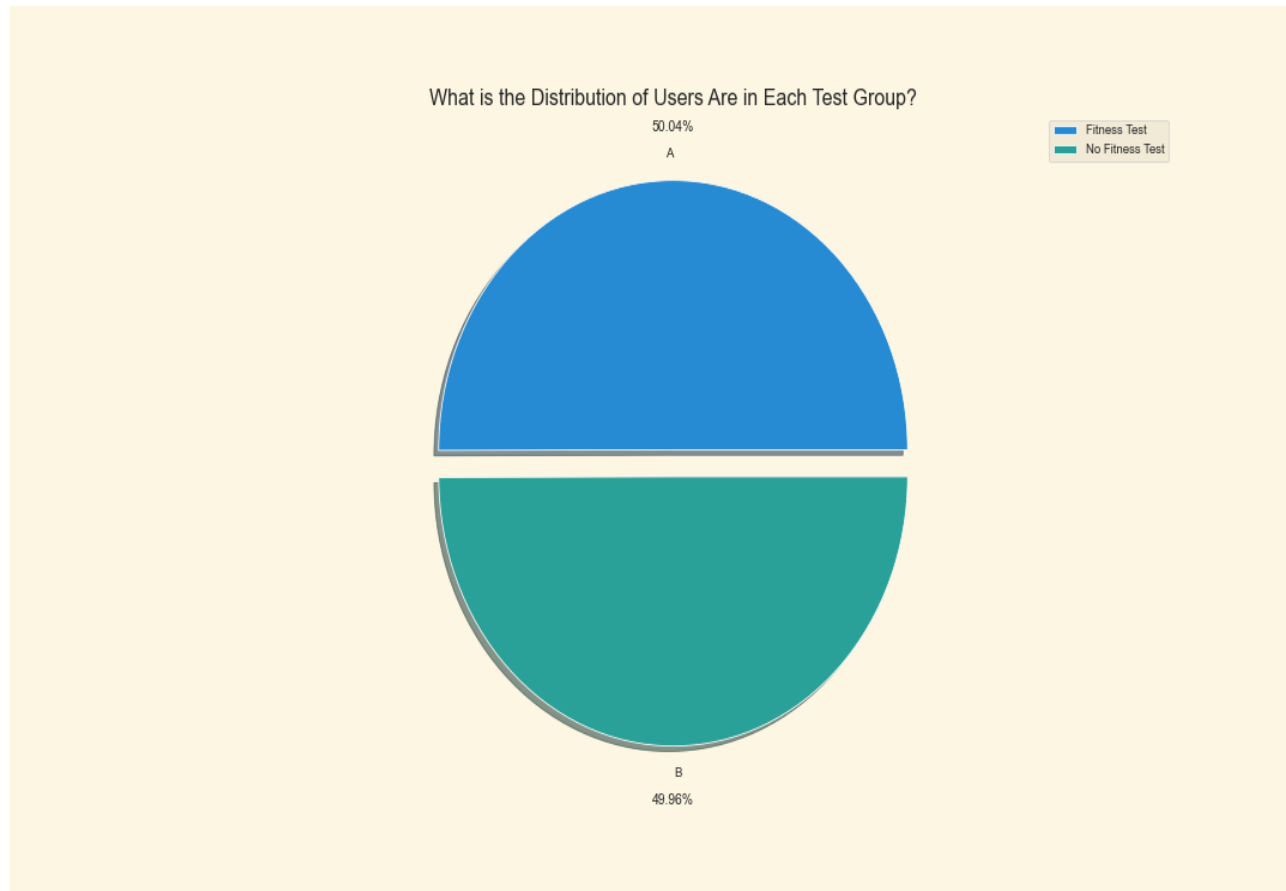
The tables accommodate MuscleHub's member acquisition funnel. In a cascading series of Left Joins, we are able to access data from:

- visits.first_name
- visits.last_name
- visits.gender
- visits.email
- visits.visit_date
- fitness_tests.fitness_test_date
- applications.application_date
- purchases.purchase_date

This data represents sampling with 5004 samples. The A group has 2504 samples and the B group has 2500.



