

Social Studies 201

Fall 2004

First Midterm Examination

9:30-10:20, October 6, 2004

Answer any three (3) of the five questions. Each question has equal value.

1. “Regina near average” was the headline for an article in the *Leader-Post*, September 30, 2004, p. F4. The article discussed Regina’s use of land, water and other resources in the context of what is termed “ecological footprints.” The writer noted “Regina’s energy use falls in the middle of a group of cities.” The data in Table 1, for the eight most westerly large cities in Canada, form the basis for the comments in the article.

- a. Using the data in Table 1, compute the median, mean, and range for each of the variables commuting distance and energy use.
- b. Explain which measure of centrality (mode, median, mean) appears to be used in the headline “Regina near average” and the above quote concerning energy use.

2. Number of children. Table 2 gives percentage distributions of the number of children of Saskatchewan respondents, classified by age group of respondent. These distributions come from the Saskatchewan respondents in the General Social Survey, 2001. For respondents in each of the two age groups, obtain the mode, median, and interquartile range of the number of children. In words, briefly compare the two distributions.

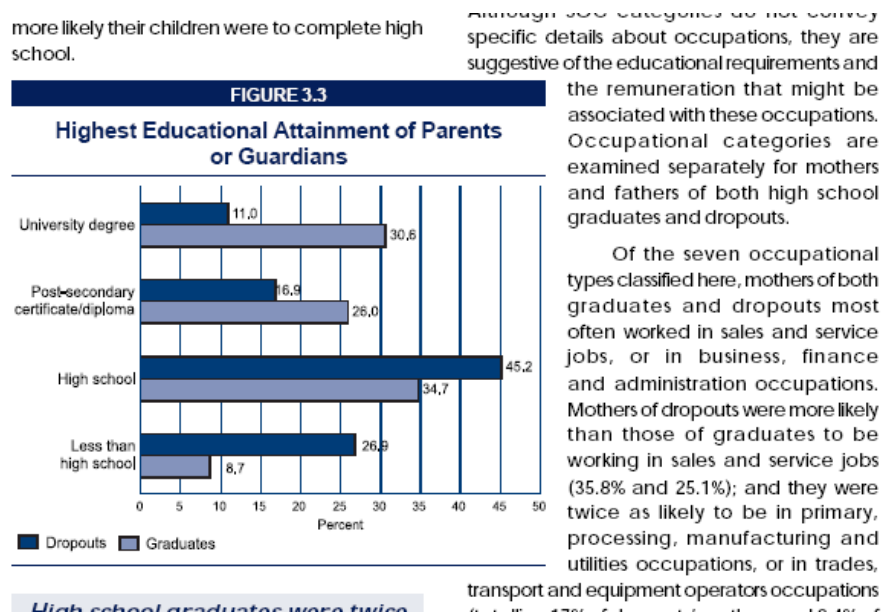
3. Incomes by birthplace of father. Distributions of household income of respondents, classified by birthplace of the respondent’s father, are given in Table 3. These distributions come from the Saskatchewan respondents in the General Social Survey, 2001. Use the data in Table 3 to obtain the mean income for each age group. Also explain which category of income contains the median and mode of income.

4. Alcohol consumption by income. The distributions of alcohol consumption by income for a sample of Saskatchewan respondents are given in Table 4. Using these data

- a. Compute the mean alcohol consumption for the respondents in each of the two income groups.
- b. For each income group, which category of alcohol consumption contains the sixtieth percentile?
- c. In a sentence or two, compare the two distributions of alcohol consumption.

5. Education of parents of high school graduates and dropouts. Figure 3.3 comes from the publication *At a Crossroads: First Results for the 18 to 20-Year-Old Cohort of the Youth in Transition Survey* by Jeffrey W. Bowlby and Kathryn McMullen, Human Resources Development Canada and Statistics Canada, Ottawa, 2002. This publication examines the issue of high school dropouts. Using Figure 3.3, answer the following.

- What is the modal education level of parents?
- What is the mean educational level for parents of each of dropouts and graduates, assuming “less than high school” represents 10 years of schooling, “high school” represents 12 years of schooling, “post-secondary certificate/diploma” represents 14 years of schooling, and “university degree” represents 16 years of schooling?
- In a few words, compare the two distributions.



6. Types of variables. Explain what is the highest level of scale each of the following variables has (nominal, ordinal, interval, or ratio). Also explain whether each is continuous or discrete.

- Commuting distance (Table 1).
- Birthplace of father (Table 3).
- Educational attainment of parents or guardian (Figure 3.3).
- Alcoholic drinks consumed per week (Table 4).

Table 1. Municipal ecological footprints – commuting and energy use

Location	Median commuting distance (km)	Energy use (global hectares)
Vancouver	7.6	4.21
Calgary	7.7	6.03
Edmonton	7.6	5.85
Regina	4.5	4.18
Saskatoon	4.8	4.11
Winnipeg	6.0	3.73
Windsor	8.6	4.09
London	5.4	3.95

Source: Federation of Canadian Municipalities, *Ecological Footprints of Canadian Municipalities and Regions*, September 2004, Table 2. From <http://www.fcm.ca/english/communications/eco.pdf>

Table 2. Percentage of Saskatchewan respondents with each number of children, respondents aged 45-54 and 65-74

Number of children	Percentage of respondents of age	
	45-54	65-74
0	16.7	13.5
1	7.1	7.5
2	41.8	23.4
3	21.2	21.8
4	7.6	10.5
5	5.1	10.5
6	0.5	8.3
7	0.0	3.0
8	0.0	1.5
Total	100.0	100.0
Sample size	198	133

Source: Adapted from Statistics Canada. General Social Survey of Canada, 2001. Cycle 15: Family History (Main File) [machine readable data file]. 3rd Edition. Ottawa, ON: Statistics Canada. 7/2/2003.

Table 3. Number of Saskatchewan respondents, classified by household income and whether respondent's father born in Canada or outside Canada

Household income in thousands of dollars	Birthplace of respondent's father	
	Canada	Outside Canada
0-20	86	60
20-40	162	58
40-60	149	51
60-80	104	18
80-100	62	15
100 plus	71	20
Total	634	212

Source: Adapted from Statistics Canada. General Social Survey of Canada, 2001. Cycle 15: Family History (Main File) [machine readable data file]. 3rd Edition. Ottawa, ON: Statistics Canada. 7/2/2003.

Table 4. Frequency distributions of Saskatchewan respondents, classified by number of alcoholic drinks consumed per week and by income

Number of alcoholic drinks consumed per week	No. of respondents with income of:	
	<\$20,000	\$20,000 plus
None	178	91
1-5	76	77
6-10	28	28
11-15	12	21
16-48	8	18
Total	302	235

Source: Adapted from Statistics Canada. General Social Survey of Canada (GSS), 1991 - Cycle 6: health [machine readable data file]. Ottawa, ON: Statistics Canada. 1992.