SW 830: Applied Social Work Research: Experimental and Quasi-Experimental Designs
Study Questions – 4
DUE: 09/23/08

§ Your name and the course number must appear on each page.
§ All pages must be stapled together.
§ Do not use the question sheet for your answers.
§ Your answers must be typed and single-spaced on an answer sheet.
§ You must separate answers for each question with a double space.
§ Your answers must be brief and responsive to the question.
§ Answers should be in your own words (accurate paraphrases).
§ Where the question calls for a list, each item on the list must be on its own line.
§ You must type tables on your answer sheet.
§ You must hand draw charts on an 8.5 x 11 inch sheet of graph paper.
§ Neatly display calculations on an 8.5 x 11 inch sheet of ruled paper.

Text: Stocks

1. When we adhere to a belief because the evidence from a systematic observation of events supports our belief better than it supports any other belief, we are using the method of __________ to establish this belief.

2. Assuming that the premises are true, write the appropriate deductive conclusion for the following argument.
   P₁: “All persons with AIDS test HIV positive.”
   P₂: “Some persons with AIDS are injection drug users.”
   Therefore
   C: ________________________________

   Select the conclusion from the following list:
   • “All injection drug users test HIV positive.”
   • “All persons who test HIV positive are injection drug users.”
   • “Some persons who test HIV positive are injection drug users.”
   • “No injection drug users test HIV positive.”
   • “No one who tests HIV positive are injection drug users.”
   • There is no valid deductive conclusion from these premises.

3. Does the evidence presented in the following inductive argument adequately support the conclusion? Please give the reason for your decision.
   “People who commit so-called ‘non-violent’ property offenses are likely to engage in aggressive violence.
   “In a study of a random sample of 600 inmates incarcerated for ‘non-violent’ property offenses, about 65% of them received disciplinary action for fighting. The inmates in the sample did not differ in a consistent way from the remainder of the population of inmates incarcerated for ‘non-violent’ property offenses with respect to any measured characteristics, including age, gender, racial/ethnic identification, education, and prior record.”

4. Identify the level of measurement:
   Client rating of satisfaction with services provided as
   0= extremely dissatisfied, 1= dissatisfied, 2=marginal dissatisfaction, 3= neither satisfied nor dissatisfied, 4= marginally satisfied, 5= satisfied, 6= extremely satisfied.
5. Identify the level of measurement:
   Sorting six job applicants from least experienced (1) to most experienced (6).

6. Identify the level of measurement:
   Caseload size categories.

<table>
<thead>
<tr>
<th>Number of Cases</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 – 49</td>
<td>1</td>
</tr>
<tr>
<td>35 – 39</td>
<td>3</td>
</tr>
<tr>
<td>30 – 34</td>
<td>5</td>
</tr>
<tr>
<td>20 – 29</td>
<td>5</td>
</tr>
<tr>
<td>0 – 19</td>
<td>1</td>
</tr>
</tbody>
</table>

7. Identify the level of measurement:
   Number of unexcused absent days during the most recent six-week grading period.

8. Present following set of 30 suicide risk scores in an APA-style grouped frequency table. The interval size for each score interval should be \( i = 3 \). The lower boundary (not the true lower limit) for the bottom class interval should be \( Y = 0 \).

   \(
   \{Y|Y = 9, 2, 0, 0, 4, 4, 5, 9, 0, 3, 7, 9, 7, 6, 3, 0, 9, 10, 1, 0, 2, 0, 9, 5, 3, 7, 1\}
   \)

   Consult the Publication manual of the American Psychological Association and Handout 1: Formatting Text in Microsoft Word in the On-Line Course Pack for directions on how to create and format this table.

   You must type the table on your answer sheet.

9. Calculate and list the row percentage frequencies (\( \%f \)) for cells 1, 2, 3, and 4.

   Row Subtotal
<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row X</td>
<td>(Cell 1)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(Cell 2)</td>
<td>3</td>
</tr>
<tr>
<td>Row Y</td>
<td>(Cell 3)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(Cell 4)</td>
<td>8</td>
</tr>
<tr>
<td>Column</td>
<td>(Cell 5)</td>
<td>5</td>
</tr>
<tr>
<td>Subtotal</td>
<td>(Cell 6)</td>
<td>11</td>
</tr>
</tbody>
</table>

   Please show your work and round your answer to one decimal place.

