

**UNIVERSITY OF SWAZILAND**  
**FACULTY OF SOCIAL SCIENCE**  
**DEPARTMENT OF SOCIOLOGY**  
**FINAL EXAMINATION PAPER, MAY 2005**

**TITLE OF PAPER** : **RESEARCH METHODS**

**COURSE CODE** : **SOC 201**

**TIME ALLOWED** : **THREE (3) HOURS**

**INSTRUCTIONS** :

- 1. ANSWER ANY FOUR QUESTIONS.**
- 2. ALL QUESTIONS CARRY EQUAL MARKS.**

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GIVEN BY THE INVIGILATOR.**

**SECTION A****QUESTION 1**

Suppose you would like to do a survey of students on campus to find out how much on average they spend in the library per week. You obtain from the student registry a list of all students currently enrolled so as to draw your sample.

- (a) What is your sampling frame?
- (b) Explain how you would draw a simple random sample for your study.
- (c) How would you select a stratified random sample?
- (d) Which type of sampling design is most appropriate for this research? Explain.

**SECTION B****QUESTION 2**

Research Design is concerned with turning research questions into projects. Discuss.

**QUESTION 3**

Discuss the various stages involved in carrying out content analysis. Use examples to substantiate.

**QUESTION 4**

Discuss the advantages and disadvantages of using focus-group interviews for collecting data.

**QUESTION 5**

Using examples, explain why field researchers generally use non-random selection of settings and subjects.

**QUESTION 6**

Write short notes on any four of the following:

- (a) Triangulation
- (b) Snowball sampling
- (c) Quasi-experimental designs
- (d) Longitudinal studies
- (e) Literature review
- (f) Open-ended questions

**QUESTION 7**

In a trial of a new drug against a standard drug for treatment of depression, the new drug caused some improvements in 56% of the 73 patients and the standard drug some improvement in 41% of the 70 patients. The results are assessed in five categories as shown below:

**TYPE OF TREATMENT**

<u>Effect</u>	<u>New Treatment</u>	<u>Standard Treatment</u>
Much improved	18	12
Improved	23	17
Unchanged	15	19
Worse	9	13
Much worse	8	9

Calculate the Chi-square for the above distribution and test the hypothesis if there is a significant difference between the two drugs at 0.05 level of significance. Show the steps involved in hypothesis testing.

**QUESTION 8**

Explain the meaning of positive, negative and perfect correlation between two variables. In each case draw sketches of the scatter diagram.

The following are paired measurements:

X	5	8	9	7	6	1
Y	3	7	8	8	5	9

Calculate the correlation between X and Y and interpret the result.

Table F. Critical Values of Chi Square

df	Level of significance for a directional test					
	.10	.05	.025	.01	.005	.0005
	Level of significance for a non-directional test					
	.20	.10	.05	.02	.01	.001
1	1.64	2.71	3.84	5.41	6.64	10.83
2	3.22	4.60	5.99	7.82	9.21	13.82
3	4.64	6.25	7.82	9.84	11.34	16.27
4	5.99	7.78	9.49	11.67	13.28	18.46
5	7.29	9.24	11.07	13.39	15.09	20.52
6	8.56	10.64	12.59	15.03	16.81	22.46
7	9.80	12.02	14.07	16.62	18.48	24.32
8	11.03	13.36	15.51	18.17	20.09	26.12
9	12.24	14.68	16.92	19.68	21.67	27.88
10	13.44	15.99	18.31	21.16	23.21	29.59
11	14.63	17.28	19.68	22.62	24.72	31.26
12	15.81	18.55	21.03	24.05	26.22	32.91
13	16.98	19.81	22.36	25.47	27.69	34.53
14	18.15	21.06	23.68	26.87	29.14	36.12
15	19.31	22.31	25.00	28.26	30.58	37.70
16	20.46	23.54	26.30	29.63	32.00	39.29
17	21.62	24.77	27.59	31.00	33.41	40.75
18	22.76	25.99	28.87	32.35	34.80	42.31
19	23.90	27.20	30.14	33.69	36.19	43.82
20	25.04	28.41	31.41	35.02	37.57	45.32
21	26.17	29.62	32.67	36.34	38.93	46.80
22	27.30	30.81	33.92	37.66	40.29	48.27
23	28.43	32.01	35.17	38.97	41.64	49.73
24	29.55	33.20	36.42	40.27	42.98	51.18
25	30.68	34.38	37.65	41.57	44.31	52.62
26	31.80	35.56	38.88	42.86	45.64	54.05
27	32.91	36.74	40.11	44.14	46.96	55.48
28	34.03	37.92	41.34	45.42	48.28	56.89
29	35.14	39.09	42.69	46.69	49.59	58.30
30	36.25	40.26	43.77	47.96	50.89	59.70
32	38.47	42.59	46.19	50.49	53.49	62.49
34	40.68	44.90	48.60	53.00	56.06	65.25
36	42.88	47.21	51.00	55.49	58.62	67.99
38	45.08	49.51	53.38	57.97	61.16	70.70
40	47.27	51.81	55.76	60.44	63.69	73.40
44	51.64	56.37	60.48	65.34	68.71	78.75
48	55.99	60.91	65.17	70.20	73.68	84.04
52	60.33	65.42	69.83	75.02	78.62	89.27
56	64.66	69.92	74.47	79.82	83.51	94.46
60	68.97	74.40	79.08	84.58	88.38	99.61

The table lists the critical values of chi square for the degrees of freedom shown at the left for tests corresponding to those significance levels which head each column. If the observed value of  $\chi_{obs}^2$  is greater than or equal to the tabled value, reject  $H_0$ . All chi squares are positive.

Source: Table F is taken from Table IV of Fisher and Yates, *Statistical Tables for Biological, Agricultural and Medical Research*, published by Longman Group Ltd., London (previously published by Oliver and Boyd, Ltd., Edinburgh), and by permission of the authors and publishers.

$$\chi^2 = \sum \frac{(O-E)^2}{E} \quad r_{ho} = 1 - \frac{6 \sum D^2}{N(N^2-1)}$$

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$