

## **FEDERATION METHODS AND STATISTICS EXAM**

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

Spring 2002

January 8, 2002

### 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 or DOUBLE SPACE. WRITE OR PRINT ON ONLY 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 cannot be read!

DO NOT PUT YOUR NAME ON THE PAPER

PUT ONLY YOUR ASSIGNED NUMBER\_\_\_\_\_

**Part 1: FEDERATION METHODS****(Spring 2002)**

(Remember: WRITE ONLY ON EVERY OTHER LINE or DOUBLE SPACE and PRINT OR WRITE on ONE SIDE OF THE PAPER)

- A. For three of the following populations select and discuss an appropriate sampling procedure, including type of sample, sampling frame, sampling units. You must use at last three different random sampling procedures.
  - a. High school dropouts
  - b. Coaches of college football
  - c. Ecstasy users (illegal drug)
  - d. The elderly by race
  - e. Households in the U.S.
  
- B. Define and provide an example of each of the following:
  - a. Conceptual and operational definition
  - b. Criterion validity and face validity
  - c. Guttman scaling
  - d. Panel study
  - e. Probability and nonprobability sampling
  
- C. List and describe the steps in a qualitative research study. Then select a specific research question of interest to you to illustrate these steps. Be as specific as possible in demonstrating your knowledge of the qualitative research process.

**Part II: FEDERATION STATISTICS****(Spring 2002)**

- A. For three of the following five relationships, select an appropriate statistical test and measure of association
1. Race and internet use
  2. Salary and job satisfaction (low, medium, high)
  3. Sex differences in labor force participation rates of male and female university students
  4. Level of professionalization and level of prejudice
  5. Income and frequency of sexual intercourse
- B. Define and relate each of the following terms. To receive full credit for this question it must be shown how all of the terms relate to each other. Give an example that uses each of the following terms.
- a. Research and null hypothesis
  - b. Cluster sampling
  - c. Type 1 and Type 2 error
  - d. Level of measurement
  - e. Level of significance
- C. Answer question 1. Then answer either question 2 or question 3.
1. Answer the following questions about Table 1 below.
- a. What assumptions must be made to use regression analysis in the analysis of data?
  - b. What does each of the following tell us?
    1. Unstandardized regression coefficients (b)
    2. Standardized regression coefficients (Beta)
    3. level of significance (p)
    4. Coefficient of determination ( $R^2$ )
  - c. Write a brief essay substantively interpreting the table

**Table 1: Factors Affecting Attitudes Toward Prayer**

Factors	b	Beta
Rural background	-.262**	-.252**
Education	.007	.004
Age	.019*	.102*
Religious traditionalism	.306***	.305***

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$R^2 = .17$

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\* p<.05    \*\* p<.01    \*\*\* p<.001

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2. Write a brief essay substantively interpreting Table 2. Identify all of the statistical procedures used and interpret them, including the percentages.

**Table 2: Variables Affecting Support for Stem Cell Research**

<i>Variable</i>	<i>% in Favor</i>	<i><math>\chi^2</math></i>	<i>Significance of <math>\chi^2</math></i>	<i>Phi or V</i>	<i>Significance of Phi or V</i>
<b>Sex</b>		30.4	.0001	.11	.0001
Male	68.8				
Female	79.4				
<b>Race</b>		109.0	.0001	.27	.0001
White	70.3				
Black	48.2				
Other	63.4				
<b>Family Income</b>		22.0	.0001	.11	.0001
< \$25,000	67.7				
\$25,000-89,999	72.4				
\$90,000 or above	78.5				
<b>Region</b>		7.2	.065	.05	.085
Northeast	68.7				
Midwest	63.8				
South	73.2				
West	74.9				

3. Write a brief essay substantively interpreting Table 3.

**Table 3: Scores of Ten Subjects on Participation in Meditation and Self Reported Depression**

<b>Subjects</b>	<b>Participation in Meditation</b>	<b>Depression</b>
	<b>X</b>	<b>Y</b>
Michael	34	16
Maria	16	18
Jennifer	15	12
Mary	10	15
Patricia	9	6
Connie	8	10
Rolf	7	7
Polina	5	7
Kathie	2	3
Sasha	1	2

$r_s = .43$   $t = 5.47$   $.005 < p < .05$