Tabulating variables in SPSS (Quiz)

The development of this E-Book has been supported by the British Academy.

Tabulation practical questions

In this example you will explore the relationship between parental education (PAREDU) and a different aspect of attitudes towards science. Here the variable USEFUL_4 captures strength of agreement with a statement about the usefulness, rather than the intrinsic interest, of science. Specifically, participants were asked how far they agree that "Making an effort in school science is worth it because this will help me in the work I want to do later".

Use the Crosstabs window to construct a cross-tabulation in SPSS to answer the following questions:

- Question: How many times does **PAREDU** take value High: University degree when **USEFUL_4** takes value Disagree?
- Question: When **PAREDU** take value High: University degree are there more values where **USEFUL_4** takes value Disagree or where **USEFUL_4** takes value Strongly Disagree?
- Question: Overall does **USEFUL_4** take value Disagree or value Strongly Disagree more frequently?

Use the Crosstabs window with row percentages in SPSS to answer the following questions:

- Question: What percentage of observations where **PAREDU** takes value High: University degree has **USEFUL_4** taking value Strongly Disagree?
- Question: What percentage of all observations has **USEFUL_4** taking value Strongly Disagree?
- Question: How does the percentage of observations with **USEFUL_4** taking value Strongly Disagree when **PAREDU** takes value High: University degree compare to the overall distribution?

Use the Crosstabs window with column percentages in SPSS to answer the following questions:

- Question: What percentage of observations where **USEFUL_4** takes value Strongly Agree has **PAREDU** taking value Low: GCSE or equiv?
- Question: What percentage of all observations has **PAREDU** taking value Low: GCSE or equiv?
- Question: How does the percentage of observations with **PAREDU** taking value Low: GCSE or equiv when **USEFUL_4** takes value Strongly Agree compare to the overall distribution?

Use the Crosstabs window with total percentages in SPSS to answer the following questions:

- Question: What percentage of all observation have **PAREDU** taking value High: University degree and **USEFUL_4** takes value Disagree?

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Solutions to Tabulation practical questions

The SPSS instructions for the basic cross-tab are as follows:

- Select **Crosstabs...** from the **Descriptive Statistics** submenu available from the **Analyze** menu.
- Copy the **Highest qualification of parent[PAREDU]** variable into the **Row(s)** box.
- Copy the **Science useful for later work[USEFUL_4]** variable into the **Column(s)** box.
- Click on the **OK** button to produce the required table.

- Question: How many times does **PAREDU** take value High: University degree when **USEFUL_4** takes value Disagree?
- Question: When **PAREDU** take value High: University degree are there more values where **USEFUL_4** takes value Disagree or where **USEFUL_4** takes value Strongly Disagree?
- Question: Overall does **USEFUL_4** take value Disagree or value Strongly Disagree more frequently?

Solutions: The output from SPSS is as follows:

Highest qualification of parent * Science useful for later work Crosstabulation

Count

		Science useful for later work				
		Strongly Agree	Agree	Disagree	Strongly Disagree	Total
Highest qualification of parent	Low: GCSE or equiv	234	413	129	61	837
	Medium: A-level or equiv	533	755	247	79	1614
	High: University degree	773	889	298	102	2062
Total		1540	2057	674	242	4513

The answers are as follows:

- There are 298 occurences where **PAREDU** takes value High: University degree and **USEFUL_4** takes value Disagree.
- From this table we can see that when **PAREDU** takes value High: University degree there are more instances of **USEFUL_4** taking value Disagree than value Strongly Agree.
- Overall there are more instances of **USEFUL_4** taking value Disagree than value Strongly Disagree.

The SPSS instructions for the cross-tab with row percentages are as follows:

- Select **Crosstabs...** from the **Descriptive Statistics** submenu available from the **Analyze** menu.
- The Row and Column variables should be already chosen so Click on the **Cells...** button.
- Click on the **Row** tickbox found under the **Percentages** section.
- Click on the **Continue** button to return to the main window.
- Click on the **OK** button to produce the required table.

- Question: What percentage of observations where **PAREDU** takes value High: University degree has **USEFUL_4** taking value Strongly Disagree?
- Question: What percentage of all observations has **USEFUL_4** taking value Strongly Disagree?
- Question: How does the percentage of observation with **USEFUL_4** taking value Strongly Disagree when **PAREDU** takes value High: University degree compare to the overall distribution?