   9.01 Cell 1: \( \text{Row } \%f = \) __________
   9.02 Cell 2: \( \text{Row } \%f = \) __________
   9.03 Cell 3: \( \text{Row } \%f = \) __________
   9.04 Cell 4: \( \text{Row } \%f = \) __________
10. We want to evaluate the effect of a behavior management technique for kindergarten children. There are 75 kindergarten classes in the urban school district in which we are working. We wish to draw a sample of \( n = 5 \) classes. We assign numbers 1 through seventy-five to each of the classes. Using a table of random numbers, we look at the last two digits of the numbers in the table. If the last two digits are greater than 75, we ignore the number. If the numbers are between one and seventy-five, we select the class for participation in the study.

What type of sample have we selected?

- cluster sample
- convenience sample
- post hoc sample
- purposive sample
- quota sample
- snowball sample
- stratified sample
- systematic sample

11. Use the following set of numerals to answer questions 11.01, 11.02, and 11.03.

\( \{Y|Y = 6, 4, 6, 2, 8, 4\} \)

11.01. What is the mean (\( \bar{Y} \)) for this set of numerals?

\[ \bar{Y} = \frac{\sum Y}{n} \]

11.02. What is the median (\( Y_{50} \)) for this set of numerals?

11.03. What is the mode (\( Y_{\text{Mode}} \)) for this set of numerals?

Please show your work and round your answers to whole numerals.

12. The equation that defines the sum of squares for the variable \( Y \) is

\[ SS_Y = \sum y^2 = \sum (y - \bar{Y})^2 \]

The following set of \( n = 7 \) scores has a mean of \( \bar{Y} = 6 \).

\( \{Y|Y = 7, 5, 7, 3, 9, 4, 7\} \)

12.01. Construct an APA-style table with three columns. Label the left column “Score (Y).” Label the center column “Deviation Score (y).” Label the right column “Squared Deviation Score (y^2).” Fill in the scores in the “Score” column, the deviation scores for each score in the “Deviation Score” column and the squared deviation scores for each score in the “Squared Deviation Score” column.

You must type the table on your answer sheet.

The table (without the numerical data filled in) should look like this.

<table>
<thead>
<tr>
<th>Score (Y)</th>
<th>Deviation Score (y)</th>
<th>Squared Deviation Score (y^2)</th>
</tr>
</thead>
</table>

12.02. Use the preceding formula to calculate the sum of squares for this set of scores. Please round your final answer for the sum of squares to no more than one decimal place.

\[ SS_Y = \]
13. The distribution of \( n = 30 \) scores in Table 8.20 has a mean of \( \bar{Y} = 4 \).

<table>
<thead>
<tr>
<th>Score (Y)</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

13.01. Reproduce table 8.20 and add a column showing cumulative frequencies.

13.02. Report the median for this distribution. \( Y_{.50} = \) __________.

13.03. Report the mode(s) for this distribution. \( Y_{\text{Mode}} = \) __________.

Please report the final answers to questions 13.02 and 13.03 to one decimal place and show your work.

14. A normally distributed set of scores has a mean of \( \mu_Y = 36 \) and a standard deviation of \( \sigma_Y = 6 \).

What is the value of a \( z \) score for a raw score of \( Y = 27 \)?

Please show all work on a separate sheet and type your answer on your answer sheet. \( z = \) ______.

If your answer contains a fraction, round it to two decimal places.

15. We randomly selected \( n = 150 \) social work students from four MSW programs. We selected subjects from each of these schools in proportion to the enrollment within each of their MSW programs so that \( n_1 = 48 \) subjects came from the University of Antarctica (UA), \( n_2 = 44 \) subjects came from Antarctica State University (ASU), \( n_3 = 30 \) subjects came from Eastern Antarctica University (EAU), \( n_4 = 28 \) subjects came from Northern Antarctica University (NAU).

We further divided the sampling frame so that we randomly selected equal numbers of (1) students who had not completed the first year courses in their MSW programs and (2) students who had completed the first year courses in their MSW programs.

Between 70\% and 84\% of the students from each school enrolled in the clinical social work concentration. We want to see whether the school attended influenced the proportions of male and female students (Did the distributions of males and females differ among the four schools?).