How Many Users Are in Each Test Group?



Group A: Visitors that took a fitness test. 2504 visitors.

Group B: Visitors that that did not take a fitness test. 2500 visitors.

Distribution of Users Are in Each Test Group

	ab_test_group	first_name
0	A	2504
1	B	2500

What Happened in The A/B Tests?

Membership Funnel Currently in Use

- Take a fitness test with a personal trainer.
- Fill out a MuscleHub application.
- Send in their payment for their first month's membership.

Membership Funnel Under A/B Test

- **Group A** will continue to take fitness tests.
- **Group B** will be able to fill out an application without taking a fitness test.



Results of The Three Hypothesis Tests

Who picks up an application?			
	ab_test_group	Application	No Application
0	A	250	2254
1	B	325	2175
p-value = 0.0009647827600722304 - Difference is significant!			

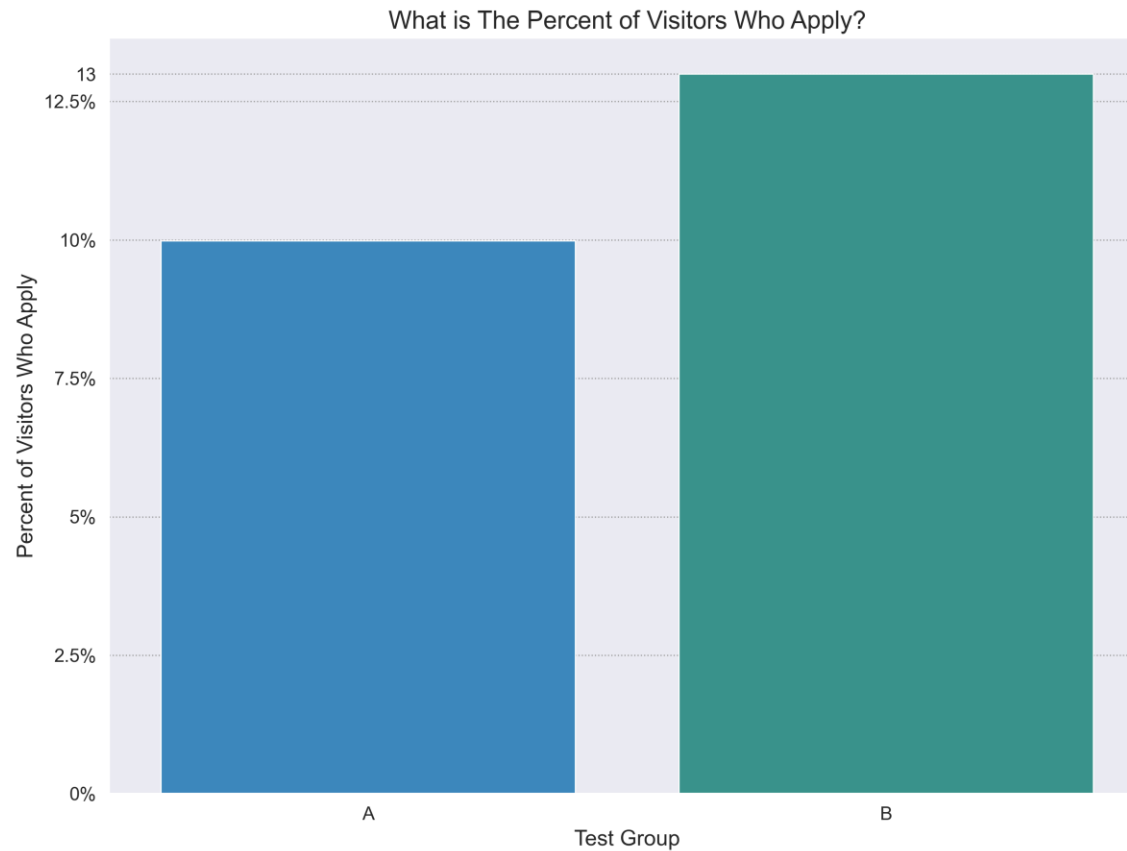
Of those who picks up an application, who purchases a membership?			
	ab_test_group	Member	Not Member
0	A	200	50
1	B	250	75
p-value = 0.43258646051083327 - Difference is not significant!			

