MuscleHub

Fitness Test
VS
No Fitness Test

Does the fitness test intimidates some prospective members?

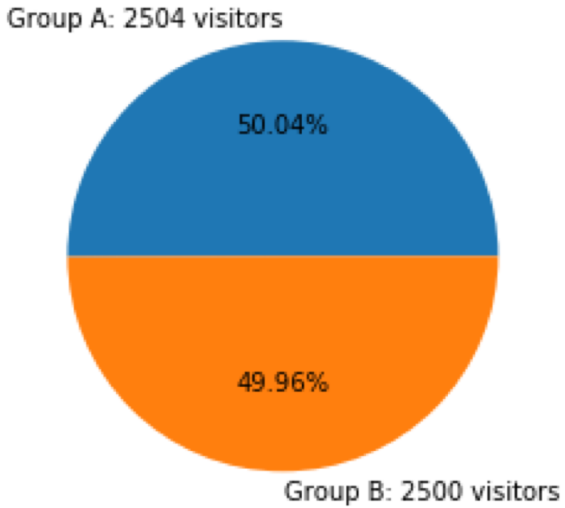
Visitors were randomly assigned to one of two groups:

- Group A were asked to take a fitness test with a personal trainer
- Group B skip the fitness test and proceeded directly to the application

The hypothesis is:

Visitors assigned to Group B will be more likely to eventually purchase a membership.

Exactly 5004* visitors took part in the experiment.



*It is enough to spot 25%-variation (minimum detectable effect) of 8% base conversion rate with statistical significance around 99%.

Hypothesis: **Fitness test does influence application rate.**

Group	Visitors	Applications	Success rate
“Fitness Test”	2504	250	10.0 %
“No Fitness Test:”	2500	325	13.0 %

Is this difference statistically significant?
Since we have two categorical datasets that we want to compare, we should use chi-square test.

With obtained **p-value=0.00096** and assumed confidence interval 95%, we could **accept** this hypothesis and conclude that more people apply if there is no fitness test.

Hypothesis: **Fitness test does influence applicant's purchase rate.**

Group	Applications	Purchases	Success rate
"Fitness Test"	250	200	80.0 %
"No Fitness Test"	325	250	77.0 %

Since we still have two categorical datasets,
statistical significance should be checked by chi-square test.

With obtained p-value=**0.805** and assumed confidence interval 95%, we should **reject** this hypothesis and conclude that fitness test **has no** influence on purchase rate of visitors who filled application.

Hypothesis: **Fitness test does influence visitors purchase rate.**

Group	Visitors	Purchases	Success rate
“Fitness Test”	2504	200	8.0 %
“No Fitness Test”	2500	250	10.0 %

Having performed chi-square test, we obtained p-value=0.014.
Thus, with reasonable confidence interval 95%, we could **accept** this hypothesis.

How confident we are?

Well, if we assume opposite: “Fitness test does **not** influence visitors purchase rate”, then probability of getting at least such extreme results is around 1.4% which is less than 100%-95%=5%. In other words, there is a very small probability that the difference which we observed in given A/B test had happened due to random chance.

However, if we wanted to be more confident and we assumed 99% confidence interval, then we have to **reject** this hypothesis since 100%-99%=1% is less than 1.4%. The variation in obtained data is not enough to be 99% sure, but it’s enough to be 95% sure.

Recommendation for MuscleHub

When it comes to practical interpretation of the test results, we also have to consider domain specific knowledge and elaborate common sense reasoning.

In our qualitative interview results, we could find evidences of fitness test being intimidating for some potential customers, however some of them reported the opposite. Thus, taking on account assumed confidence interval 95% and interview results, my recommendation would be to switch fitness test from mandatory to **optional** step.