

Tutorial 9: Splitting Ordinal/Continuous Variables (2 categories)

Description

This tutorial will convert a continuous or ordinal/integer variable into a categorical variable. This tutorial will specifically focus on splitting a variable into 2 categories.

In our dataset, we have variables that can be used as measured independent variables to understand their systematic influence on participants' responses. For example, in our project, we may want to see if participants' self-reported Liberal identity influences their response towards the person who made the offending comment.

The political identity variable (**pol_continuum**) was answered using a scale from 1-7 ranging from 1 = 'Strongly Conservative' to 7 = 'Strongly Liberal.'

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1. Find Descriptives

- a. Go to the 'Analyses' tab.
- b. Click on 'Explore' and then 'Descriptives'
- c. Move the **pol_continuum** variable into the variable window on the right and select the following statistics: Mean, Median, Standard Deviation.
- d. Based on the mean, median, and standard deviation, we can see from the descriptives that data is highly skewed.
- e. Examining the frequency distribution gives us an even clearer idea of how participants responded:

The screenshot shows the SPSS Descriptives dialog box on the left and the output window on the right. The dialog box has 'pol_continuum' selected in the Variables list. The output window shows the following data:

Descriptives

pol_continuum	
N	180
Missing	0
Mean	5.60
Median	6.00
Standard deviation	1.33

Frequencies

Frequencies of pol_continuum

Levels	Counts	% of Total	Cumulative %
Somewhat Conservative	2	1.1%	1.1%
Slightly Conservative	9	5.0%	6.1%
Neither Conservative nor Liberal	37	20.6%	26.7%
Slightly Liberal	23	12.8%	39.4%
Somewhat Liberal	49	27.2%	66.7%
Strongly Liberal	60	33.3%	100.0%

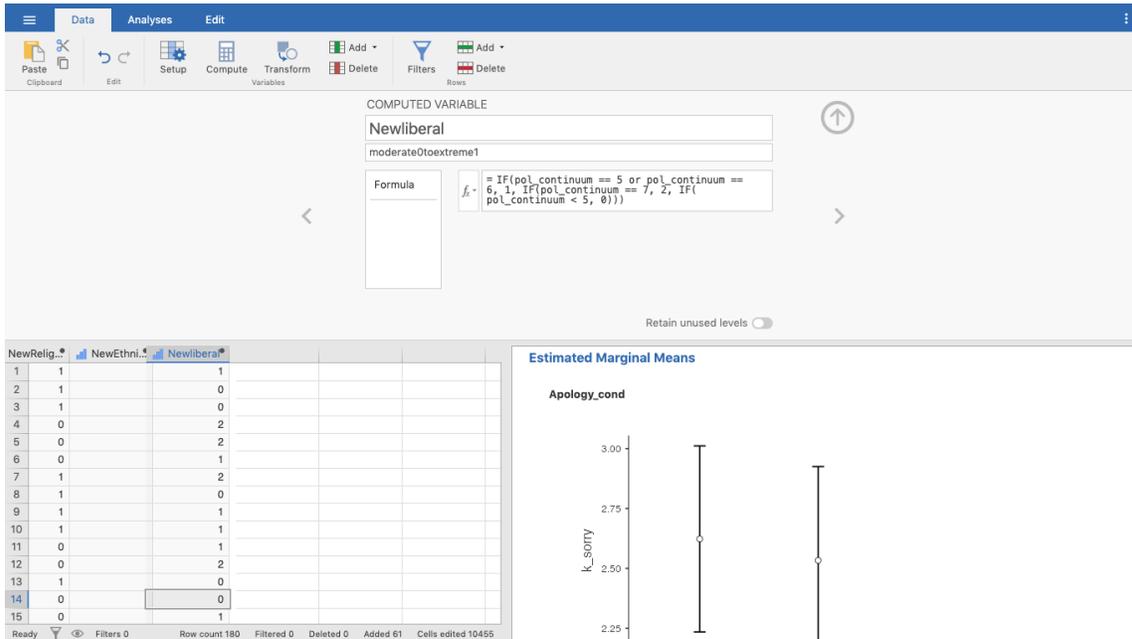
- f. Based on the distribution, we decided that it would be helpful to re-categorize this variable as:
- i. People who are moderately Liberal (5 and 6; N =72)
 - ii. People who report strongly Liberal (7; N = 60)