Of all visitors, who purchases a membership?			
	ab_test_group	Member	Not Member
0	A	200	2304
1	B	250	2250
p-value = 0.014724114645783203 - Difference is significant!			

The Three Hypothesis Tests

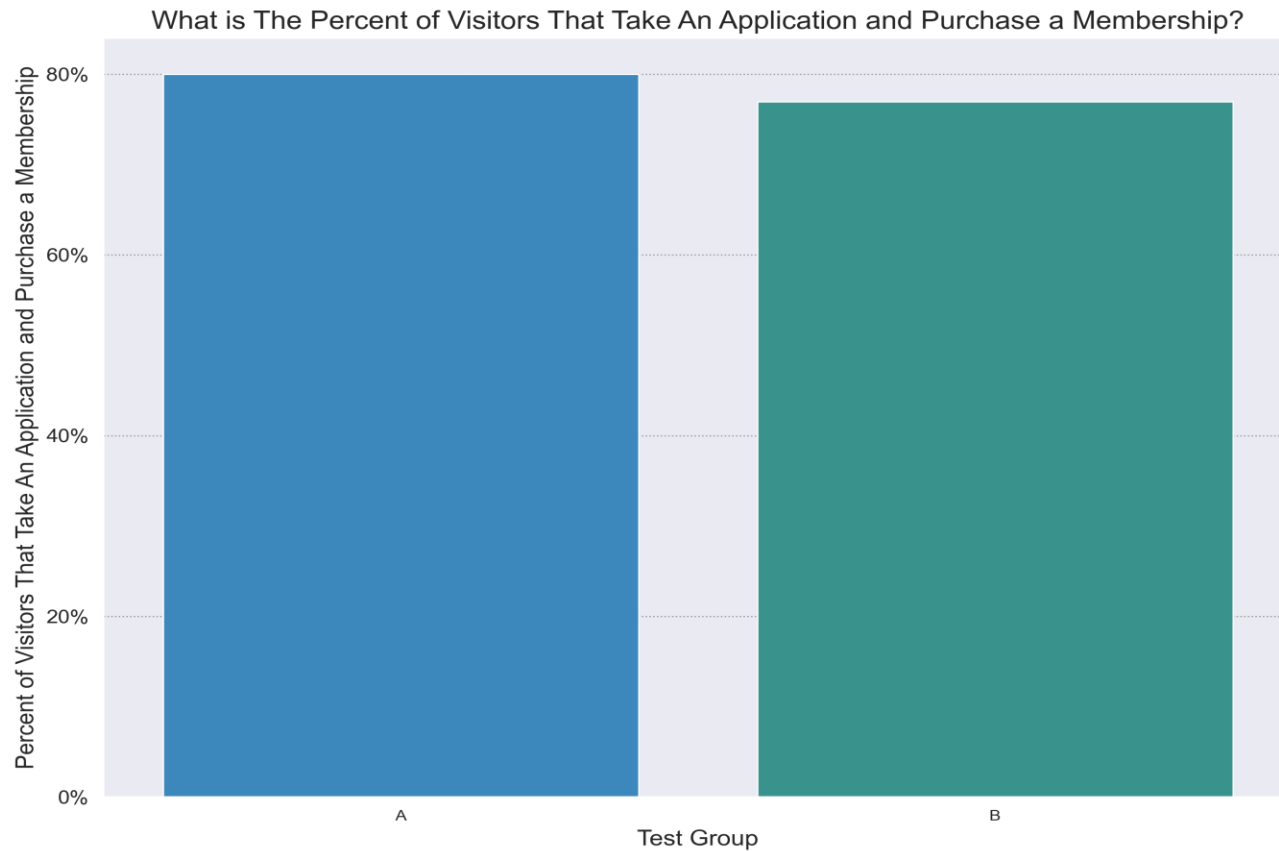
Hypothesis	Results
<ul style="list-style-type: none">There is no difference in the number of applications filled out by visitors that took the fitness test and those that do not.	Visitors that were not asked to take a fitness test were more likely to fill out an application.
<ul style="list-style-type: none">Visitors that took the fitness test and picked up an application were less likely to buy a membership than those that did not take the fitness test.	The data did not reveal a significant difference between the visitors taking the test and those that did not. A fitness test is not likely to get visitors to purchase a membership.
<ul style="list-style-type: none">Of all visitors to MuscleHub, there is no difference in the likelihood of buying a membership between the visitors taking the test and those that did not take the fitness test.	Visitors that did not take a fitness test were more likely to fill out an application. So we answer the question, yes, the fitness test does affect membership rates. Janet's hypothesis is correct.

