

Social Studies 201 – Fall 2006

First Midterm Examination

10:30 – 11:20, October 13, 2006

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

1. Homicides. From the data in Table 1, obtain the mean, standard deviation, and range of the annual number of homicides for each of the two provinces, Nova Scotia and Saskatchewan. From these statistics and the data in Table 1, write a short note comparing the annual number of homicides for the two provinces.

2. Teaching: A job that comes with thrills and chills. The data in Table 2 come from an article on stress levels faced by teachers. In the table, the stress level is measured on a six-point scale and stress levels are reported for teachers and for other occupations. Obtain the mode, median, and interquartile range for the stress level for each of the two groups. Write a short note comparing the distribution of stress levels for the two groups.

3. Marriage intentions of mature singles.

- a. From Table 3, obtain the mode and mean age for each of the two groups of mature Saskatchewan singles – those who say they will not marry and those who say they will marry.
- b. From an article on marriage intentions of mature singles for all of Canada, it is reported that as a whole, the *will-marry* group are younger than the *won't-marry* group. Further, the article states “Just over one-half of mature singles who expect to marry are 35 years or older, with an average age of about 36. In contrast, 83% of *won't-marries* are 35 or older, with an average age of 42.” In a sentence or two, compare the Saskatchewan results in a. with those for all of Canada from the article.

4. Types of variables and summary statistics.

- a. For each of the following variables, explain what is the highest level of measurement (nominal, ordinal, interval, or ratio) and whether the variable is discrete or continuous.
 - i. Annual number of homicides – Table 1
 - ii. Level of stress – Table 2
- b. The following two paragraphs suggest various statistical summary measures of centrality, position, or variation. Explain which of the measures used in this class are implied by statements in the quote.

Between 1986 and 2003, earnings among an average two-parent family with a husband between the age of 35 and 54, who were in the top 20 per cent of the earnings scale, jumped from \$123,000 to \$170,000. In 1986, this family contributed an average of \$8,000 to registered retirement savings plans (RRSPs) and employer-sponsored registered pension plans (RPPs). By 2003, that had climbed to \$11,300.

Earnings among their age counterparts in the bottom one-fifth of earners stagnated at around \$25,000 while the amount they contributed to their retirement averaged \$1,200 in 2003, unchanged from 1996.

Source: Roma Luciw, “Pension gap widens with income,” *The Globe and Mail*, Sept. 27, 2006, p. B7.

5. Political engagement of young adults. (Note: non-traditional political activities are defined as activities other than voting, for example searching for information on political issues, boycotting products, engaging in demonstrations, signing a petition, etc.).

- a. Use the data in Figure 1 to obtain the mode, median, and mean number of non-traditional political activities. Using these measures and the diagram, write a short description of the distribution of these activities.
- b. Explain whether “Number of non-traditional political activities” is continuous or discrete and what type of scale it has.

6. Spousal assault. The data in Figure 2 comes from Karen Rodger, “Wife assault in Canada,” *Canadian Social Trends*, Autumn 1994.

- a. Use the data in Figure 2 to obtain the category that contains the mode, median, and fortieth percentile for each of the two groups (abused by current spouse and abused by previous spouse).
- b. “While the diagram in Figure 2 is a bar chart, it is not a proper histogram.” Explain the rationale for this statement.

Table 1. Annual number of homicides, 1998-2004, Nova Scotia and Saskatchewan

Year	Province	
	Nova Scotia	Saskatchewan
1998	5	32
1999	9	13
2000	10	26
2001	8	27
2002	9	27
2003	8	40
2004	7	38

Source: Adapted from Mia Dauvergne, "Homicide in Canada, 2004," *Juristat*, Vol. 25, no. 6, Statistics Canada – Catalogue no. 85-002-XPE, Table 1, p. 25.

Table 2. Stress levels for teachers and for others

Level of stress – number of times felt stress	Percentage of:	
	Teachers	For the rest of us
Never (1)	1%	5%
Once a year (2)	3%	10%
A few times a year (3)	14%	19%
Once a month (4)	23%	29%
A few times a week (5)	46%	30%
All the time (6)	13%	7%
Total	100%	100%

