

CROSS-TABULATION TOOL: STEP-BY-STEP INSTRUCTIONS

INTRODUCTION

Cross-tabulations can be used to summarise the frequency distribution of two categorical variables in the adult social care survey (ASCS) or carers survey (PSS SACE) dataset. This guide provides you with a step-by-step overview of how to use the **cross-tabulations and chi-square tool** in the MAX toolkit to generate a **cross-tabulations (or contingency) table**.

Please note: cross-tabulations are a type of **descriptive statistic** and can be used to explore the data and make generalisations. Cross-tabulations, however, do not test whether the observed difference between the variables in a dataset is statistically significant. **Chi-square tests** can be used for this purpose and can also be calculated using this tool. Further guidance on how to do this is provided in the MAX toolkit.



An overview of cross-tabulations and chi-square tool, and the differences between the tests, is provided in the guide **exploring the relationship between survey variables**, available in the MAX toolkit. Additional guidance is also provided in the Analysis and Interpretation section of the MAX toolkit.

These step-by-step instructions use illustrations from the ASCS version of the cross-tabulations and chi-square tool and use the following question ***Is satisfaction with care and support services [Q1] associated with self-rated health [Q13]?***

STEP-BY-STEP INSTRUCTIONS

Step 1: open NHS Digital data return and relevant Cross-tabulations and chi-square tool from MAX toolkit.

Step 2: select, copy and paste data from data return into **ASCS data** tab of analysis tool, taking care to ensure columns match [note: the tool is based on 2014 data entry form. Additional amendments may therefore be required in future data collections].

	C	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW
Gender		Q3a - Which of the following statements best describes how much control you have over your daily life?	Q3b - Do care and support services help you in having control over your daily life?	Q4a - Thinking about keeping clean and presentable in appearance, which of the following statements best describes your situation?	Q4b - Do care and support services help you in keeping clean and presentable in appearance?	Q5a - Thinking about the food and drink you get, which of the following statements best describes your situation?	Q5b - Do care and support services help you to get food and drink?	Q6a - Which of the following statements best describes how clean and comfortable your home is?	Q6b - Do care and support services help you in keeping your home clean and comfortable?	Q7a - Which of the following statements best describes how safe you feel?	Q7b - Do care and support services help you in feeling safe?	Q8a - Thinking about how much contact you've had with people you like, which of the following statements best describes your social situation?	Q8b - Do care and support services help you in having social contact with people?	Q9a - Which of the following statements best describes how you spend your time?	Q9b - Do care and support services help you in the way you spend your time?	Q10 - Which of these statements best describes how having help to do things makes you think and feel about yourself?	Q11 - Which of these statements best describe how the way you are helped and treated makes you think and feel about yourself?
	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

The information copied onto this tab is converted from numerical data (e.g. 1, 2 etc.) to text labels (e.g. male, female) on the hidden tab entitled 'ASCS data (2)', using the **Excel IF function**. Further information about the IF function can be found at the end of this guide.

Step 3: go to **Cross-tabulation** tab of analysis tool and click on table [this will open the **PivotTable Fields window**]. Right click and select **Refresh**.

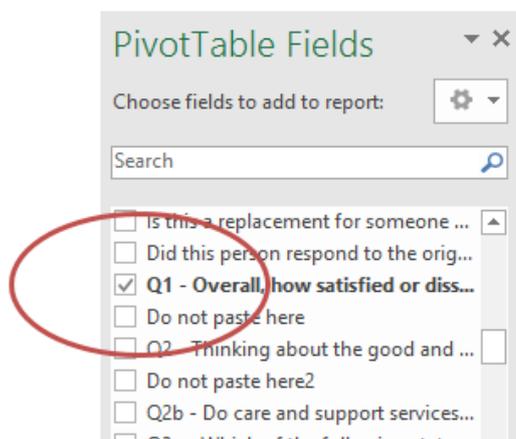
Which questionnaire was used? Primary Support Reason (All)

Count of Q3a - Which of the following statements best describes how much control you have over your daily life?

Row Labels	Grand Total
	2998
Grand Total	2998

If the pivot table does not pull the data from the data tab you may need to **Change the Data Source**. Instructions on how to do this are provided at the end of this guide.

