**AB testing problem**

**Background:** An interesting experiment took place beginning in April 1979 in Albuquerque, New Mexico. The local police department tried a procedure they thought might have the effect of reducing driving-while-intoxicated (DWI) related accidents. The procedure was quite simple. A squad of police officers used a special van that housed a blood alcohol testing (BAT) device; the van became known as the “Batmobile”.

**Data:** In the quarterly data set (**Batmobile.xlsx**) is the information on the following variables:

**ACC** = injuries and fatalities from Wednesday through Saturday nighttime accidents

**FUEL** = Fuel consumption (millions of gallons) in Albuquerque

The first 29 observations in the data set are a control period before the implementation of the Batmobile program. The following 23 quarterly observations are the experimental period.

**Task:** Your job is to explain statistically whether the Batmobile program was effective.

1. Use the following ratio: ACC / FUEL CONSUMPTION to determine the effectiveness of the Batmobile program. Create a new column with this ratio.
2. Do the results lead to the inference that the Batmobile program was effective? Present your reasoned opinion on the efficacy of the Batmobile program.

No, it was not effective. The p-value is higher than 5%.

1. What degree of confidence you have in your answer?

23% confidence

1. Discuss why AB testing might not be the right tool in this situation? Propose a different approach that would lead to more accurate interpretation of the results.

Sample size is too small.

t-test?