

For each of the following scenarios, call out the potential biases in the proposed experiment. Do your best to try to discover not only the bias, but the initial design. There is plenty of room for interpretation here, so make sure to state what assumptions you're making.

You're testing advertising emails for a bathing suit company and you test one version of the email in February and the other in May.

The potential bias here would be that one version of an email is sent out in February, a month that is usually associated with winter, and the other one is sent out in May, which is a lot warmer. I believe that the people that see the email in May are more likely to respond to the advertising emails because summer is closer and it is warmer. The initial design is bad since the emails are going out at different times of the year.

You open a clinic to treat anxiety and find that the people who visit show a higher rate of anxiety than the general population.

The potential bias here is that by opening a clinic to treat anxiety, you are selectively picking out the people who have anxiety to go to the clinic for treatment, since it is a clinic solely created to treat anxiety. A person without anxiety will not go to the clinic, since they do not have a use for it. The initial design actively selects for people with anxiety.

You launch a new ad billboard based campaign and see an increase in website visits in the first week.

The potential bias here is that you are seeing an increase in website visits during the first week of the campaign and not enough time has passed so that you can accurately gauge the effect of the campaign. Another thing to consider is the “newness” factor. Perhaps after

waiting a little while, the effect of the new ad campaign may be tempered a little bit and shown to be less effective.

You launch a loyalty program but see no change in visits in the first week.

The assumptions I'm making here are quite liberal. Did the loyalty program reach it's intended target? Did the loyalty program suck? Did customers not react to the loyalty program because it was too complex or understated in any way? Is the website equipped adequately to measure the effects of the loyalty program? Are the visits to the websites filtered to new visits vs overall visits?