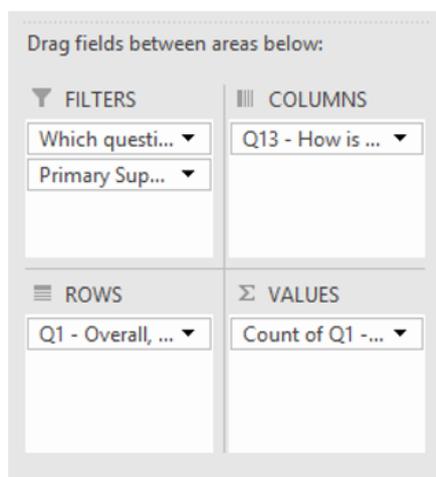
Step 4: select data to be analysed by ticking the relevant pivot table fields. In this example, you would select Q1 (satisfaction) and Q13 (self-rated health).



Step 5: while still in the **PivotTable Fields window**, drag the selected fields to the relevant areas of the pivot table. In this example, you will drag Q1 (satisfaction) to ROWS and VALUES and Q13 (self-rated health) to COLUMNS. Press **update**

Filters can be used to generate subgroups for the analysis (e.g. to a specific type of data collection)

Rows are shown as row labels on the pivot table or as categories on a pivot chart (e.g. overall satisfaction by response option)



Columns are shown as column labels on the pivot table or as the data series in a pivot chart (e.g. self-rated health by response option). Columns *organise* the data to be shown in the table.

Values are the data that is to be displayed in the pivot table. Use the drop down box to click on 'Value Field Settings'. Under 'Summarize value field by' select 'count'

Step 6: the cross-tabulations or contingency table will be generated. Modify the **layout** (e.g. stretch columns).

Count of Q1 - Overall, how satisfied or dissatisfied are you with the care and support services you receive?							
Row Labels	Very good	Good	Fair	Bad	Very bad	(blank)	Grand Total
I am extremely satisfied	10	32	36	9	6	1	94
I am very satisfied	5	36	43	9	4	2	99
I am quite satisfied	3	21	43	15	4	2	88
I am neither satisfied or dissatisfied		4	3	6	1		14
I am quite dissatisfied		1	1	1	1		4
I am very dissatisfied				1	1		2
I am extremely dissatisfied				2			2
(blank)							
Grand Total	18	94	126	43	17	5	303



The count of some of the categories in this contingency table are less than 5. If you plan to conduct chi-square analysis, these categories will need to be collapsed (i.e. combined with other categories) to ensure that the assumptions underlying the test are fulfilled. See the chi-square step-by-step instructions for further guidance.

NEXT STEPS

You can include the contingency table generated from your cross-tabulations analysis in a report (see box below) and/or use it as a starting point for further analysis, such as chi-square, which will test whether or not any observed associations are statistically significant.

The tables generated in the cross-tabulations and chi-square tool can be copied directly into a report. Alternatively, you can copy the table into a new Excel sheet for additional formatting (e.g. stretching columns, removing missing data, highlighting areas of particular interest)

Overall satisfaction with services	Very good	Good	Fair	Bad	Very bad	Grand Total
I am extremely satisfied	10	32	36	9	6	93
I am very satisfied	5	36	43	9	4	97
I am quite satisfied	3	21	43	15	4	86
I am neither satisfied or dissatisfied		4	3	6	1	14
I am quite dissatisfied		1	1	1	1	4
I am very dissatisfied				1	1	2
I am extremely dissatisfied				2		2
Grand Total	18	94	126	43	17	298

ADDITIONAL INFORMATION & INSTRUCTIONS

THE 'IF' EXCEL FUNCTION

The 'IF' function in Excel is used in the **cross-tabulations and chi-square tool** to convert the numbers in each cell of the **ASCS data tab** in to the corresponding text (e.g. 1 = male, 2 = female, 9 = missing). The IF statements and corresponding text are shown in the **ASCS data (2) tab** and can be adapted, for example, if you would like to add or change categories.

Using the IF function in Excel to convert numerical data on the ASCS Data tab to text (labels) of the ASCS Data (2) tab.

