**16.5 Experimental design and A/B testing**

**Challenge: Evaluate an experiment analysis**

1. ***Hypothesis: Creating an effective recruiting slogan***
   1. The samples, 50 captured droids per group is too small. We can’t be certain if “distressed droids” accept slogan willingly.
   2. The samples must be spread to include larger and random groups in the galaxy to identify the effectiveness of the slogan content prior to selecting the best. These groups should represent the population of the galaxy.
   3. The slogan campaign must also be run by other leaders.
2. ***Hypothesis: Improve public relation.***
   1. In this experiment, I like to see a cross test, where Jar Jar Binks goes to the planet Mace Windu was previously. The result can show if one of this Jedi have the talent to improve public relationship. Both planets(samples) will have exposed to the Jedi’s message and might respond differently. This different can show if one Jedi’s afford is better than the other.
   2. During the campaign, is the audience are native to the planets or outsiders that is visiting or there just temporarily?
   3. Repeat the campaign again and see if the result can be duplicated.
3. ***Hypothesis: Work place satisfaction***
   1. In this case, we have a sample distribution issue. Out of 5 sites, only 3 are highly populated by HR staffs. However, IT are equally distributed.
   2. Job satisfaction report is a fair study for IT due to this distribution but not for HR.
   3. For fair result, drop the 2 sites where IT is not present for overall work place satisfaction.
4. ***Hypothesis: Fitness tracker App activity increases***
   1. No data provided if this app runs on cell phone of watch.
   2. Cell phone might be shared within family members. The sum activity may not represent single individual fitness activities. Variety of user can lead to mixed results.
   3. What exactly is being tracked? Heart rate, physical activities, etc
   4. “Opt In” is a voluntary. It may not represent the overall sample of all the App owner’s fitness level.
   5. Not all will have the access to smart phone/smart watches with this App. This may not include all the groups in any population.
5. ***Hypothesis: Cheating prevention***
   1. The teacher should have written just two versions to minimize the complexity of the test and results.
   2. The copies should be randomly mixed prior to distributing copy to the students.
   3. The goal of these two versions is to prevent cheating, not to identify which version is easier.