



Q4.2 Quick Start

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# Table of contents

Introduction	6
Learning more about Q and support	6
Obtaining Q	6
License files	6
Checking for new versions of Q	7
Getting started	8
Starting a project	8
SPSS data files	8
CSV data files	9
Saving and opening projects	9
The Tables, Variables and Questions, Data and Notes tabs	9
Multiple data files	9
Creating tables	10
Working with tables	16
Moving and changing rows and columns	16
Selecting statistics (n, Row %, Column %, etc.)	18
Missing values	19
Formatting cells	19
Spans	21
Creating Banner Questions	22
Customizing the names of statistics on tables and plots	23
Weighting	24
Weights, sample size and population	25
Making variables available as weights	25
Automatic	25
Tagging variables as weights	25
Creating a target weight	25
Rim weighting	26
Filtering	27
Creating simple filters	27
Creating complex filters	29
Quickly create lots of filters	29
Applying filters	30
Removing a filter	30
Creating reports	31
Saving tables	31
Organizing reports	32
Locking tables	32
Multiple selections	32
Hiding the Report	32
Basic Tables	33
Making notes	34
Plots	35
Creating a plot	35
Modifying a plot	35

Standardizing the look and your plots _____	36
Generating outputs _____	37
Copying a table _____	37
Printing tables _____	37
Export to PDF _____	38
Export to Office _____	38
Updating presentations _____	39
Creating dashboards _____	41
Preparing a project for use as a dashboard _____	41
Filters _____	42
Inserting images _____	42
Uploading a project _____	42
Managing the dashboard, company and users _____	42
Data manipulation and preparation _____	43
Reviewing summary statistics _____	43
Raw data _____	43
The Data tab _____	43
Case Identifiers _____	44
Filtering _____	44
Sorting _____	44
Value Labels _____	44
Editing the data _____	44
Creating new variables _____	45
Find Variable _____	45
Inserting variables _____	45
Delete cases _____	45
Splitter _____	46
Question Types _____	46
Setting questions _____	48
Undoing a question _____	51
Sharing and updating projects _____	52
Sharing projects _____	52
Updating tables with new or revised data _____	52
Tests of statistical significance _____	54
Using 'traditional' tests of statistical significance _____	54
Column comparisons (pairwise comparisons) _____	54
Planned tests of statistical significance _____	55
Statistical testing with weights _____	55
Smart tables _____	56
Maps _____	58
Choice modeling and experiments _____	59
Latent class analysis and trees _____	60
Dates and time series plots _____	62
Coding _____	63
Traditional multivariate analysis _____	65
Cluster Analysis _____	65
Principal Components Analysis _____	65
Regression _____	65




## Introduction

Q increases the speed and accuracy with which market research surveys are analyzed.

### Learning more about Q and support

The quickest way to find something out is to click on the **Help** menu and select **Online Documentation Search**. This takes you to a web page where you can search through Q's documentation.

The easiest ways to learn how to use Q are to either read this book, or, to complete the online training (click on **Help** and **Online Training**). Training is also available face-to-face and via web meetings for a fee.

If you wish to understand what a particular option in Q does, either press the **F1** button on your keyboard, click on the **Help** button on a dialog box, or click on the **Help** menu and select the first option (the one with the  to the left of it; the first option will always be the help for whatever is on the screen). Click on the **Search** tab in the help to search for specific terms.

You can also get support by phoning Q (go to [www.q-researchsoftware.com](http://www.q-researchsoftware.com) to find contact details for your region) or by sending an email (click on **Help** and **Email Support...**). If your request is a standard problem, it will be quickly explained or you will be referred to appropriate documentation or training materials. If your problem is new or unusual, a *How To* document will be prepared showing the steps required to complete the task.

### Obtaining Q

The latest release of Q can be downloaded from:

<http://www.q-researchsoftware.com/us/download.aspx>

If you are using an old version of *Windows*, you may be asked to install additional .NET files; a link is available on the download page.

### License files

A license file needs to be installed in order to use Q properly. If the license file has not been installed, Q will operate with limited functionality.



Q license files can be obtained by contacting [sales@q-researchsoftware.com](mailto:sales@q-researchsoftware.com) or by accessing your customer page. Q license files have a file extension of `.qlic` (e.g., `your company name license.qlic`).


Double click on the Q license file to install a license.