For example, the formulae below from cell C3 of the 'ASCS Data (2)' tab links to cell C3 on the 'ASCS data' tab.

```
=IF('ASCS Data'!C3=1,"male",(IF('ASCS Data'!C3=2,"female",(IF('ASCS Data'!C3=-9,"missing",""))))))
```

If cell C3 of the 'ASCS data' tab is 1, then the entry in the cell is the text 'male'.

```
=IF('ASCS Data'!C3=1,"male",(IF('ASCS Data'!C3=2,"female",(IF('ASCS Data'!C3=-9,"missing",""))))))
```

If cell C3 of the 'ASCS data' tab is not 1, then the next statement is considered. If C3 is 2, then the entry in the cell is the text 'female'.

```
=IF('ASCS Data'!C3=1,"male",(IF('ASCS Data'!C3=2,"female",(IF('ASCS Data'!C3=-9,"missing",""))))))
```

If cell C3 of the 'ASCS data' tab is not 1 or 2, then the next statement is considered. If C3 is -9, then the entry in the cell is the text 'missing'.

```
=IF('ASCS Data'!C3=1,"male",(IF('ASCS Data'!C3=2,"female",(IF('ASCS Data'!C3=-9,"missing",""))))))
```

If cell C3 of the 'ASCS data' tab is not 1 or 2 or -9, then the text is left blank ("").

```
=IF('ASCS Data'!C3=1,"male",(IF('ASCS Data'!C3=2,"female",(IF('ASCS Data'!C3=-9,"missing","")))))
```

Further information about how to use IF functions and other features of Excel, please visit the **Office Training Centre** at <https://support.office.com/en-gb/article/Office-Training-Center>

CHANGING DATA SOURCE OF PIVOT TABLE

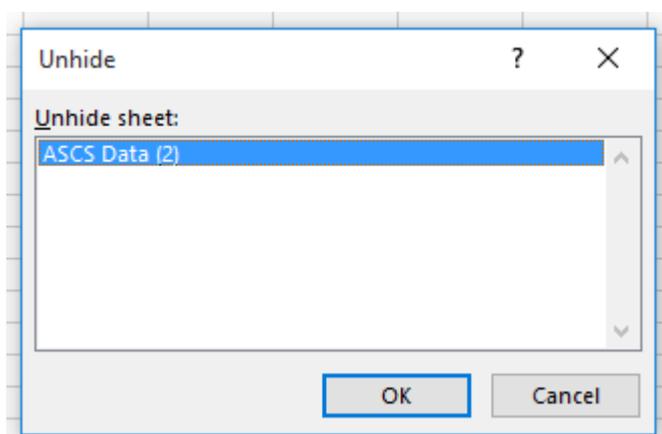
If the pivot table does not pull the data from the data tab you may need to **Change the Data Source**.

Please note that the data tab is hidden to protect the formulae contained within it. You will therefore need to unhide the tab before proceeding.

1. Hover the point over the data tab and click the right button. Select **Unhide...**



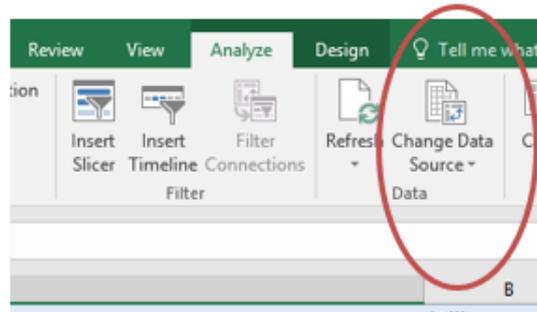
2. A pop up window will appear. Select the relevant sheet [ASCS Data (2) or SACE Data (2)] and press OK.



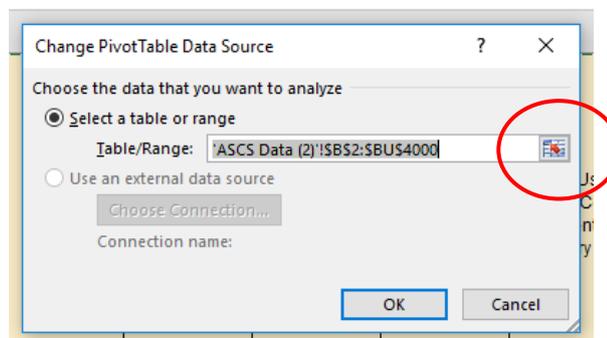
3. Once the hidden tab has appeared, go back to the **Cross-tabulation** tab.



4. Click on pivot table, go to **Analyze** tab and select **Change Data Source** (use drop down menu).



5. In **Move PivotTable** window, click **Select a table or range**, press icon to right of Table/Range.



6. Go to **Data table tab (2)** of analysis tool and select entire range (remember to include the column headings), press **OK**.