DissComm 2018 Special Event
Scenario and Tasks

Scenario

The head of your statistical organization (the Chief Statistician of Wakanda) recently spoke to a group of stakeholders. Several members of the audience asked questions about the accuracy and objectivity of the data Statistics Wakanda publishes, and seemed especially disturbed by the fact that your latest jobs report described employment in one industry as “rising” and in another industry as “essentially unchanged”, when “both obviously went up!” These questions led to an unexpected discussion on sampling error and statistical significance.

The Chief Statistician may receive similar questions from a group of stakeholders to whom she is speaking tomorrow, and asked you for a chart that would help her explain these concepts. The composition of tomorrow’s group is summarized by the attached persona.

After speaking to your favorite statistician, he produced the following three charts and sets of talking points. Your task is to give him feedback within two hours so that he has enough time to make changes and you can deliver the final chart and talking points to your Chief Statistician in time for her talk tomorrow.

Tasks

1) Select one of the options below.

2) Edit and improve the visualization and talking points so that they explain the concepts of sampling error and statistical significance and are tailored to the attached persona. You can decide to develop an entirely different visualization or draft an entirely new text.

3) Print out or draw a poster showing your new visualization and talking points.
The 90-percent confidence interval represents the symmetric range of values around the estimate for which there is 90-percent probability that the actual over-the-month change is contained within that range of values. For example, the over-the-month change for construction is 17,000 with a 90-percent confidence interval of plus or minus 26,400 so the range is -9,400 to 43,400. Since this range includes values less than zero, we could not say with confidence that construction employment had, in fact, increased that month. For goods-producing, the over-the-month change is 49,000 with a 90-percent confidence interval of plus or minus 35,800 so the range is 13,200 to 84,800. In this case, it is likely that manufacturing employment had, in fact, risen over the month.

- If the over-the-month change is statistically significant, the blue bar will not cross the zero line.
- The red dot representing the over-the-month change is in the middle of the blue bar that shows the confidence interval for the specific industry.
**Talking Points**

The 90-percent confidence interval represents the symmetric range of values around the estimate for which there is 90-percent probability that the actual over-the-month change is contained within that range of values. For example, the over-the-month change for construction is 17,000 with a 90-percent confidence interval of plus or minus 26,400 so the range is -9,400 to 43,400. Since this range includes values less than zero, we could not say with confidence that construction employment had, in fact, increased that month. For goods-producing, the over-the-month change is 49,000 with a 90-percent confidence interval of plus or minus 35,800 so the range is 13,200 to 84,800. In this case, it is likely that manufacturing employment had, in fact, risen over the month.

- If the over-the-month change is statistically significant, the red dot falls outside of the blue bar. This means that the over-the-month change is statistically different than zero, in a positive or negative direction.
- The blue bar shows the confidence interval for the specific industry, crossing the zero line at the mean value.
The 90-percent confidence interval represents the symmetric range of values around the estimate for which there is 90-percent probability that the actual over-the-month change is contained within that range of values. For example, the over-the-month change for construction is 17,000 with a 90-percent confidence interval of plus or minus 26,400 so the range is -9,400 to 43,400. Since this range includes values less than zero, we could not say with confidence that construction employment had, in fact, increased that month. For goods-producing, the over-the-month change is 49,000 with a 90-percent confidence interval of plus or minus 35,800 so the range is 13,200 to 84,800. In this case, it is likely that manufacturing employment had, in fact, risen over the month.

- The blue bar shows the over-the-month change. The “whisker lines” show the confidence interval for the specific industry.
- If neither whisker crosses the zero line, that means that the over-the-month change is statistically different than zero, in a positive or negative direction.