

Day 2 - Statistics

Agenda

- 911! Discussion and Debrief
- ‘How long is 30 seconds?’ Activity Intro
- iPod shuffle Activity
 - Investigation into meaning of random

Help 911 Activity Timeline

- (~10 minutes) Finish small group decision-making and create chart paper and narrative
- (~5 minutes x 3) Groups presentations from each table representing
 - City Council
 - Arrow
 - Metro
- (~10 minutes) Debrief/Debate

Help 911 - Your Task

- The goal of this is **NOT** to engage in debate about whose data is most persuasive. We will be tempted to do this, but this should not be our focus.
- The goal of this **IS** to engage in debate over how things like bias and persuasion impact statistical decisions.

Help 911 - Reports

- Each group will have roughly 1-2 minutes to report the findings on their chart paper
- Make specific references to what data was and was not included for calculations, and explain your decisions.

Discussion

- How does bias impact our decisions?
- Are there any 'facts' that all 3 perspectives agree on?
- Did we notice any themes between the groups representing the same institutions?
- What data was included? Ignored? Why?

How long is 30 seconds?

- Questions relevant to this activity:
 - How good of a judge of time are we?
 - How can we measure how accurate someone is at telling how much time has passed?
 - Are there gender differences in this skill?
 - Can practice improve accuracy in predicting the passage of time?

How long is 30 seconds?

- For this activity we will approach some of these questions through an investigation into how accurate we are at predicting when 30 seconds has passed.

How long is 30 seconds?

- One of the main goals of this activity is to determine how we will collect our data
- We need to balance what we may perceive to be 'ideal' conditions for data collection with the reality that we need to collect the data in a fashion consistent with the limitations of today's PD (e.g. – time is limited, space is limited, resources are limited).

How long is 30 seconds?

- In your groups, spend roughly 5 minutes developing (prepare to share):
 - A data collection protocol for ‘ideal’ conditions
 - A data collection protocol knowing we need to spend less than 15 minutes to collect the data

How Long Is 30 Seconds?

- (~10 minutes) Share out interview protocols with goal to create unified plan
- Once protocol is developed we will collect the data (make sure to log gender for each participant) and log it on a unified chart.

How long is 30 seconds?

- At this stage – data has been collected
- We will use gender as a characteristic to allow for comparison

How long is 30 seconds?

- Task:
 - Find the mean, median, and range for:
 - The entire data set
 - Only the men
 - Only the women
 - Create boxplots for all 3 data sets and graph them on the same axis (min, Q1, Median, Q3, max)
 - Median is the center data point (or average of middle two)
 - Q1 is the median of the data below the overall Median
 - Q3 is the median of the data above the overall Median

How long is 30 seconds?

- Discussion questions
 - How do the 3 data sets compare?
 - Does there appear to be a gender difference?
 - Are there any ‘outliers’? What would an outlier look like for each of the data sets?
 - What is the ‘spread’ of each of the data sets? How do they compare?

How long is 30 seconds?

- Discussion Questions about box plots (or box and whisker plots)?
 - Is it possible for a box plot to have no whiskers? If so, what does that mean about the data set?
 - Is it possible for a box plot to have no box? If so, what does that mean about the data set?
 - A box plot uses the median as its measure of center (Q1 and Q3 are essentially medians as well). What would you expect to happen if we redefined a boxplot to be drawn with the min, 'lower-mean', mean, 'upper-mean' and max? (lower mean would be calculated by taking the average of only those observations below the overall average). How would this impact the way we interpret our data?