MA376 Lesson 1: Public Sentiment on the Use of Facial Recognition

Background: In the past, facial recognition technology (FRT) was viewed as something straight out of science fiction. However, over the past decade, this technology has become viable and increasingly widespread. Recently, several lawmakers have expressed concern that certain groups are not using FRT responsibly. Let us examine public sentiment on this topic using a dataset based on a portion of the Pew Research Center's American Trends Panel (Pew Research Center, 2019).[1] The variables in the dataset are described in the table.

Variable	**Description**
TrustAdvertisers	Do you trust advertisers to use facial recognition technology responsibly?
TrustTechCompany	Do you trust technology companies to use facial recognition technology responsibly?
TrustPolice	Do you trust law enforcement to use facial recognition technology responsibly?
Education	College Educated
Race	Race

Step 1: Ask a research question

Write a research question involving two variables in the dataset.

Step 2: Design a study and collect data

Use no more than three sentences to describe the data. Be sure to indicate how many subjects are in the analysis and what values the variables take on.

Step 3: Explore the data

a. Create a bar graph of the response variable. Describe the plot.

b. Create a contingency table and mosaic plot to summarize the response and explanatory variables. Does the plot suggest an association exists? Explain.

c. Identify a potential confounding variable and explain how it may be confounding in this study.

[1] All variable modifications are documented here. Additional information about the Pew study can be found in the ATP W49 methodology pdf.

d. Create another mosaic plot that includes the third variable. Does the plot suggest that the third variable is confounding? Explain.

e. Construct the Sources of Variation Diagram:

Step 4: Draw inferences beyond the data

Name one theory-based approach we could use to determine if there was a statistically significant difference between the levels of the explanatory variable.

Step 5: Formulate conclusions

How far can we generalize our conclusions? Could we draw a cause-effect conclusion if we observed statistically significant differences in Step 4? Why or why not?

Step 6: Look back and ahead

What are two limitations to our approach? Discuss how we could address these limitations in a future study.

Further Investigation

Work with a partner to investigate another response variable. Are your conclusions consistent with this analysis?

References

Pew Research Center. American Trends Panel Wave 49. https://www.pewresearch.org/internet/dataset/american-trends-panel-wave-49/ (2019). Accessed: 2020-08-12.

```r
library('tidyverse')

dat <- read_csv('C:/Users/annyclaude.joseph/Documents/Joseph_Teaching/AY21-1/MA376/Lectures/American Tr
# head(dat)


# Insert your code here
```