Homework 2

Due Wed Nov 27 5 PM

For all questions, please **show your work** or **include a copy of the syntax and output**, whichever is relevant. Please type your answers in report form, as if you were describing results in a published study. Include the relevant statistical values in the text. **Your answers should be in your own words** and most answers should be approximately one paragraph. Please email me a pdf of your completed homework.

1. In a (hypothetical) study of supervisor and employee perceptions of collaborative work environment, both supervisor and employee from ten companies answered a question about how collaborative the work environment was using a 9-point scale from "not at all collaborative" to "extremely collaborative." Enter the data and use the appropriate statistical test in **SPSS or R** to investigate whether there was a significant difference between employee and supervisor perceptions of collaborative work environment. Report and interpret your results in terms of the research problem and be sure to include the relevant descriptive and statistical values and statistical decision.

Company	Employee	Supervisor
1	7	6
2	5	6
3	7	5
4	2	1
5	9	5
6	5	5
7	6	5
8	9	6
9	8	9
10	6	7

2. Data for the following problems come from a Pew Center survey about fake news.[1] Respondents were asked whether journalists were to blame or not for "creating made-up news and information".

Are journalists to blame for made up news and information?

No	Yes	Total
570	351	921

Use a **hand-computed** z test to check whether there is an equal proportion of those who responded "yes" and "no" differed significantly. Calculate the 95% confidence interval and the margin of error by hand. Report and interpret your findings (please type the write-up portion).
(1="yes",0="no")

3. Below are the results when the responses to the journalist question above was examined by whether the respondent was a Democrat or Republican (independents or other affiliations were excluded for this example).

	Are journalists to blame for made up news and information?		
	No	**Yes**	**Total**
Democrat	375	88	463
Republican	195	263	458
Total	570	351	921

Download the Pew data (`pewnews.sav`) summarized in the table above from the data page at http://web.pdx.edu/~newsomj/data.htm. Obtain a chi-square test in **SPSS or R** to find out whether there are differences in beliefs about made-up news and information differed by political party. Report and interpret your findings in terms of the research problem. Be sure to report either row or column percentages to help explain the results and report the magnitude of the effect.

[1] These data are constructed to correspond with the Pew survey results (https://www.pewresearch.org/journalism/2019/06/05/many-americans-say-made-up-news-is-a-critical-problem-that-needs-to-be-fixed/) using a random subset of values.

4. Using the structured play data from HW 1, obtain a scatterplot and compute a correlation coefficient between time (`time`) and ratings of whether students get along (`getalong`) in **SPSS only**. Report your findings, including r, r^2, significance, and the 95% confidence interval for r and interpret the results. Note any problems if they are evident from the scatterplot.

5. Using the structured play data, compute a simple regression analysis in **R only** (variables will need to be numeric), using `getalong` as the predictor of `time`. Report the unstandardized regression coefficient, significance, and the standardized regression coefficient, and interpret the results.

6. The data for this problem come from a study of drivers arrested for driving while intoxicated (DWI) [2]. These drivers were asked to rate a series of descriptors about themselves on a 5-point scale (1=strongly disagree to 5=strongly agree) given below.

Am spontaneous	rspon
Don't think ahead	rnothink
Need immediate gratification	rgradifi
Think about things in the short run	rshterm
Do risky things	rriskyact
Take risks for fun	rriskfun
Find trouble exciting	rtrouble

Download the data set (`dwi measure.sav`) from the data page at http://web.pdx.edu/~newsomj/data.htm. Investigate the internal reliability of the self-perceptions scale, using **SPSS or R** to compute Cronbach's alpha (be sure to obtain the mean inter-item correlation and alpha-if-item-deleted information). If there are any items that should be removed based on the results, delete them one at a time and rerun the analysis until the reliability can no longer be improved. Report and interpret your findings, but only include the output and information in your write-up from the first and last analysis.

7. Below are hypothetical data from a sample of employees of three call center agencies (N = 18): Instant Sales Partnership (ISP), Advanced Targeted Calling (ATC), and the Badgering Cell Associations (BCA). Each score represents employee perceived stress level ratings (1 = "Not at all stressful" to 6 = "The most stressful of any job I have had"). Using the data from the table below, compute an ANOVA **by hand** to determine whether employees from the three agencies differ significantly on their perceived stress levels. Please show your work. Report and interpret your results, including the relevant means and statistics and magnitude of effect (η^2) in your write-up.

ISP	ATC	BCA
2	6	2
3	4	3
3	3	4
1	6	4
1	5	2
4	6	3

8. Enter the data from the previous problem and use **SPSS or R** to conduct an ANOVA and explore your results further by requesting Tukey (or Games-Howell, if appropriate) *post hoc* tests to check which agencies differ from one another on employee stress. Report and interpret your post hoc test findings (omit the ANOVA results given in the previous problem) in terms of the research problem.

[2] Winfree, L. Thomas. EVALUATING A DRIVING WHILE INTOXICATED (DWI) NIGHT DRUG COURT IN NEW MEXICO, 1997-1998. ICPSRversion. Las Cruces, NM: New Mexico State University [producer], 2001. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2001. http://doi.org/10.3886/ICPSR03186.v1

9. Read **one** of the following articles (password protected copies are available from the class website http://web.pdx.edu/~newsomj/) and write **two paragraphs** summarizing the article. First, describe the study design (e.g., randomized experiment, non-equivalent control group design, cross-sectional survey; for a quick refresher, see http://sphweb.bumc.bu.edu/otlt/mph-modules/programevaluation/ProgramEvaluation7.html) and purpose of the study **in your own words**. Be sure to include who/what was studied (e.g., who were the participants?) and the number of cases. Then, choose one statistical test used in the article that you have learned about in the course so far (i.e., chi-square, correlation, simple regression, reliability, ANOVA), and, **in your own words**, describe the hypothesis that is being tested, the results obtained, and what the findings mean. **Be sure to include the relevant statistical values and whether the results were significant.** Write your paragraphs as if you were describing results in a published article and reporting someone else's results as in a review article.

Ariani, D. W. (2013). The relationship between employee engagement, organizational citizenship behavior, and counterproductive work behavior. *International Journal of Business Administration, 4*, 46-56.

Bas, G. (2011). Teacher student control ideology and burnout: Their correlation. *Australian Journal of Teacher Education (Online), 36*, 84-94.

Kacewicz, E., Pennebaker, J. W., Davis, M., Jeon, M., & Graesser, A. C. (2014). Pronoun use reflects standings in social hierarchies. *Journal of Language and Social Psychology*, *33*, 125-143.

Warf, C. W., Clark, L. F., Desai, M., Rabinovitz, S. J., Agahi, G., Calvo, R., & Hoffmann, J. (2013). Coming of age on the streets: Survival sex among homeless young women in Hollywood. *Journal of Adolescence, 36*, 1205-1213.