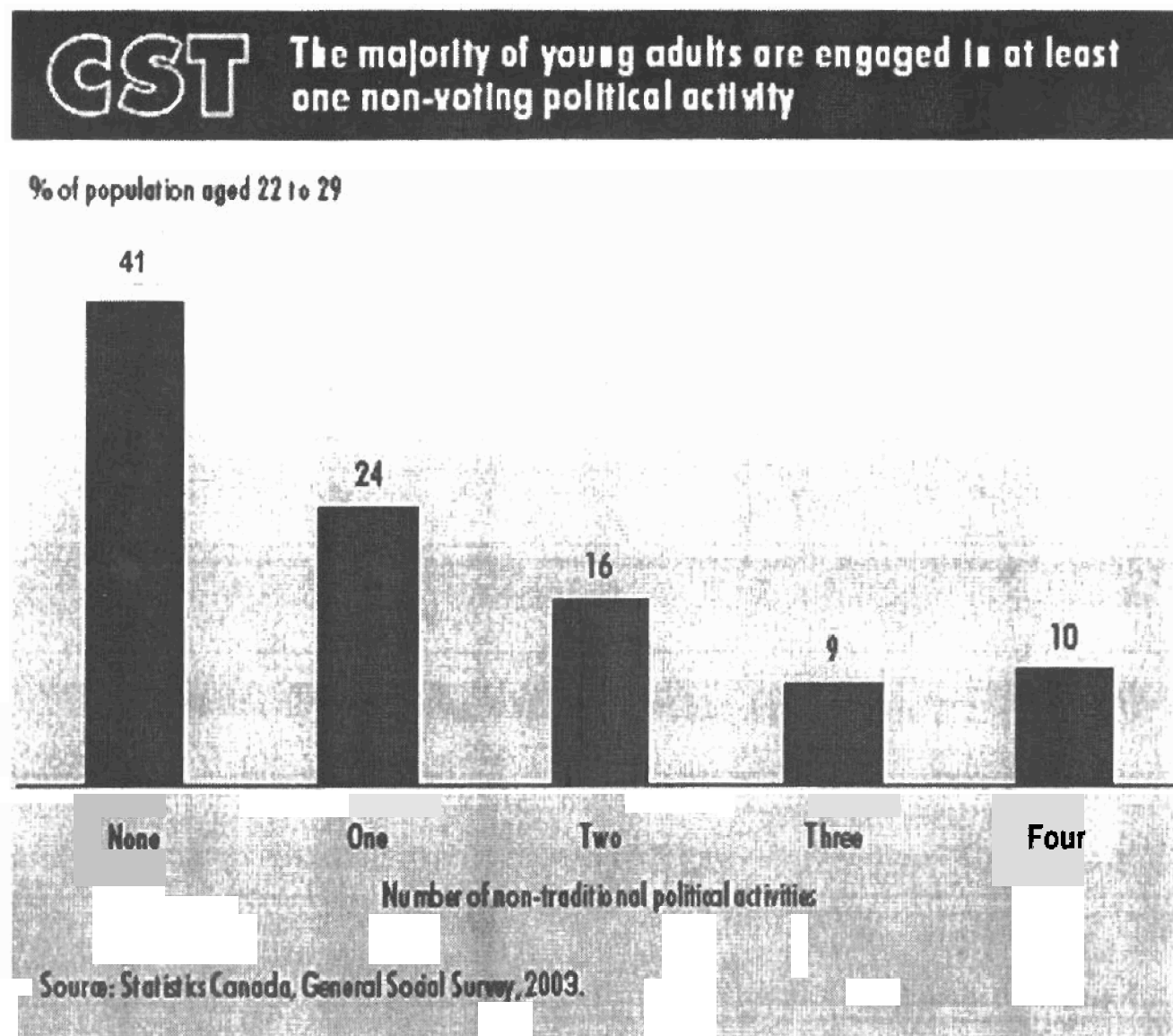
Source: Virginia Galt, "Teaching: A job that comes with thrills and chills," *The Globe and Mail*, September 16, 2006, p. B11.

Table 3. Frequency distribution of ages of mature Saskatchewan singles, those who say they won't marry and those who say they will marry

Age	Frequency of those who say they:	
	Won't marry	Will marry
30-34	9	24
35-39	16	15
40-44	14	14
45-49	12	12
50-54	9	4
Total	60	69

Source: Adapted from Susan Crompton, "Always the bridesmaid: People who don't expect to marry," *Canadian Social Trends*, Summer 2005, Statistics Canada – Catalogue No. 11-008, p. 4 and Statistics Canada. General Social Survey of Canada (GSS), 2001. Cycle 15: Family History (main file) [machine readable data file]. 6th Edition. Ottawa, ON: Statistics Canada. 7/28/2005.

Figure 1. Percentage distribution of number of non-traditional political activities engaged in by young adults aged 22-29, Canada, 2003



Source: Anne Milan, "Willing to participate: Political engagement of young adults," *Canadian Social Trends*, Winter 2005, Statistics Canada – Catalogue No. 11-008, p. 4.

Figure 2: Percentage distribution of number of assaults, women abused by current or former spouse

