Module 2: Central tendency, shape, and difference in means

MSIR 525

Monday, September 23, 2019

Recap of Module 1 (check list from syllabus; see pages 1-2)

- We learned about the NHST framework
- We developed an understanding of p-values and how they can be used to inform evidence-based management decisions
- We compared different types of error that can threaten our inferences and conclusions
 - We also learned how one can attempt to avoid these errors and disclosures that must be given if a study is underpowered
- We contrasted three different research designs (e.g. observational) and two different data collection approaches (e.g., longitudinal)
- We learned about different data sources and data types
- We summarized several types of validity and phenomena that may threaten them

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- 10/7/2019
 - In-class exercise for credit (i.e., a hackathon)
 - Applying what we learned in M2 to ascertain whether or not a meaningful group difference exists

• Let's get started! ©

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Table 2. Frequency Distribution						
			Job	Pay		
Rating	Stress	WLB	satisfaction	satisfaction		
10	0	0	0	3		
9	0	0	0	0		
8	0	2	1	0		
7	3	0	3	2		
6	2	0	0	2		
5	2	1	0	0		
4	0	1	2	0		
3	0	0	1	0		
2	0	3	0	0		
1	0	0	0	0		
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Count	7	7	7	7		

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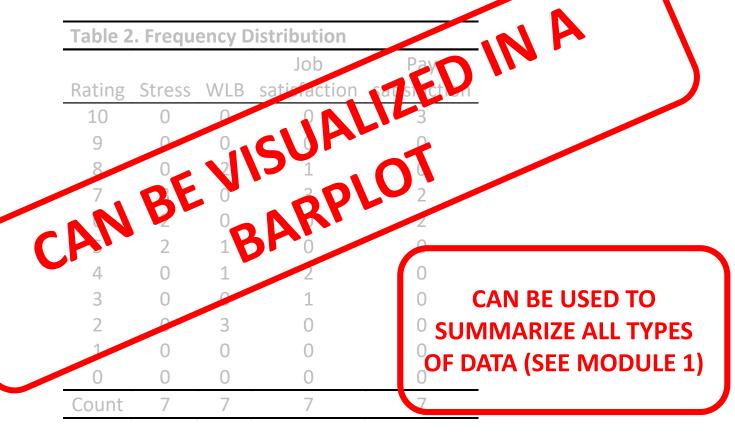
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$$= \frac{3}{7} = 43\%$$

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8	0	0 (0%)	7	1.0 (100%)	
7	3	.43 (43%)	7	1.0 (100%)	
6	2	29 (29%)	4	.58 (58%)	
5	2	.29 (29%)	2	.29 (29%)	
4	0	0 (0%)	0	0 (0%)	
3	0	0 (0%)	0	0 (0%)	
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```
4 out 7 = "high" scores
4/7 = .57 (57%)
```

```
3 out 7 = "low" scores
3/7 = .43 (43%)
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Central tendency

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• Honestly, we are mostly just interested in the **mean**

Variance

Skewness

Kurtosis

Shape

Skewness

Kurtosis

Threats to descriptive statistics

Missing data

Outliers

Range restriction

Interpreting descriptive statistics