Who picks up an application?



Group B: Visitors that that did not take a fitness test were more likely to pick up an application.

Of those who pick up an application, who purchases a membership?



Group A: While it seems as if visitors that took a fitness test were more likely to purchase a membership, there was not a significant difference between **Group A** and **Group B**.

Of all visitors, who purchases a membership?



Group B: Visitors that that did not take a fitness test were more likely to purchase memberships.

The Qualitative Data

"I always wanted to work out like all of the shredded people on the fitness accounts I see on Instagram, but I never really knew how to start. MuscleHub's introductory fitness test was super helpful for me! After taking the fitness test, I had to sign up and keep coming back so that I could impress my trainer Rachel with how much I was improving!"

- Cora, 23, Hoboken – interviewee 1

- "I took the MuscleHub fitness test because my coworker Laura recommended it. Regretted it."
- - Sonny "Dad Bod", 26, Brooklyn – interviewee 3



"I saw an ad for MuscleHub on BookFace and thought I'd check it out! The people there were suuuuper friendly and the whole sign-up process took a matter of minutes. I tried to sign up for LiftCity last year, but the fitness test was way too intense. This is my first gym membership EVER, and MuscleHub made me feel welcome."

- Shirley, 22, Williamsburg – interviewee 4

"When I walked into MuscleHub I wasn't accosted by any personal trainers trying to sell me some mumbo jumbo, which I really appreciated. Down at LiftCity they had me doing burpees 30 seconds after I walked in the door and I was like "woah guys slow your roll, this is T0000 much for Jesse!" I still ended up not signing up for a membership because the weight machines had all those sweat stains on them and you know, no thanks."

- Jesse, 35, Gowanes – interviewee 2

A Summary of The Qualitative Data

Of four interviewees, all mentioned the fitness test. One spoke positively and three spoke negatively about the fitness test.

One of the interviewee mentioned that they we put off by the stains on the workout equipment.

Two of four interviewees purchased memberships. One from each group.



Recommendations



Move the fitness test to the other side of the funnel

Make the fitness test optional after membership.

Investigate the drivers that cause visitors to pick up an application

If a visitor picks up an application they are likely to become members. Let's increase applicants.

Continue to strive to be seen as "helpful" and "friendly"

Prospects and customers noted in their interviews that they were impressed by the helpfulness and friendliness of MuscleHub staff.

Strive to keep workout area wiped down

MuscleHub can make a better impression by keeping the customer areas sanitary.

Make signup available online

Since there will no longer be a requirement for a fitness test, prospects can sign up online at their convenience and pay online. Make the application more available.

Endnote

- ¹A significance level of 0.05 was used in all hypothesis testing.



Thank you

Thanks to your commitment to this community shown by your taking time to review this project.

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