Economics 224-001/002
Assignment 4

Note: Due by noon Nov. 7, 2008, in the Department of Economics office, CL241. Assignments will be accepted after that until noon Monday, Nov. 10 with a 20% reduction in grade; after that assignments will not receive a grade.
Be sure to keep an electronic copy of all Excel spreadsheets. You may need to use them again in subsequent assignments. Show ALL steps.

The Minister of Advanced Education, Employment and Labour has a variety of questions he wants answered about Saskatchewan residents who have a university degree (Bachelor's or higher) and are working. You have been assigned by your boss in the Ministry to answer these questions.
On the class WebCT page, I have put up an Excel file called "data_asst4_2008.xls." You will find in that file a worksheet called "raw data". That work sheet has 1267 observations from the PUMF of the 2001 Census on men and women from Saskatchewan with a bachelor's degree or higher who are between the ages of 21 and 64, who are working full-time ($\geq$ 30 hours per week), who are not currently in school, and whose wage income is positive. You are going to use that data set to answer some of the Minister's questions.

1. The file has 3 immigrant categories for each individual: permanent residents who are non-immigrants, permanent residents who are immigrants, and non-permanent residents. I think we do not want the non-permanent residents in our data set. Please clean up the data set to remove these individuals from the data set. Explain carefully how you did it, and how many individuals are left in the data set. Please provide the full set of summary statistics on the remaining individual for all 6 variables in the data set.

(5 marks)

2. The Minister has speculated that the average person in Saskatchewan with a university degree gets paid at least $45,000 per year. You need to test this for him with your sample.
a) Write out your hypothesis statement.
b) Using the individuals you have extracted, and using Excel and the appropriate test (see Appendix 9.2 of the text), test your hypothesis using the probability value approach. Please be sure to attach a printout of your Excel results.
c) Be sure to write out a simple paragraph summarizing your results for the Minister in non-technical language.

(10 marks)

NOTE: for questions 3, 4 and 5 you need to sort your data from question 1 in three different ways. I advise you to keep a clean copy of the original question 1 results, and create 3 different copies for each of the questions below.

3. In class, we have examined some information on the labour income of immigrants versus nonimmigrants using the SLID data for Alberta. The Minister was interested by those results, but want to see some results for Saskatchewan. Specifically, he wants to see if immigrants to Saskatchewan get paid more than nonimmigrants. Using your cleaned-up dataset from question 1, test whether nonimmigrants make more than immigrants, using the probability value approach.

a) You will need to sort out the immigrants and nonimmigrants first. Explain how you did this.

b) Write out your hypothesis statement.

c) Using the individuals you have sorted, and using Excel and the appropriate test (see Appendix 9.2 of the text), test your hypothesis using the probability value approach. Please be sure to attach a printout of your Excel results.

d) Be sure to write out a simple paragraph summarizing your results for the Minister in non-technical language.

(15 marks)

4. The Minister has heard that immigrants are different than nonimmigrants, specifically that they are more educated than nonimmigrants. Using your sorted data from question 3, test whether immigrants are more educated than nonimmigrants using the probability value approach.

a) Write out your hypothesis statement.

b) Explain how you might test this hypothesis with the data at hand. What problems exist with using the method you suggest?

c) Using the individuals you have sorted, and using Excel and the appropriate test (see Appendix 9.2 of the text), test your hypothesis using the probability value approach and the method you suggested in b). Please be sure to attach a printout of your Excel results.

d) Be sure to write out a simple paragraph summarizing your results for the Minister in non-technical language.

(15 marks)

5. One of the factors we have discussed in class is how men make more than women among all full-time workers. The Minister wants to know if similar results hold for male and female immigrants.

a) Go back to the original cleaned-up data set. Separate out the immigrants. Sort the resulting immigrants into males and females Explain how you did both of these steps.

b) Write out your hypothesis statement.

c) Using your cleaned, sorted data, test whether immigrant men make more than immigrant women using the probability value approach. Please be sure to attach a printout of your Excel results.

d) Be sure to write out a simple paragraph summarizing your results for the Minister in non-technical language.

(15 marks)