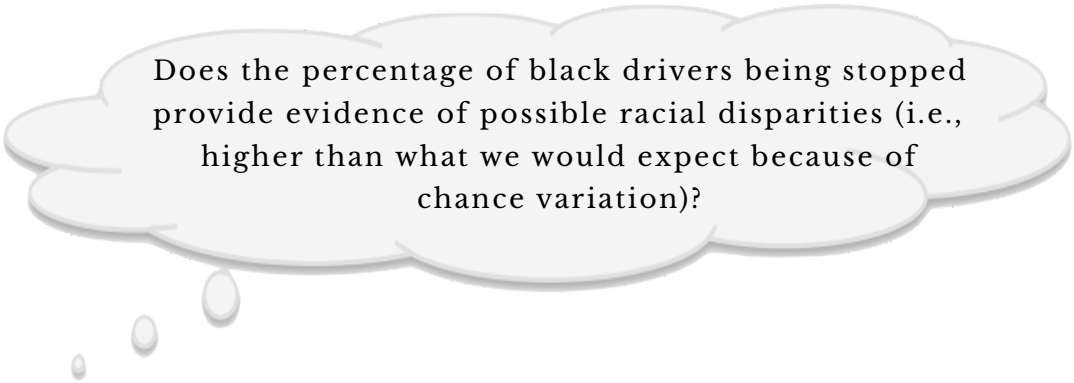
Racial Disparities in Police Stops

In roughly a one year period, beginning in October of 2016, the Minneapolis Police Department recorded 50,950 traffic stops in their public database. In this activity, we will use these data to analyze whether black drivers were more likely than others in the population to be targeted by police for traffic stops.

On Halloween (October 31) 2017, the Minneapolis Police Department made 105 traffic stop. Of those, 39 of the drivers were black. At that time Minneapolis' population was 18.6% black.

In this activity, you will be exploring the following research question:



Discuss the Following Questions

1. What percentage of the drivers that were stopped were black?

2. What does that suggest about the answer to the research question? Explain

Suppose for the moment that there are *no* racial disparities in police stops. In other words, the percentage of blacks stopped by the police should reflect the percentage of blacks in the population.

3. What percentage of the drivers that were stopped would you expect to be black, given the population?

In both the *Helper or Hinderer* course activity and the *Monday Breakups* course activity, all of the elements in the simulation model had the same probability. When the probabilities of each element in the model are exactly the same, we say the "just-by-chance" model is a **uniform probability model**.

The "just-by-chance" model does not have to be a uniform probability model. The elements can have differing probabilities. As long as the elements being selected are still random, this is still a "just-by-chance" model.

4. Using the value from the previous question, write the hypothesis for the "just-by-chance" model.

5. Draw a picture of the sampler (model) that you will use to generate outcomes from the "just-by-chance" model. In the picture, be sure to (1) indicate the type of sampling device used (mixer, spinner, etc.); (2) label all the elements in your sampling device; (3) label the probability associated with each element; and (4) indicate the Repeat and Draw values you will use.

- Set up the model/sampler in TinkerPlots™.

Simulating the Data

- Carry out a single trial of the simulation in TinkerPlots™.
- Plot the outcomes from the trial.

6. What is the summary measure from the plot that you will be collecting?

- Collect the appropriate summary measure from the plot of your first trial.
- Carry out 499 more trials (500 trials total) of the simulation in TinkerPlots™.

Evaluating the Hypothesized Model

- Plot the results from the simulation.

7. Sketch a plot of the results below.

8. Describe the shape of the distribution. Also compute the mean and standard deviation.

9. Use the mean and standard deviation to compute the range of *likely* results.

10. Given the range of *likely* results you just computed, how compatible is the observed result with the results from the hypothesized model? Explain.

11. Use the evidence from the simulation to answer the research question.

Racial Disparities in Police Stops?

MODEL

The model has two outcomes–one for African-Americans and one for other races. Each is **not** equally likely.

SIMULATE

Randomly generate 105 outcomes from the model. For each trial, compute the number of African-Americans. Generate many trials.

EVALUATE

Compile all of the numerical summary measures into a single distribution, Evaluate the initial questions by computing the range of likely values under the hypothesized model–two standard deviations from the mean. Determine whether or not the result from the observed data is within the range of likely results.