15.01 The independent variable in this study refers to which of the following.

- (1) clinical social work, (2) other concentration
- course completion status
- (1) female, (2) male
- (1) not yet completed 1\textsuperscript{st} year courses, (2) completed 1\textsuperscript{st} year courses
- program concentration
- school attended
- (1) UA, (2) ASU, (3) EAU, (4) NAU
- student gender
15.02 Levels of the independent variable in this study refers to which of the following.

- (1) clinical social work, (2) other concentration
- course completion status
- (1) female, (2) male
- (1) not yet completed 1st year courses, (2) completed 1st year courses
- program concentration
- school attended
- (1) UA, (2) ASU, (3) EAU, (4) NAU
- student gender

15.03 The dependent variable in this study refers to which of the following.

- (1) clinical social work, (2) other concentration
- course completion status
- (1) female, (2) male
- (1) not yet completed 1st year courses, (2) completed 1st year courses
- program concentration
- school attended
- (1) UA, (2) ASU, (3) EAU, (4) NAU
- student gender

15.04 The dependent measure in this study refers to which of the following.

- (1) clinical social work, (2) other concentration
- course completion status
- (1) female, (2) male
- (1) not yet completed 1st year courses, (2) completed 1st year courses
- program concentration
- school attended
- (1) UA, (2) ASU, (3) EAU, (4) NAU
- student gender

15.05 Identify the level of measurement (Nominal, Ordinal, Interval, or Ratio) for the dependent measure in this study.

16. We randomly selected \( n = 36 \) students from sixth and seventh grade students referred for truancy from the 23 middle schools in the Thatcher independent school district. We selected students so that our sample contained equal numbers of sixth and seventh graders.

Table 5.15 shows the numbers of unexcused absent days for the 36 students in the sample for the six weeks before referral.

Table 5.16 shows the statewide records for sixth and seventh graders’ unexcused absences over the six weeks prior to referral for truancy.

<table>
<thead>
<tr>
<th>Table 5.15: Thatcher District (6th &amp; 7th Grade)</th>
<th>Table 5.16: Statewide (6th &amp; 7th Grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unexcused Absent Days</strong></td>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td>25–36</td>
<td>2</td>
</tr>
<tr>
<td>17–24</td>
<td>9</td>
</tr>
<tr>
<td>13–16</td>
<td>11</td>
</tr>
<tr>
<td>9–12</td>
<td>7</td>
</tr>
<tr>
<td>7–8</td>
<td>4</td>
</tr>
<tr>
<td>5–6</td>
<td>3</td>
</tr>
<tr>
<td>0–4</td>
<td>0</td>
</tr>
</tbody>
</table>

We wish to know whether sixth and seventh graders referred for truancy in the Thatcher independent school district show a meaningful difference in frequency of unexcused absent days from the statewide population of sixth and seventh graders referred for truancy.
16.01. The independent variable in this study refers to which of the following.
- groups compared
- number of unexcused absent days
- referral status
- (1) referred for truancy, (2) not referred for truancy
- (1) sixth graders, (2) seventh graders
- (1) Thatcher district students, (2) students throughout the state
- truancy

16.02. Levels of the independent variable in this study refers to which of the following.
- groups compared
- number of unexcused absent days
- referral status
- (1) referred for truancy, (2) not referred for truancy
- (1) sixth graders, (2) seventh graders
- (1) Thatcher district students, (2) students throughout the state
- truancy

16.03. The dependent variable in this study refers to which of the following.
- groups compared
- number of unexcused absent days
- referral status
- (1) referred for truancy, (2) not referred for truancy
- (1) sixth graders, (2) seventh graders
- (1) Thatcher district students, (2) students throughout the state
- truancy

16.04. The dependent measure in this study refers to which of the following.
- groups compared
- number of unexcused absent days
- referral status
- (1) referred for truancy, (2) not referred for truancy
- (1) sixth graders, (2) seventh graders
- (1) Thatcher district students, (2) students throughout the state
- truancy

16.05. Identify the level of measurement (Nominal, Ordinal, Interval, or Ratio) for the dependent measure in this study.

Text: Rubin & Babbie

17. We want to select a systematic sample from a population a population of 8064 persons. We should use a sampling interval of \( k = \) _____ for a sample size of \( n = 32 \) individuals.