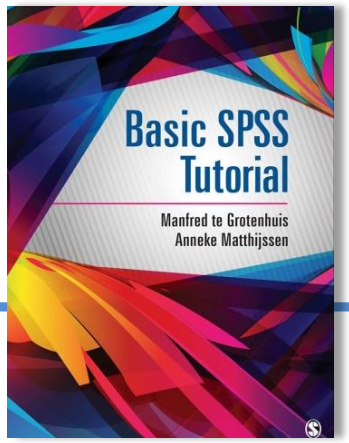
Basic SPSS Tutorial: chapter 4 Descriptive Statistics, extra assignments



This is a second set of extra assignments (1-9) related to descriptive statistics in *Basic SPSS Tutorial*. All computer related operations are placed in a blue-shaded box with the 💻 symbol. References to Basic SPSS Tutorial are indicated with BST.

These exercises relate to statistical relationships between qualitative (nominal/ordinal) variables. These relationships can be presented in a graphical way but also with contingency tables and measures of association, like Kendall's tau. We use these measures of association for descriptive purposes here only.

💻 Download the data set THAILAND.SAV from the web page: http://study.sagepub.com/basicspss.
Start SPSS and open THAILAND.SAV (BST: section 2.2).
Open also a text file in the program Word or any other word processor where you store your answers to the questions below.

💻 Create a box plot (BST: section 4.4) for age at first marriage (name variable: *v511*) and *Literacy*. You may assume that literacy (partly) determines at what age women marry for the first time.

💻 Calculate for every category of *Literacy* all quartiles for age at first marriage (BST: section 3.5 and Figure 4.2, check *Quartiles*).

1. Check whether the box plot indicates Q1, Q2, and Q3 correctly.

💻 Copy the box plot and the quartiles per category of *Literacy* into your text file (BST: section 4.7) and add a description of the statistical relationship between literacy and the age of first marriage.

2. Someone states that literacy and age of marriage have no relationship with each other. How would you respond to that statement based on your analyses in this assignment?

Download the data set DIVORCE.SAV from the web page: http://study.sagepub.com/basicspss. Open DIVORCE.SAV (BST: section 2.2). .

In this data set you will find results from research into the relationship between religious affiliation and divorce rates. The units of analyses are respondents (individuals) and they were asked to which denomination they belong and whether they ever went through a divorce.

Create a frequency table (BST: section 4.2) for the variables *Denomination* and *Divorce* to get first insights of the collected data.

3. What is the percentage of Catholics and the percentage that went through a divorce in the sample?

Create a contingency table (a.k.a. cross table), see BST: section 4.6, using the variables *Denomination* and *Divorce*. Keep in mind that predictor variables (a.k.a. independent variables) are the column variables (dependent variable = row variable). The cross table should contain observed counts and the column percentages. We need also a proper measurement of association (BST: sections 5.2). Paste all outcomes into your text file (BST: section 4.7).

4. Describe the relationship between denomination and divorce rates using the column percentages.

Suppose a researcher is not interested in the difference in divorce rates between Protestants and Catholics. To check whether merging these two categories into one does make any difference to the association found, you have to create a new cross table in which both denominations are one category (BST: section 3.2.2). This new cross table must include observed counts and column percentages + the measure of association you already used in the original cross table.

5. Is there any difference in the association after merging Protestants and Catholics into one new category? Please explain why there is (no) difference.

Suppose someone wants to investigate the relation between education and the attitudes on political leadership. The hypothesis is that higher educational levels (*Education*) result in less appreciation for just one strong political leader (*Leader*).

Download STRONG LEADERS.SAV from the web page: http://study.sagepub.com/basicspss.
Open STRONG LEADERS.SAV (BST: section 2.2). To test the hypothesis, create a box plot (BST: section 4.4, mind that the x (independent) variable always is always placed on the x axis).
Create a contingency table (x variable in the columns) including absolute counts and the correct percentages (BST: section 4.6). Include also the proper measure of association. (BST: section 5.2)
Paste the outcomes into your text file (BST: section 4.7).

6. Describe the relationship between education and political leadership using the box plot / contingency table you created.

7. Is the hypothesis confirmed by the results? Please explain.

We end this series with the odds ratio (BST: p. 75). According to some the odds ratio between religious affiliation and voting for a religious political party has stayed almost the same over time in the Netherlands (By the way, that is the country we, the authors of BST, come from. It is a small piece of land in North West Europe but the Dutch (that is how the people in the Netherlands are called) founded New York in 1624!).
The basic idea is that people vote for a political party that serves their interest best, so religious people may vote for a religious party. Others think that religious political parties have to adapt to modern, secular times and will change their political ideas and goals. The hypothesis therefore is that the odds ratio will decline over time as less religious people vote for that party, while non-religious people may vote for the once religious party more (in the Netherlands, 35% of the people is religiously affiliated, that is rather different from the U.S.A).

Download 'POLITICS.SAV' from the web page: http://study.sagepub.com/basicspss.
Open 'POLITICS.SAV' (BST: section 2.2).
Create a contingency table with *Denomination* and *Party* and include the correct percentages together with the odds ratio op (in SPSS you have to check the 'risk' box, see BST: p. 75).
Paste all outcomes into your text file.

8. Describe the relationship between *denomination* and *party* using both the contingency table and the odds ratio estimate.

Create the contingency table again for denomination and party but add a third variable to the table, namely *Year*. In SPSS the 3rd variable is called the 'layer' variable, see BST: Figure 4.16 on p. 66. This will result in 5 tables, for five years in the period 1979-2005.

9. Describe the relationship between *Denomination* and I*arty* using both the tables and the odds ratio estimates. Do religiously affiliated people vote typically for a religious party and do the non-affiliated refrain from it or did something change over time?