Solutions: The output from SPSS is as follows:

Highest qualification of parent * Science useful for later work Crosstabulation

			Science useful for later work				
			Strongly Agree	Agree	Disagree	Strongly Disagree	Total
Highest qualification of parent	Low: GCSE or equiv	Count	234	413	129	61	837
		% within Highest qualification of parent	28.0%	49.3%	15.4%	7.3%	100.0%
	Medium: A-level or equiv	Count	533	755	247	79	1614
		% within Highest qualification of parent	33.0%	46.8%	15.3%	4.9%	100.0%
	High: University degree	Count	773	889	298	102	2062
		% within Highest qualification of parent	37.5%	43.1%	14.5%	4.9%	100.0%
Total		Count	1540	2057	674	242	4513
		% within Highest qualification of parent	34.1%	45.6%	14.9%	5.4%	100.0%

The answers are as follows:

- 4.9% of observations have **USEFUL_4** taking value Strongly Disagree when **PAREDU** takes value High: University degree.
- 5.4% of all observations have **USEFUL_4** taking value Strongly Disagree
- a smaller percentage of observations (4.9%) take category Strongly Disagree for **USEFUL_4** when **PAREDU** takes value High: University degree than on average (5.4%).

The SPSS instructions for the cross-tab with column percentages are as follows:

- Select **Crosstabs...** from the **Descriptive Statistics** submenu available from the **Analyze** menu.
- The Row and Column variables should be already chosen so Click on the **Cells...** button.
- Remove the **Row** tickbox and instead click on the **Column** tickbox under the **Percentages** section.
- Click on the **Continue** button to return to the main window.
- Click on the **OK** button to produce the required table.

- Question: What percentage of observations where **USEFUL_4** takes value Strongly Agree has **PAREDU** taking value Low: GCSE or equiv?
- Question: What percentage of all observations has **PAREDU** taking value Low: GCSE or equiv?
- Question: How does the percentage of observations with **PAREDU** taking value Low: GCSE or equiv when **USEFUL_4** takes value Strongly Agree compare to the overall distribution?

Solutions: The output from SPSS is as follows:

Highest qualification of parent * Science useful for later work Crosstabulation

			Science useful for later work				
			Strongly Agree	Agree	Disagree	Strongly Disagree	Total
Highest qualification of parent	Low: GCSE or equiv	Count	234	413	129	61	837
		% within Science useful for later work	15.2%	20.1%	19.1%	25.2%	18.5%
	Medium: A-level or equiv	Count	533	755	247	79	1614
		% within Science useful for later work	34.6%	36.7%	36.6%	32.6%	35.8%
	High: University degree	Count	773	889	298	102	2062
		% within Science useful for later work	50.2%	43.2%	44.2%	42.1%	45.7%
Total		Count	1540	2057	674	242	4513
		% within Science useful for later work	100.0%	100.0%	100.0%	100.0%	100.0%

The answers are as follows:

- 15.2% of observations have **PAREDU** taking value Low: GCSE or equiv when **USEFUL_4** takes value Strongly Agree.
- 18.5% of all observations have **PAREDU** taking value Low: GCSE or equiv
- a smaller percentage of observations (28.0%) take category Low: GCSE or equiv for **PAREDU** when **USEFUL_4** takes value Strongly Agree than on average (18.5%).

The SPSS instructions for the cross-tab with cell percentages are as follows:

- Select **Crosstabs...** from the **Descriptive Statistics** submenu available from the **Analyze** menu.
- The Row and Column variables should be already chosen so Click on the **Cells...** button.
- Remove the **Column** tickbox and instead click on the **Total** tickbox under the **Percentages** section.
- Click on the **Continue** button to return to the main window.
- Click on the **OK** button to produce the table as shown below.

- Question: What percentage of all observations have **PAREDU** taking value High: University degree and **USEFUL_4** taking value Disagree?

Solutions: The output from SPSS is as follows:

Highest qualification of parent * Science useful for later work Crosstabulation

			Science useful for later work				
			Strongly Agree	Agree	Disagree	Strongly Disagree	Total
Highest qualification of parent	Low: GCSE or equiv	Count	234	413	129	61	837
		% of Total	5.2%	9.2%	2.9%	1.4%	18.5%
	Medium: A-level or equiv	Count	533	755	247	79	1614
		% of Total	11.8%	16.7%	5.5%	1.8%	35.8%
	High: University degree	Count	773	889	298	102	2062
		% of Total	17.1%	19.7%	6.6%	2.3%	45.7%
Total		Count	1540	2057	674	242	4513
		% of Total	34.1%	45.6%	14.9%	5.4%	100.0%

The answers are as follows:

- 6.6% of all observations have **PAREDU** taking value High: University degree and **USEFUL_4** taking value Disagree.

As before, the table of row percentages is perhaps the most informative one for showing the relationship between parental education background and beliefs about the usefulness of science. There does appear to be a positive relationship here, with greater agreement among those from more highly-educated backgrounds, but the differences across educational groups are quite weak.