

DRILL: Getting Testy...

For each of the following questions, outline how you could use an A/B test to find an answer. Be sure to identify all five key components of an A/B test we outlined above.

Does a new supplement help people sleep better?

The control would be a random sample that takes a placebo. The treatment would be a random sample that takes the actual supplement in question. We'd want to look at age, gender and lifestyle habits across both populations to make sure that both populations are approximately the same.

The hypothesis of our study would be that those who take the new supplement will experience better sleep.

To assess our hypothesis we'd want to look on two types of outcomes. The first involves physiology – if it's reasonable, it may make sense to have participants participate in a sleep study or, at a minimum, have participants agree to having sensors placed under their pillows as a way of benchmarking the quality of their sleep. The second data point would be qualitative, we'd want to know if participants *feel* as if they're getting better sleep.

Will new uniforms help a gym's business?

In this case, the sample population would be whoever is at the gym at the time measurements are taken for the control condition (uniforms stay the same) and the treatment condition (new uniforms introduced).

We'd want to make sure we account for seasonality but conducting the study during a similar time period (e.g. same day of the week, same time during the day etc).

We would hypothesize that uniforms help a gym's business. In terms of outcomes of interest, that largely depends on what metrics define a well-running business. In this case, we might consider the following critical to business: customer conversion (of those who come to the gym interested in signing up).

If prospective customers are required to sign in and sign-ups are captured digitally, then measuring conversion can be a relatively passive task which will be good for the overall quality of the analysis.

Will a new homepage improve my online exotic pet rental business?

The control will not have access to the new homepage, whereas the treatment will have access to the new homepage.

To make sure the data is truly measuring outcomes based on the treatment variable, measures should be taken to ensure that both samples are similar in location.

The hypothesis would be that the new homepage will improve exotic pet rental business.

The outcome of interest would be sales conversions – defined as the ratio of those who visit the website compared to those who end up renting an exotic pet.

A clear time frame should be agreed upon for this study. If historical sale data reveal that conversion typically occurs within 2-4 weeks after an initial visit, the time frame for the study should be around 2-4 weeks to measure whether or not the new web design modulates sales behavior.

If I put 'please read' in the email subject will more people read my emails?

The control would be a population that receives the a set of subject header without 'please read'. The treatment population would receive the same set of subject headers with 'please read' appended to them.

The hypothesis would be that subject headers with 'please read' would result in an increase in e-mail views.