COLLEGE OF SOCIAL SCIENCES, THEOLOGY, HUMANITIES & EDUCATION

NHSW214 RESEARCH METHODS AND STATISTICS IN SOCIAL WORK

END OF FIRST SEMESTER EXAMINATIONS

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DURATION: 3 HOURS

INSTRUCTIONS

1. This paper contains **THREE** sections (A, B and C).
2. Answer **ALL** questions in Section A.
3. Choose **ONE** question each from Sections B and C
4. Start each question on a new page in your booklet.
5. Do not repeat material.

SECTION A [25 Marks]

1. The core ingredients of a dissertation project are:
   a. Introduction; Data collection; Data analysis; Conclusions and recommendations.
   b. Executive summary; Literature review; Data gathered; Conclusions; Bibliography.
   c. Research plan; Research data; Analysis; References.
   d. Introduction; Literature review; Research methods; Results; Discussion; Conclusion.

2. A cross sectional study is carried out to examine whether tertiary level students have more positive coping skills than those at primary level. Which of the following statement is true of this study?
   a. Neither variable is dependent as the researcher cannot manipulate them.
   b. The independent variable is coping and the dependent variable is higher level of education.
   c. The independent variable is coping and the dependent variable is lower level of education.
   c. The independent variable is level of education and the dependent variable is coping skills.

3. We review the relevant literature to know:
   a. What is already known about the topic.
   b. What concepts and theories have been applied to the topic.
   c. Who are the key contributors to the topic.
   d. All of the above.

4. What does ‘sampling cases’ mean?
   a. Sampling using a sampling frame.
   b. Identifying people who are suitable for research.
   c. Literally, the researcher's brief-case.
   d. Sampling people, newspapers, television programmes etc.

5. The difference between the mean of a researcher’s sample and the mean of the population of the sample is known as the:
   a. Confidence interval.
   b. Sampling error.
   c. Standard deviation.
   d. Significance level.

6. Usually confidence intervals are set at what figure?
   a. 90%.
   b. 5%.

c. 95%.
d. 10%.

7. In an experimental design, the dependent variable is:
   a. The one that is not manipulated and in which any changes are observed.
   b. The one that is manipulated in order to observe any effects on the other.
   c. A measure of the extent to which personal values affect research.
   d. An ambiguous concept whose meaning depends on how it is defined.

8. Complete this sentence. Ideally, if a study concluded that jealousy caused violence, it would have to:
   a. Measure jealousy and violence, over a period of time, on at least two intervals.
   b. Randomly assign participants to groups of high and low jealousy and compare their violence.
   c. Assign participants to groups of high and low violence and compare their jealousy.
   d. Show a correlation between jealousy and violent behaviour in participants.

9. Panel and cohort designs differ, in that:
   a. Cohort studies involve quantitative research, whereas panel studies are qualitative.
   b. A panel study does not need rules to handle new entrants to households.
   c. Only a cohort study will suffer from sample attrition.
   d. A panel study can distinguish between age effects and cohort effects, but a cohort design can only detect ageing effects.

10. A measurement scale that labels and categorizes observations, but does not make any quantitative distinctions between observations is called a(n):
   a. Ordinal.
   b. Nominal.
   c. Interval.
   d. Ratio.

11. The importance of measurement in quantitative research is that:
   a. It allows us to delineate fine differences between people or cases.
   b. It provides a consistent device or yardstick.
   c. It allows for precise estimates of the degree of relationship between concepts.
   d. All of the above.

12. A simple random sample is one in which:
   a. From a random starting point, every nth unit from the sampling frame is selected.
   b. A non-probability strategy is used, making the results difficult to generalize.

c. The researcher has a certain quota of respondents to fill for various social groups.

d. Every unit of the population has an equal chance of being selected.

13. Which of the following is an example of random sampling techniques?

a. Taking the name of every person in a telephone book.

b. Generating a list of numbers by picking numbers out of a hat and matching these numbers to names in the telephone book.

c. Taking every tenth or twentieth name from a list of everybody in the telephone book.

d. Selecting names from particular residential areas only.

14. The standard error is a statistical measure of:

a. The normal distribution of scores around the sample mean.

b. The extent to which a sample mean is likely to differ from the population mean.

c. The clustering of scores at each end of a survey scale.

d. The degree to which a sample has been accurately stratified.

15. What effect does increasing the sample size have upon the sampling error?

a. It reduces the sampling error.

b. It increases the sampling error.

c. It has no effect on the sampling error.

d. None of the above.

16. Which of the following is not a characteristic of quota sampling?

a. The researcher chooses who to approach and so might bias the sample.

b. Those who are available to be surveyed in public places are unlikely to constitute a representative sample.

c. The random selection of units makes it possible to calculate the standard error.

d. It is a relatively fast and cheap way of finding out about public opinions.

