Social Studies 201 – Fall 2006

Second Midterm Examination

10:30 – 11:20, November 17, 2006

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

1. Support for the war in Afghanistan. An Ipsos Reid poll, conducted across Canada between October 31 and November 2, 2006, declared "Support for War in Afghanistan Plummets," with 54% of respondents opposed to ongoing Canadian operations. The data in Table 1 provide the frequency distributions from Alberta and Saskatchewan/Manitoba respondents to the question, "Do you strongly support, somewhat support, somewhat oppose, or strongly oppose, the use of Canadian troops for security and combat efforts against the Taliban and Al Qaeda in Afghanistan?"

Table 1. Frequency distributions of views on use of Canadian troops in Afghanistan, Alberta and Saskatchewan/Manitoba respondents, November 2006

Response	Frequency of responses in	
	Alberta	Saskatchewan/Manitoba
Strongly support (4)	23	6
Weakly support (3)	28	19
Weakly oppose (2)	4	10
Strongly oppose (1)	13	14
Total	68	49

Source: Ipsos News Centre, November 5, 2006

a. Using the 1-4 scale for response, obtain the standard deviation of response for each of the two regions.

b. If an individual is randomly selected from Table 1, what is the probability that the individually strongly supports the use of Canadian troops in Afghanistan, given that the individual is (i) a resident of Alberta; (ii) a resident of Saskatchewan/Manitoba?

2. Independence and dependence. The following are quotes from "Parents with adult children living at home." *Canadian Social Trends,* Spring 2006, an article about families with children over age 20 who are living at home.

> Parents who resided in the largest census metropolitan areas were more likely to have an adult child at home: 41% of parents in Vancouver…[and] only 17% of parents living in rural areas or small towns shared their house with at least one adult child.

> Some authors have argued that parents in higher socio-economic positions may have a greater tendency to expect their children to be independent earlier than those with less education and income….However, the analysis…does not show support for these interpretations. Parents with a higher level of education were neither more not less likely than less well-educated parents to live with their adult children. Nor were parents with high personal income any less likely than those with lower personal income to provide accommodation for their children.

Restate as much of the above as possible in the language of independence and dependence. That is, identify the events and state which events are independent of each other and which events are dependent.

3. Distribution of hours of work

a. Suppose that weekly hours of work at jobs are normally distributed with a mean of 40.0 hours and a standard deviation 11.5 hours. What are the following:

   i. The proportion of workers who work more than 60 hours per week?

  ii. The percentage of workers who work between 20 and 30 hours per week?

 iii. The percentage of workers who work less than 20 hours per week?

 iv. The twelfth percentile of hours worked per week?

b. Using the values from a. and the diagram and table below, do you consider hours of work to be normally distributed? Explain.
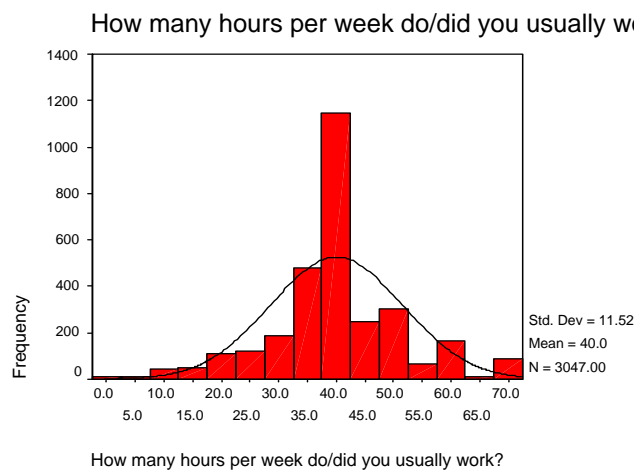

How many hours per week do/did you usually work?

Std. Dev = 11.52
Mean = 40.0
N = 3047.00

How many hours per week do/did you usually work?

Table 2. Percentage distribution of hours worked at jobs

Hours of work per week	Percentage of workers
0-20	4.1
20-30	7.9
30-40	41.1
40-50	27.3
50-60	10.8
60 plus	8.8
Total	100.0

Source: From Equality Security Community Survey, 2001, http://www.isr.yorku.ca/download/ESC.html

Note: Questions 4 and 5 can be answered separately but the following description applies to both questions. In "Taking Charge: Perceptions of control over life chances," *Canadian Social Trends*, Summer 2006, Anne Milan analyzes perceptions of personal control among Canadian adults. In conducting this analysis, she uses a "mastery scale" that ranges in value from 0 to 28. A low score indicates that an individual does not believe their life is under control, with higher scores indicating a greater sense of mastery or personal control. Milan argues that "higher education [is] key to perceived control" and makes the statement:

> Social position, as indicated by various indicators or socio-economic status, can have an effect on an individual's perceptions of control over his or her life…. the data show that there is a clear relationship between education…and feelings of personal control over one's life…. people who were university-educated scored 20.0 on the mastery scale, while those with less than high school score 17.3.

Data from a survey on scores and education levels for Saskatchewan adults in the survey are given in Table 3.

Table 3. Cross-classification table and statistics of level of personal control, classified by level of education, Saskatchewan adults

Personal control or Mastery level	Level of education			Total
	Less than high	Completed high school	Completed university	
Low (0-18)	49	91	32	172
Medium (18-21)	25	87	79	191
High (22-28)	4	37	61	102
Total	78	215	172	465
Mean	16.36	18.41	20.60	18.98
Standard deviation	3.74	3.89	3.89	3.87

4. Probabilities. Suppose an individual is randomly selected from the 465 persons in the cross-classification section of Table 3.

   a. Obtain the following probabilities:

      i. Selecting a person with a medium level of personal control.

      ii. Selecting a person with who has completed high school or university.

      iii. Selecting a person with a high level of personal control and who has completed high school or more education.

      iv. Selecting a person with low level of personal control given that the person has less than a high school education.

   b. Explain whether the event of having a low level of personal control and the event of having completed university are dependent or independent.

   c. Using the probabilities from a. and b., briefly comment on Milan's statement.

5. Interval estimates. From the information in the last three rows of Table 3, obtain 90% interval estimates for the true mean level of personal control for the individuals with each of the three different levels of education (three interval estimates). From these interval estimates and the data in Table 3, comment on Milan's statement.

6. Diversity in attention paid to election. Table 4 gives percentage distributions of responses, for younger and older adults, to a question about how much attention people paid to TV coverage of the 2004 federal election. The responses were obtained on a 10-point scale from 1 meaning very little attention to 10 meaning a lot of attention. Those who did not watch at all were coded 0, so the scale goes from 0 to 10.

From Table 4, obtain the standard deviation and coefficient of relative variation of attention paid to the election for each of the younger and older group of respondents. From these statistics and the data in Table 4, comment on similarities or differences among the two groups of respondents.

Table 4. Percentage distributions of amount of attention paid to TV coverage of the 2004 federal election, younger and older respondents

Attention paid to the election (0-10 scale)	Percentage of respondents of age	
	30 or less	Over 30
0-2	33.0	22.0
2-4	20.8	16.2
4-6	20.5	23.1
6-8	16.3	18.9
8-10	9.4	19.8
Total	100.0	100.0

Source: Canadian National Election Study, 2004.