## Checking for new versions of Q

The first time Q is opened each day, it automatically checks for new versions. If your network/internet setup blocks this, you can manually check whether a new version of Q has been released by clicking on **Check for New Version of Q** in the **Help** menu. An internet browser window will open with the results of the check. You will either be notified that you are already running the latest version of Q, or that there is a new version available. If a new version is available, all the changes that have occurred since the last version will be listed and you will be given the option to download the new version; you should always download the new recent version.



## Getting started

Start Q by double-clicking on either the  icon on your desktop or the one located in Windows' Start menu.

### Starting a project

Q uses two different files: a *data file*, which contains the data from a market research study, and a *Q Project File* which stores all of your work in Q (e.g., tables you have created).

Q reads data from SPSS data files (file extension of `.sav` or `.spss`), CSV files (`.csv`) and *triple-s* files (`.sss` and `.asc` or `.csv`).

To start a project, select **Import New Data File (New Project)...** from the **File** menu and select a data file you wish to analyze in Q. You may be asked **Would you like Q to tidy up SPSS variable labels?** If you select **Yes**, which is usually appropriate, Q will strip out any repetitive text that appears in labels within a multiple response question (e.g., if the labels were Satisfaction: Citibank and Satisfaction: Bank of America, Q will replace these with Citibank and Bank of America). Q will then ask **Would you like Q to automatically group like variables to create multiple response questions?** It is generally a good idea to select **Yes**. More detail about setting up projects is contained in *Data manipulation and preparation*, page 43, and the *Q Reference Manual*.

**SPSS data files** SPSS data files contain both the *raw data* (i.e., all the numbers) and the meaning of the data. For example, an SPSS data file may contain a *variable* with a *Name* of Gender, a *Variable Label* explaining how to interpret the variable (e.g., What is your gender?) and *Value Labels*, showing that a value of 1 indicates that a respondent is Male and a value of 2 indicates that they are Female, and a series of 1s and 2s representing the answers of individual respondents.

Often multiple response questions are not appropriately set up in data files. For example, a question such as Which of the following brands of soft drink did you drink in the past week? Coke, Pepsi, Fanta, Diet Coke, V may be stored in SPSS as five different variables (one for each brand). Q will recognize that they are all from the same question if the SPSS data file indicates that they are in the same *Multiple Response Set*. This can be done quickly and easily in Q (see *Sharing and updating projects*, page 52 and following). If the SPSS file has been set up appropriately then Q will automatically recognize the multiple response questions.



**CSV data files** CSV data files are text files which use a comma to separate different variables. Most programs used for the collection and storage of market research data can export data as CSV files. To convert an Excel spreadsheet into a CSV file you select **Save as...** from the **File** menu and select the **Save as type** as **CSV (Comma delimited) (.csv)**.


Although Q can use CSV files, it is almost always preferable to use SPSS data files as CSV files contain no information to assist in interpreting the data (e.g., CSV files do not contain *Variable Labels*, *Value Labels* and *Multiple Response Sets*).

## Saving and opening projects

Projects are saved using either **Save Project** or **Save Project As...** in the **File** menu. Once you have saved a project, re-open it by selecting **Open Existing Project...** from the **File** menu. That is, while a project is started by importing a data file, once the project has been started you do not need to import the data again. Q will automatically read the data file associated with your project.

The rest of this guide explains how you can use Q to analyze data. All of your work is saved as a *Q Project File*, which has a file extension of *.Q*. Q makes no modifications to the underlying data itself – this makes it easy to update reports with new data (see *Updating tables with new or revised data*, page 52).

## The Tables, Variables and Questions, Data and Notes tabs

When you start Q, you are in the **Tables** tab; this is where most data analysis is performed. Change tab by clicking on the tabs at the bottom left of the screen (). The **Variables and Questions** tab is used to reorganize the data (e.g., grouping together variables, creating complicated filters, recoding). The **Variables and Questions** tab is discussed in more detail on page 46 and following. The **Data** tab shows the raw data; it is discussed in more detail on page 43. Notes can be written in the **Notes** tab.

## Multiple data files

You can analyze multiple data files at the same time. Additional data files are added by selecting **File ► Add Data File to Project....** Plots can be created using data from different data files provided that both files contain a **Date** question with identical **Name** for the variable and **Question**. The relationships between data files can be set using **File ► Edit Data File Relationships....**




## Creating tables

Tables are created by selecting questions in the blue and brown drop-downs on the **Tables** tab – see Figure 1.



Figure 1. Blue and brown drop-downs

There are three ways that you can select questions using the drop-downs:

- ⇒ Click on the  on the right of the drop-downs and select the question.
- ⇒ Click in the drop-down and select the question by using your mouse or the cursor keys on your keyboard and press the **Enter** key on your keyboard.
- ⇒ Click in the drop-down, type a word or phrase and select from the questions containing the typed word or phrase. For example, Figure 2 shows three questions all containing age.

