

FEDERATION METHODS AND STATISTICS EXAM

Federated Graduate Sociology Program of:
Texas Woman's University
University of North Texas

Fall, 2000

GENERAL INSTRUCTIONS FOR TAKING EXAM

Before you begin the exam, it is advisable that you read through all the questions. Plan your time wisely. You have until 5:00 pm to complete the exam.

Please **WRITE ONLY ON EVERY OTHER LINE on ONE SIDE** of the paper. Please answer each question thoroughly. Answer in complete sentences. Write as neatly as possible--you will not get credit for what can not be read!

DO NOT PUT YOUR NAME ON THE PAPER

PUT ONLY YOUR ASSIGNED NUMBER_____

Part 1: FEDERATION METHODS

(Fall 2000)

(Remember: WRITE ONLY ON EVERY OTHER LINE on ONE SIDE OF THE PAPER)

A. Choose one of the following

1. For three of the following select and discuss an appropriate sampling procedure. What problems would you expect to encounter (discuss each)?
 - a. college basketball coaches
 - b. voters of Bexar County
 - c. interview transcripts
 - d. high-school dropouts
 - e. welfare recipients

OR

2. You have been asked to design a scale to measure _____ (choose your concept). Outline the steps you would take in developing your scale. What major decisions would you have to make in designing your scale? Address yourself to such problems as: (a) sampling of item content, (b) selecting responses to items, (c) selecting a system of scoring items, and (d) testing for reliability and validity of items.

B: For one of the following, develop two separate research designs--one qualitative and one quantitative. Describe each research design in detail.

1. Design a study to determine the level of job satisfaction among employees in a manufacturing setting.
2. Design a study to determine the tendencies of a labor union toward oligarchy or democracy.
3. A modern art museum asks you to evaluate the popularity of its various sections and the characteristics of persons attracted to each section in order to begin a fund raising campaign.
4. Design a study to determine the effects of aging among a population including men and women. Choose three areas of concern, such as attitudes, social participation, health, intergenerational support, etc.

Part II: FEDERATION STATISTICS

(Fall 2000)

- A. Define and **relate** each of the following to one another as they apply to conducting a test of statistical significance.
1. research and null hypothesis
 2. Type I and Type II error
 3. one-tail and two-tail test
 4. level of significance and critical region
 5. sampling distribution and standard error
 6. simple random sample
- B. For six of the following pairs discuss what factor(s) must be taken into consideration in choosing between these two statistical techniques for use in the analysis of data
- a. t and Z test
 - b. Chi-square and lambda
 - c. PRE and non-PRE measures of association
 - d. Pearson's r and Spearman's rho
 - e. Pearson's r and correlation ratio (eta)
 - f. Mean and standard deviation
 - g. R and partial r
 - h. Discriminant analysis and loglinear
 - i. Linear correlation and linear regression
- C. Below are three tables. Select one of these and answer the following question:
Identify all the statistical procedures reported. If you were to review an article containing this table, what comments would you make about the appropriateness of the statistical techniques used?

Table 1: Effects of Religious Diversity, Percent Catholic, and Population Growth on Rate of Church Adherents within Urban Communities (Urban Communities, U.S., 1906)

	Equation 1			Equation 2		
	<i>Beta</i>	<i>b</i>	<i>p</i>	<i>Beta</i>	<i>b</i>	<i>p</i>
*Religious Diversity	.84	.76	<.001	.79	.72	<.001
Percent Catholic	.40	1.23	<.001	.35	1.19	<.001
Population Growth				-.22	-.12	-.042
R ²		.60			.64	

*Religious diversity is measured by an index based on the number of different denominations and size of each denomination.

Table 2: Relationship between Mobility Orientation of Child and Mobility Orientation of Parents

Child's Own Mobility Orientation	<i>Mobility Orientation of Parents</i>		
	Low	Medium	High
High	29	55	68
Medium	59	53	48
Low	71	37	138
Total	159	145	146

Somers' d=.24; .05>p<.10