Next Generation User Interfaces:
WPO Evaluation

Exercise 1: User Experience survey

This survey measures the user experience by the following factors:

- Attractiveness
- Perspicuity (i.e. clearness or lucidity)
- Novelty
- Stimulation
- Dependability

The survey contains multiple questions which measure each factor.

Open the UserExperience.sav file where you added the data from your spoon evaluation in SPSS. Select the Variable View tab. Follow the steps below. If you do not have your data from last exercise session then ask another group for their data.

Step 1: Recode the data.

- Take a look at the questions in UXquestions.doc. You can observe that the 7-piont Likert scale is not consistent through all the questions. Some questions go from a negative value to a positive one while others have the inverse. For example, the first question goes from annoying to enjoyable (i.e. negative to positive) while the third question goes from creative to dull (i.e. positive to negative). In order to analyse the data, we should first recode all the questions which go from positive to negative into their inverse value.
- Since we want to see if the user experience factors have a positive mean value, it is necessary to change the 7-point Likert scale to a scale from -3 to 3 with 0 as the neutral value. Thereby, if the mean value is above 0, there is a positive evaluation for that factor.

In conclusion, we have to recode two times, for the inverse values and all the questions have to go from a 7-point Likert scale to a scale from -3 to 3.

The scales have to be recoded as follow:

Normal questions which are already from negative to positive:

Old value	1	2	3	4	5	6	7
New value	-3	-2	-1	0	1	2	3

Questions which need to be inverted – indicated with a * in the UXquestions.doc file:

Old value	1	2	3	4	5	6	7
New value	3	2	1	0	-1	-2	-3

This is how to do it in SPSS:

- Case 1: normal questions (first table above)
  Go to Transform – Recode into same variable
  Select and add all the variables which DO NOT have a * in the UXquestion.doc to the right window by selecting a variable and clicking on the right arrow between the two windows.
  Click on “Old and New value”
  Add all old and new values to the right window. For example, Old value = 1 New value = -3 – Click Add

  Click Continue and Ok

- Case 2: Questions which need to be inverted
  Go to Transform – Recode into same variable
  Select and add all the variables which DO have a * in the UXquestion.doc to the right window by selecting a variable and clicking on the right arrow between the two windows.
  Click on “Old and New value”
  Add all old and new values to the right window. For example, Old value = 1 New value = 3 – Click Add

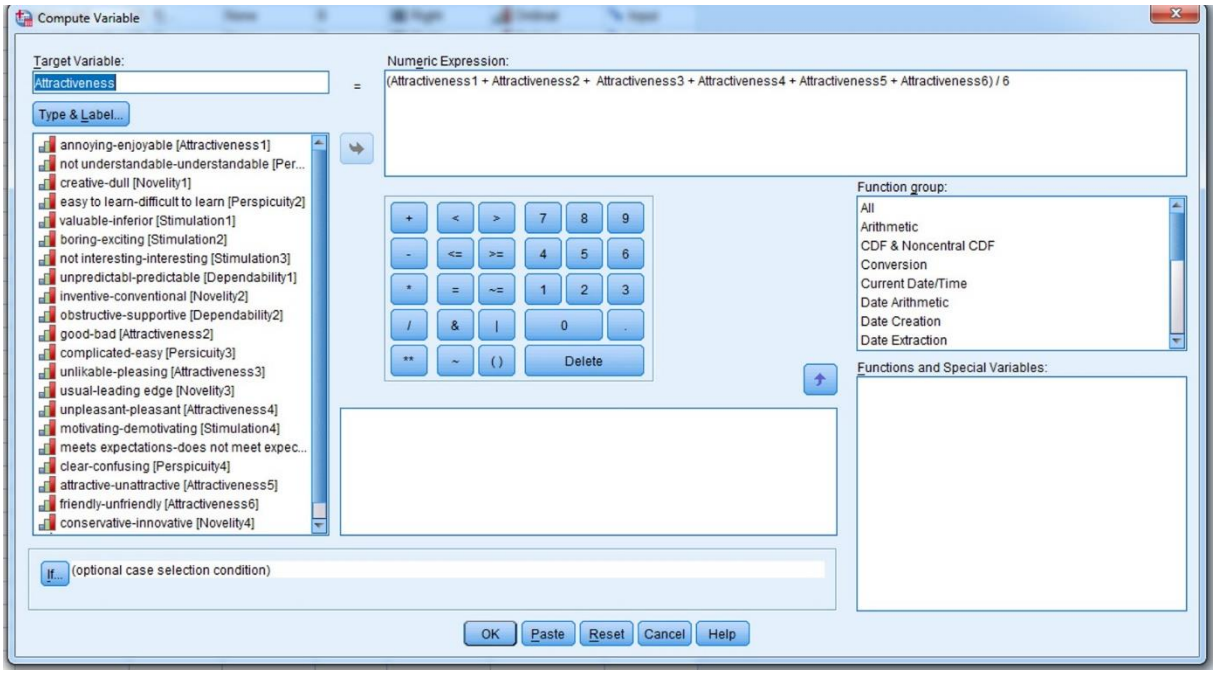
  Click Continue and Ok

Step 2: Create the User Experience factors

- Repeat the following for each factor i.e. Attractiveness, Perspicuity, Novelty, Stimulation and Dependability.

- Go to Transform – Compute Variable
  Calculate the mean for each factor by adding up all relevant variables and divide them by the amount of variables as shown in the screen shot below.

  Click Ok and repeat for the other factors.



Step 3: Analyse the UX factors

- Go to Analyze – Descriptive Statistics – Explore
  Add the five factors to the Dependent List box
  In the Display box select Statistics

Step 4: Make a bar chart in Excel

Since SPSS does not support graphs which include more than one factor, you will have to use Excel.

- Make a table in Excel with the following values:

Factor	**Mean**	**Standard deviation**
Attractiveness		
Perspicuity		
Novelty		
Stimulation		
Dependability		

The values of the mean and standard deviation are given in the output of Step 3.

- Draw a bar chart with the factors on the x-axis and give the standard deviation with error bars

Step 5: Interpret the results

- Explain what is good or bad and why you think it is. If the mean value is above 0 then there is a positive evaluation for that factor.
- Explain the error bars results

  Interpretation Guideline:

  1/ Positive evaluation:
    - Mean values are above the middle value of the Likert scale AND standard deviation is “small”
    - Reflect back to your requirement analysis
    - Tell something about the spreading of the standard deviation

  2/ Negative evaluation
    - Try to determine why factors are not good
    - Tell something about the spreading of the standard deviation

  Standard Deviation: This value tells you something about the spreading of your data. For example, if your participants all filled in a high score on the 7-point Likert scale then the value will be small. In contrast, if some participants filled in low scores and others high scores then the value will be large. If the value is large then your data are not consistent. It is up to the analysist to determine what small and large is. In our evaluation let say that small are values between 0 and 3.

You can use this guide to also evaluate the Usability and to analyse the evaluation of your project. Note that in the Usability survey you do not have to recode the variables as done in step 1.

For any questions, contact us!