MuscleHub A/B Test

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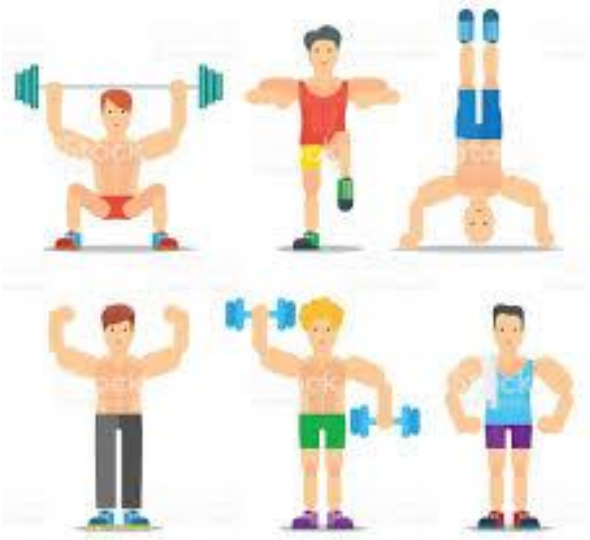
Description of AB Test Results

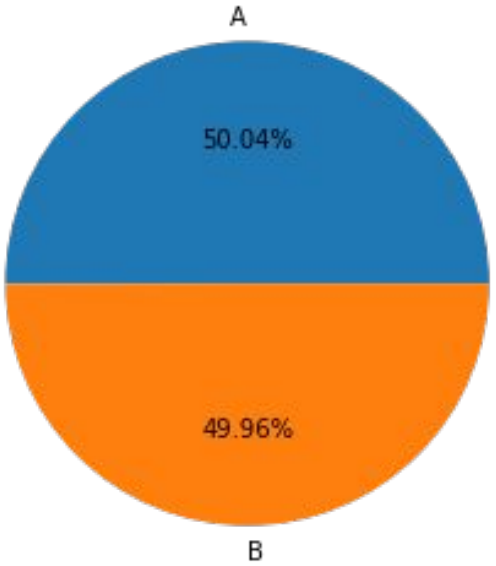
I chose to use an A/B hypothesis test because it takes two controlled variant groups, `A' and `B', and compares the responses of each group in statistical various experiments.



I also conducted a chi-squared test to check the significance of my results so that the data was truly representative of the population

A/B Test Results Groupings

- This data represents the number and % visitors split up into the A & B testing groups
  - Group A= 2504 members
  - Group B= 2500 members



A/B Test Results-Application

- Next, I examined what percentage of each testing group completed an application
  - The data results can be found below:

is_application	ab_test_group	Application	No Application	Total	% w/Application
0	A	250	2254	2504	.09984
1	B	325	2175	2500	.13000

- As one can see, the conversion rate of visitors of applicant between both the A and B testing groups is quite low, both falling short of 15%
- That being said, Group B showed a greater percentage of visitors that filled out an application

AB Test Results- Application cont.

- I conducted a hypothesis test to confirm whether or not the difference between application completement between testing Group A and testing Group B is significant
  - The chi-squared test returned p-value= 2.228e-06 meaning the result was, in fact, significant
    - This result indicates that the Group A and Group B are significantly different from one another

Significant!

A/B Test Results-Membership

- Next, I carried out a statistical analysis to see if purchased group members purchased a membership after picking up an application
  - The data results can be found below:

is_member	ab_test_group	Member	Not Member	Total	% Purchase
0	A	200	50	250	0.800000
1	B	250	75	325	0.769231

- The data reflects that there is a significant conversion rate for both groups between members who end up purchasing a membership after filling out an application
  - The data also indicates that people are more likely to purchase a membership **IF** they pick up an application

A/B Test Results-Membership cont.

- I also conducted a chi squared test to see if the difference between Group A and Group B is significantly different
  - The chi-squared test returned a p-value of .4326
    - This results indicates that the groups are not significantly different

Not Significant!

