

BUS 230: Business and Economics Communication and Research

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Fall 2017

Practice Exam 2

1. (10 points) A researcher is interested in determining whether there is a relationship between grade school children's interests and the class standing. The researcher asked 478 grade school children whether being good at sports, being popular, or getting good grades was their most important goal. Class standing is 1st grade, 2nd grade, 3rd grade, 4th grade, and 5th grade.

Use the R output given to test the hypothesis that there is a relationship between children's interest and class standing. Describe (1) what test you use, (2) what code was used to produce the output that you use, and (3) explicitly carry out all the steps of a hypothesis test.

2. (10 points) A researcher is interested in determining whether there is a monotonic relationship between employee burnout and employee job satisfaction. The researcher administers a survey that quantifies each of these variables on a scale of 1-100, where larger numbers indicate a higher level of burnout or job satisfaction, respectively.

Use the R output given to test the hypothesis that there is a monotonic relationship between employee burnout and job satisfaction. Describe (1) what test you use, (2) what code was used to produce the output that you use, and (3) explicitly carry out all the steps of a hypothesis test.

3. Suppose a hospital surveys its recently discharged surgery patients regarding their satisfaction of the care they received. After being discharged, patients need to continue visiting their doctors to treat their conditions and monitor their recovery.

(a) (5 points) State two (2) possible specific and measurable research questions that this study could investigate.

(b) (5 points) Describe two (2) ethical considerations that you should make before collecting your sample and beginning your study.

(c) (5 points) Describe two (2) potential sources of bias.

4. Suppose an advocacy group for liberal causes posts a survey on their Facebook page. The Facebook post encourages people that “like” their page to take the survey, and re-post it to their profile so that their friends may take the survey. Suppose the survey includes the following question:

- Do you agree that minimum wage should be high enough to allow hard working Americans with full-time jobs to earn enough income to keep their families out of poverty? **Yes/No**

(a) (5 points) Describe one (1) potential source of bias considering the *wording* of the question. Describe how the choice of words lead to that bias.

(b) (5 points) Describe two (2) potential sources of bias considering the *sample design*? For each, do you think the bias lead to a sample that has a larger proportion agreeing than the population, or a smaller proportion agreeing with the statement? Explain.

5. Suppose you are employed by a large company to determine employee satisfaction and utilization of their health insurance policy.

(a) (5 points) State two (2) possible specific and measurable *research questions* that this study could investigate.

(b) (5 points) Describe three (3) ethical considerations you should make before collecting your sample and beginning your study.

(c) (5 points) Describe two (2) potential sources of bias.