17. Quantitative research has been criticised because:

a. The measurement process suggests a spurious and artificial sense of accuracy.

b. The reliance on instruments and procedures makes it high in ecological validity.

c. It underestimates the similarities between objects in the natural and social worlds.

d. All of the above.

18. What is an outlier?

a. A type of variable that cannot be quantified.

b. A score that is left out of the analysis because of missing data.

c. An extreme value at either end of a distribution.

d. A number that occurs outside the distribution.

19. What is triangulation?
    a. Using three quantitative or three qualitative methods in a project.
    b. Cross-checking the results found by different research strategies.
    c. Allowing theoretical concepts to emerge from the data.
    d. Drawing a triangular diagram to represent the relations between three concepts.

20. How might qualitative research help with the analysis of quantitative data?
    a. By identifying a sample of respondents for a follow-up study.
    b. By providing hard, statistical data about them.
    c. By making the research more value-laden and subjective.
    d. By helping to explain the relationship between two variables.

21. The major advantage of interviews is _____.
    a. They are not time consuming.
    b. The interviewer can guess the age of the respondent.
    c. The researcher can ask more detailed questions.
    d. The response rate is high.

22. What method can be used to get the research information needed?
    a. By talking to people, either in person or on the phone.
    b. By using the post and getting people to fill in questionnaires and send them back to you.
    c. By directly observing the subject(s) under study.
    d. All of the above.

23. _____ research methods emphasise objective measurement, _____ research methods emphasise depth of understanding and deeper meaning.
    a. Survey, experimental
    b. Qualitative, quantitative
    c. Quantitative, qualitative
    d. Case study, subjective

24. Consider this data: 18, 38, 22, 12, 17. What is the mean?
    a. 18.
    b. 21.4.
    c. 20.8.
    d. None of the above.

25. What is the range of the following observation: 23, 8, 41, 13, 17, 22?
    a. 33
    b. 41
    c. 8

d. 22

SECTION B (Answer **ONE** question from this Section)

1. a. A set of scores has been organized into the following stem and leaf display. For this set of scores:

3	8
4	60
5	734
6	81469
7	2184
8	247

i. How many scores are in the 60s? [2]

ii. Identify the individual scores in the 70s. [3]

b. For the following set of scores, find the value of each expression:

X
4
6
1
3
2

i. $\sum X$

ii. $(\sum X)^2$

iii. $\sum X^2$

iv. $\sum (X + 4)$

v. $\sum (X + 4)^2$. [20]

2. The set of data below shows the weight in kilograms of female students in the NHSW214 class:

Class	**Frequency**
40 - 44	2
45 - 49	11
50 - 54	13
55 - 59	19
60 - 64	15
65 - 69	10
70 - 74	9
75 - 79	1

a. Calculate the following:

i. Cumulative frequencies [3]

ii. Cumulative percentages [3]

iii. Mean of grouped data [7]

b. Construct the following:

i. Histogram [8]

ii. Cumulative frequency polygon [4]

SECTION C (Answer **ONE (1)** question from this Section)

1. Determine the utility of any 3 qualitative data collection methods in resolving the challenges faces by a client group of your choice. **[25 Marks]**

2. With reference to relevant scenarios, demonstrate the probability sampling methods used in social work research. **[25 Marks]**

END OF PAPER

FORMULAE

1. Mean $\bar{x} = \frac{\sum x}{n}$

2. Standard deviation $s = \sqrt{\frac{\sum (xi - \bar{x})^2}{n-1}}$

3. Standard deviation for grouped data

$$s = \sqrt{\frac{\sum (x - \bar{x})^2 f}{n-1}} \quad \text{or} \quad s^2 = \frac{\sum fx^2 - \frac{(\sum fx)^2}{n}}{n-1} \quad s = \sqrt{s^2}$$

4. Mean for grouped data $\bar{x} = \frac{\sum fx}{\sum f} = \frac{\sum fx}{n}$

6. Mode for grouped data $L + \left(\frac{fm - fm-1}{(fm - fm-1) + (fm - fm+1)} \right) w$

7. Median for grouped data $L + \left(\frac{n/2 - B}{G} \right) w$

9. Variance $S^2 = \frac{\sum (xi - \bar{x})^2}{n-1}$

10. Sample size calculation

Unlimited population: $n = \frac{z^2 \times \hat{p}(1-\hat{p})}{\varepsilon^2}$

Finite population: $n' = \frac{n}{1 + \frac{z^2 \times \hat{p}(1-\hat{p})}{\varepsilon^2 N}}$