PO3110: Research Methods for Political Science

HOMEWORK Assignment 3 (due Friday, 9 Nov. 11:59PM)

Exercise 1 (24 pts)

Consider the following brief descriptions of research designs. For each, what are plausible confounding variables or alternative explanations that may affect the researcher's ability to draw causal inferences? For each, also briefly discuss whether reverse causality be an issue as well (6 pts each).

a. "Economic interdependence reduces the probability of conflict. To show this, I will collect data on trade volume between all pairs of countries and correlate it with the number of times these pairs have fought each other"

b. "Poverty leads to civil war. I will collect data on GDP per capita in various countries and measure the number of times they have experienced civil wars over the past 20 years."

c. "Ethnicity has a strong influence on voting patterns. I will collect voting records for thousands of individuals, and correlate their ethnicity with their voting choices."

d. "Membership in the EU makes members more democratic. I will compare the democracy score of all EU countries prior to adhesion to their current score. I will compare this change to the change of a random selected set of countries. Any change in the democracy score of EU members can then be attributed to EU membership."

Exercise 2 (20pts)

Are the following examples of systematic and/or random errors? Motivate your answer.

a. A researcher conducts an opinion poll. He buys a database of addresses with Tesco clubcard holders and contacts them regarding participation in the survey.
b. Twenty students help a researcher in coding newspaper articles. They do, however, not always agree on the coding of certain paragraphs in the content analysis.
c. A researcher conducts a computer-assisted text analysis of documents which have been scanned and translated into electronic form using Optical Character Recognition (OCR).
d. Researchers analyse the content of election manifestos. For some parties in some years no manifesto is, however, located. The researchers analyse the content of a party leader speech instead.

Exercise 3 (20 pts)

The dataset **MT08 Data INES.sav** contains some information from the Irish National Election Study, including data on the age of the respondent.

a. Open a syntax window and run the following syntax. Explain what it does:

```
COMPUTE age=DATEDIFF(DATE.DMY(1,1,2002), DATE.DMY(v0904,v0905,v0906),
"years").
EXECUTE.
```

b. Calculate a 95% confidence interval for the mean of the newly created variable. Give an interpretation of the result.
c. According to the 2002 census, the average age of the population over 18 was 43.7 years. Use a one-sample t-test (in SPSS) to find out if the sample mean significantly differs. Do not forget to formulate a null hypothesis and alternative hypothesis.
d. Think of possible reasons for the result under c.
e. Compare the result of the t-test and the confidence interval. Why do you get similar results?

Exercise 4 (16 points)

A student produces the following cross-table:

		Turnout at elections		Total
		Yes	No	
Gender	Male	42.8% (457)	48.9% (230)	44.0%
	Female	58.2 % (635)	51.1% (240)	56.0%
		100%	100%	100%

(1) Indicate all shortcomings in this table and (2) produce a properly formatted table. (3) Provide a proper interpretation of the results reported in the table.

Exercise 5 (20 pts)

John holds a small survey at this workplace regarding political knowledge. He found that 13 managers had low political knowledge, 12 had normal political knowledge, while 15 had high political knowledge. Among the other staff 45 had low political knowledge, 53 had normal political knowledge and 23 had high political knowledge.

a. Produce a cross table containing the observations (not percentages).
b. Use this table to calculate *chi-square*. Explain how you obtained this result.
c. Calculate Cramer's V and interpret the results.