2. Create new variable

- a. We can create these new categories using the IF' function-, meaning that IF the first logical expression is TRUE, insert a first value, but IF a second logical expression is TRUE, insert a second value, but IF a third logical expression is TRUE, then insert a third value.
 - i. **Note:** use == for 'equals' statement.
 - ii. You must close with three left parentheses (see formula below) because there are 3 commands otherwise you will get an error message.
- b. Scroll to end of spreadsheet and create new variable
- c. Name new variable and give a brief description
- d. In function window- specify code

=IF(pol_continuum == 5 or pol_continuum == 6, 1, IF(pol_continuum == 7, 2, IF(pol_continuum < 5, 0)))

i. This is basically saying that the new variable will be coded as 1 when a participant is moderately liberal and 2 when strongly liberal. We gave anyone less than a 5 a '0'.



e. You can see that the recategorization worked when you run the frequencies on your new variable and get the same values for each category in the first frequencies you ran on the original Liberal variable.

The screenshot shows the SPSS 'Descriptives' dialog box on the left and the output window on the right. The dialog box has 'NewEthnicity' selected in the 'Display of Statistics' list. Under 'Sample Size', 'N' and 'Missing' are checked. Under 'Central Tendency', 'Mean', 'Median', 'Mode', and 'Sum' are selected. Under 'Dispersion', 'Std. deviation', 'Variance', 'Range', and 'IQR' are selected. Under 'Distribution', 'Skewness' and 'Kurtosis' are selected. Under 'Normality', 'Shapiro-Wilk' is selected. The output window shows a summary for 'Strongly Liberal' (N=60, 33.3%) and a 'Descriptives' table for 'Newliberal' (N=180, Missing=0). Below that is a 'Frequencies' table for 'Newliberal'.

Newliberal	
N	180
Missing	0

Levels	Counts	% of Total	Cumulative %
0	48	26.7%	26.7%
1	72	40.0%	66.7%
2	60	33.3%	100.0%

f. Filtering out the 'Not Liberals'

The screenshot shows the SPSS 'ROW FILTERS' dialog box with the filter expression '= NewLiberal >= 1' applied. A 'Filter 1' window is open, showing a list of variables including 'NewEthnicity' and 'Newliberal'. Below the dialog is a data grid with columns for 'Filter 1', 'ID', 'gender', 'age', and 'religion'. The grid shows 15 rows of data. The status bar at the bottom indicates 'Row count: 180', 'Filtered: 0', 'Deleted: 0', 'Added: 61', and 'Cells edited: 10455'. The output window on the right shows the same 'Descriptives' and 'Frequencies' tables as in the previous screenshot.

The screenshot shows the Jamovi interface with a data table and a summary table. The data table has columns for ID, gender, age, religion, and religion_7. A filter is applied to 'NewLiberal' with the condition 'NewLiberal >= 1', resulting in 48 rows being filtered out. The summary table shows the following data:

Descriptives	
NewLiberal	
N	132
Missing	0

Frequencies of NewLiberal			
Levels	Counts	% of Total	Cumulative %
1	72	54.5%	54.5%
2	60	45.5%	100.0%

3. Check Descriptives Again

a. If you run frequency on NewLiberal- it should verify that you did this correctly

The screenshot shows the Jamovi interface with the Descriptives dialog box open. The variable 'NewLiberal' is selected in the Variables list. The 'Frequency tables' checkbox is checked. The 'Statistics' section is expanded, showing options for Sample Size, Central Tendency, Dispersion, Distribution, and Normality. The resulting summary table is as follows:

Descriptives	
NewLiberal	
N	132
Missing	0

Frequencies of NewLiberal			
Levels	Counts	% of Total	Cumulative %
1	72	54.5%	54.5%
2	60	45.5%	100.0%

References

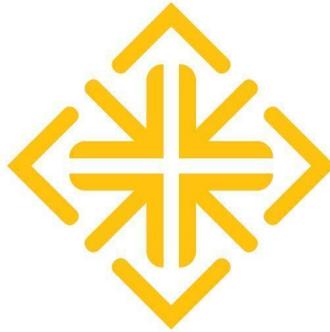
[1] The jamovi project (2021). *Jamovi*. (Version 1.6) [Computer Software]. Retrieved from <https://www.jamovi.org>.

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**This Jamovi tutorial is a companion to a video tutorial and these materials were developed
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