A/B Test=Membership cont.

- For the sake of data legitimacy, I also conducted an A/B test pertaining to membership purchases with all group members, instead of those who picked up an application
  - The data can be found below:

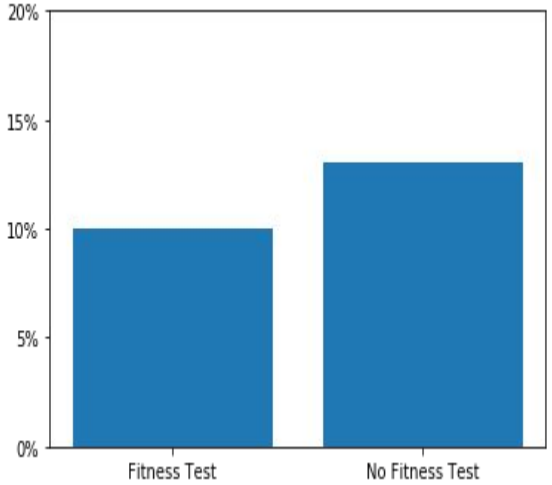
is_member	ab_test_group	Member	Not Member	Total	% Purchase
0	A	200	2304	2504	0.079862
1	B	250	2250	2500	0.100000

- After conducting a chi-squared test with these newly edited factors, the data returned a p-value=.014524, meaning that the populations are, in fact, significantly different

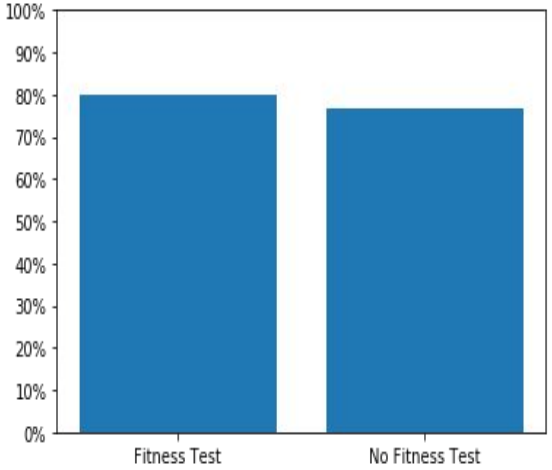
Significant!

Acquisition Funnel w/Chart

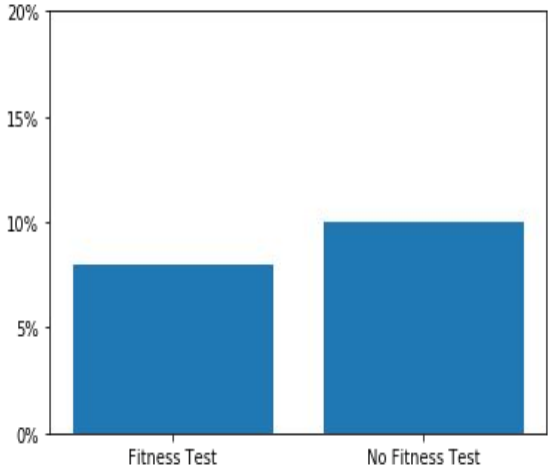
Below are the three tests visualized in bar graphs



% of Visitors who Apply



% of Applicants who Purchase



% of Visitors who Purchase

MuscleHub Recommendation

- The data shows that MuscleHub have a hard time converting visitors to applicants but are quite successful in their goals of converting applicants to members
- Given these results, I would suggest that MuscleHub approach a marketing firm to better understand what it is that prohibits customers from taking further steps to join their workout programs
    - This could include a number of marketing test or advertising initiatives to better capture the consumer sentiment as it pertains to body fitness and overall physical health
- One easy fix that MuscleHub could undertake would be to streamline he application process and synthesize this with a communication program that reminds site visitors of what MuscleHub has to offer on a cyclical basis