



Filtering Variables in a Two Dimensional Question

Tutorial

Time: 15 minutes
Skill level: High
Editions: Professional

Learning objectives

- ⇒ Manipulating variable labels in Excel.
- ⇒ Re-ordering variables.
- ⇒ Writing code (**JavaScript Formulas**).
- ⇒ Automatically writing code (template **Use as Template for Replication**).

Illustrative problem




A **Two Dimensional – Binary** question shows the images associated with different phone companies. There is a desire to “filter” the resulting table so that for each brand, data is only shown from respondents that spontaneously mentioned that brand (recorded in a separate **Multiple Response – Binary** question).

%	AAPT/Cellular One	New Tel	One-tel	Oplus	Orange (Hutchison)
Bureaucratic	18	14	20	34	17
Slow service	23	22	38	38	26
Friendly	17	10	12	42	28
Low prices	18	12	21	38	38

Activities

1. Import `Phone.sav` as a new data file (which will be in `c:\Program Files\Q\Examples`, unless Q has been installed in a different location on your computer).
2. Press **Yes**.
3. In the blue drop-down menu type `Two Dimensional1` and press **Enter** on your keyboard. This is the table to be “filtered”. (Filtered is in quotation marks, as, rather than filter the data, you will create a new question which has the desired properties.)
4. In the **Variables and Questions** tab:
 - a. Select row 7
 - b. Right click and select **Set Question...**
 - c. Name the question `Unaided awareness: AAPT/Cellular One`
 - d. Click **OK**.
5. Right-click on row 1 and select **Insert Variable(s)** and **JavaScript Formula** and **Numeric....**
6. In the **Expression** box, type `if (`
7. In the Find box, type, `Unaided` and the variable created in step 4 will be selected.
8. Right-click on the selected variable and select **Edit Values...**, which shows you the *Value*

Attributes for the variable. Note that a *Yes* has a value of 1.


9. Press **OK** and add this variable to the **Expression** by pressing .
10. In the **Expression** box, type `==1`) your whole expression should now be `if(Q5_1==1)`
11. Type `aapt/cellular one` in the **Find** box and press the **Find next** button () until **q20a1: Bureaucratic - AAPT/Cellular One** is selected (this is the first variable in `Two Dimensional1`).
12. Add this variable to the **Expression** by pressing .
13. In the **Expression** box, type `; else NaN`; The whole expression should read:

```
if(Q5_1 == 1)q20a1; else NaN;
```

This *JavaScript* code is interpreted as follows: if the respondent has a value of 1 for `Q5_1`, a newly created variable will contain the respondent's value from `q20a1`; otherwise, it will contain a missing value (i.e., `NaN`), and thus automatically be filtered from any analyses. Observe that values of the variables referred to in the code, and the resulting variable, are previewed at the bottom of the dialog box.
14. Set the **Name** `AwareAssoc` and the **Label** `Aware Bureaucratic - AAPT/Cellular One`
It is essential that this is typed in without any error, as Q will be examining this label to identify a pattern, and if you do not type it correctly, there will be no pattern to find.
15. Press **OK**.
16. Right-click on the newly created variable, `AwareAssoc`, and select **Insert Ready-Made Formula(s) and Use as Template for Replication...** This will cause a large number of new variables to automatically be created, where the selected variable is used as a template. The **Template Replication** dialog box shows how Q has assessed which aspects of the code are to be changed. It shows that the unaided awareness variable `Q5_1` is to be used in all of the variables, but the brand association variables are to be looped through when creating all of the variables. Q has worked this out by examining the questions that the variables belong to (i.e., `Q5_1` is in a variable on its own, so must always be used, whereas `q20a1` is the first of many variables in the question `Two Dimensional1`, so Q loops through all of these.
17. Press **OK**. Q has now automatically created a new question called `Aware`, based on `Two Dimensional1`, using only data for respondents who are aware of AAPT/Cellular One. The resulting table is identical to that obtained by applying a standard filter to the table for `Two Dimensional1`. The next step is to modify the variables that make up `Aware` to reflect awareness of the different phone companies.
18. Right-click on the variable in row 2 and selected **Delete Copied or Constructed Variable(s)**. This is the variable which was the original template; it is no longer needed.
19. Click into the **Label** cell for row 2.
20. Scroll down to row 153, hold down shift and click on the **Label** cell, causing all of the cells in the

Label column from row 2 to 153 to be selected.

21. Press **Ctrl** and **c** on your keyboard to copy, open a new Excel workbook, and paste it into cell A1, causing the contents to appear in cells A1 to A152, with all of these cells selected. If it has appeared in multiple columns it is because you are not using the default Excel settings in **Text to Columns** (this may occur if you have previously used **Text to Columns**).
22. In Excel, select **Data** and **Text to Columns** (in different versions of Excel, these may have slightly different names), and
 - a. Select **Delimited**
 - b. Press **Next**
 - c. Check **Other** and type a dash (-) into the box.
 - d. Select **Finish**.
23. Select column B and do a search and replace, replacing " One" with " One-tel". Be sure to select the "Match entire cell contents" option.
24. In cell C1 type =B1 & " " & A1 and press **Enter**.
25. Copy the formula in cell C1 and paste it into cells C2 to C152.
26. Copy the contents of cells C1 to C152, return to Q and select **Edit** and **Paste Labels**.
27. Select rows 2 to 153, right-click and select **Sort by** and **Label**. The variables are now sorted by brand.
28. Select rows 21 to 39, right click and select **Search/Replace** and **Constructed Variable Expressions...** and press **No**.
29. In the **Find what** box enter Q5_1 and enter Q5_2 in the **Replace with** box and press OK.
30. Repeat the search and replace process for the remaining brands:
 - a. One-tel: rows 40 to 58 and Q5_3 (note in the **Search/Replace Computed Expressions** dialog box you can retrieve previous search terms by clicking on the black triangle to the right of the **Find what** and **Replace with** fields).
 - b. Optus: rows 59 to 77 and Q5_4
 - c. Orange (Hutchison): 78 to 96 and Q5_5
 - d. Telstra (Mobile Net): 97 to 115 and Q5_6
 - e. Virgin Mobile: 116 to 134 and Q5_7
 - f. Vodafone: 135 to 153 and Q5_8
31. Rename the question as **Brand Associations** (Base: Spontaneously Aware) and change its **Question Type** to **Two Dimensional – Binary**.
32. Double-click on the row numbers to see the resulting table.

33. Right-click on the table and select **Cells – Below** and **Base n**.
34. Save the table by pressing .
35. In the **Variables and Questions** tab type `aided aware` in the **Find** box.
36. Select the found variable and the 10 variables underneath, right click and select **Set Question...** and **OK** to return variables Q5_1 to Q5_11 into a single question.
37. Double-click on the question and select **Statistics – Cells** and **n**. Check that the counts for this table match the sample size bases shown at the bottom of the recently created table. If they do, you have correctly completed this tutorial.