

Stat 201: Statistics I

Presentation/Data Analysis Assignment

Metropolitan
State University



Presentations

Students will make a presentation analyzing the statistical content of a recent news item.

- Students may work alone or in pairs.
- Presentations should be short (~ 5 minutes).
- Slides are highly encouraged, but not required.
- News items should be recent (published within the last year).
- News item may be from virtually any real news or information source (no Onion articles please). Check with instructor if there are any questions.
- Link to or copy of news item to be analyzed must be provided to the instructor at least a week before presentations are made.

Content

The content of the analysis will vary depending on the content of the news item. Here are some questions to consider:

- What are the statistics being reported (proportions, means, etc.)?
- What is the population being studied? How were samples created?
- What is the source of the statistics? Is there a potential for bias?
- Do the results have statistical significance? Practical significance?
- Are effect sizes (confidence intervals) reported? Are results of statistical tests (p values) reported?
- Does the headline of the news item seem to reflect the statistical content?
- Does the news item draw reasonable conclusions from the statistics?
- Are there reasons to be suspicious of the statistics or the reporting?
- Does the news item make it easy to find the original source?

Extra analysis

Sometimes the original source of the statistical content can be found. Metro State students have access to many journal article reporting original research through the library. While analyzing journal articles is beyond the scope of this class, much can be learned by reading only the abstract. Further questions can then be considered:

- Does the news item come to the same conclusion as the researchers?
- Is the news item about what the researchers considered to be most important?
- What information from the original source would have been important to include in the news item?

Data analysis project

Alternatively, students can create a data analysis report.

- Locate a data set and formulate a research question that can be answered by the data
- Create a data analysis report in Rmarkdown. The report should include:
 - A paragraph or two describing the data set, including the source of the data and the research question that will be answered
 - A summary of the data, including descriptive statistics and a graph of the distribution
 - An hypothesis test to answer the research question
 - A conclusion summarizing the results in the context of the research question
- Students can work together on a common data set
- However, each student must have their own research question and submit their own report (Rmarkdown file and pdf should be submitted)