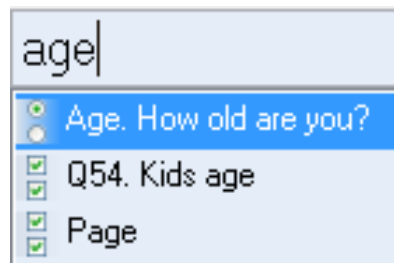


Figure 2. Quicksearch example

Figure 3 shows an example of a table produced by Q (in some other programs this is called a *Frequency Table*). There are a couple of key things to note about this table:

- ⇒ Using an expert system, Q has automatically deduced that the appropriate way of looking at the data is to use percentages.
- ⇒ Rather than show a Total, Q shows a NET. It adds up to 99%, rather than 100%, because only 99% of the sample answered this question.



⌘	⌘
AAPT/Cellular One	8 ↑
New Tel	2 ↓
One-tel	24 ▼
Optus	88 ↑
Orange (Hutchison)	43
Telstra (Mobile Net)	83 ↑
Virgin Mobile	24 ▼
Vodafone	78 ↑
Other	6 ↑
NET	99 ↑

Figure 3. SUMMARY table

Another example of a table is shown in Figure 4. In this case, rather than showing percentages, Q has automatically chosen to compute the *average* (also known as the *mean*). Q does this when the data is *numeric* rather than *categorical*. Additionally, instead of showing a NET, the table now shows a SUM, which is literally the sum of the values in the table.<sup>1</sup> When Q displays categorical data it shows a NET and when it displays numeric data it shows the SUM.

Average	Average
A	4.3
B	3.6 ▼
C	4.5
D	4.9 ▲
E	4.0
SUM	21.2 ↑

Figure 4. Comparison of means

The two tables we have just looked at were both created by selecting a question in the blue drop-down with **SUMMARY** selected in the brown drop-down. We can create a *crossstab* by selecting questions in both the blue and brown drop-downs (see Figure 5). The color-coding in the tables indicates statistical significance; with a blue color indicating that the numbers are significantly high and red indicating that they

<sup>1</sup> SUM and NET are computed using observations for which there is complete data. Where no respondents answered all the questions/items, SUM and NET will show NaN.



are significantly low. Arrows also indicate the statistical significance of the cells; the length of the arrow indicates the degree of statistical significance relative to the other cells in the table. Significance can also be shown using font size. See *Tests of statistical significance*, page 54, and the *Q Reference Manual*, for more detail.

Column %	Age		Gender		Current provider				NET
	Under 35	35 and over	Male	Female	Telstra	Optus	Vodafone	Other	
Optus	92	89	91	91	89	98 ▲	87	80	91 ▲
Telstra (Mobile Net)	87	90	86	90	97 ▲	89	79 ▼	86	88 ▲
Vodafone	91 ▲	69 ▼	86	80	70 ▼	82	99 ▲	72	83 ▲
Three	55	51	55	52	51	58	45	70	53
One-tel	40	37	37	40	43	42	33	34	39
Virgin Mobile	46 ▲	22 ▼	40	33	31	40	35	46	36
AAPT/Cellular One	24	19	24	21	24	22	20	28	22
Don't know	1	0	1	0	1	0	1	0	0
NET	100	99	100	100 ▲	100	100	100	100	100 ↑

Figure 5. Aided Awareness by BANNER

Market research studies often contain *two-dimensional questions*. For example, Figure 6 shows results from a question where consumers were asked to rate agreement with a series of statements. It is “two-dimensional” because displaying the question requires both the rows and the columns.

Row %	Strongly agree	Agree a little	Neither	Disagree a little	Strongly disagree	NET
Allows to keep in touch	83 ↑	14 ▼	2 ▼	1 ▼	0 ▼	100
Technology fascinating	14 ▼	34 ▲	28 ▲	12	11	100
Like look of phones	24	38 ▲	25 ▲	8 ▼	5 ▼	100
Surprised by bill size	32 ▲	31	18	13	7 ▼	100
Stops other people monitoring	7 ▼	15 ▼	39 ▲	17 ▲	22 ▲	100
Difficult to determine best deal	20 ▼	39 ▲	16 ▼	16	10	100
Spent a lot of time shopping for best deal	13 ▼	30	15 ▼	24 ▲	17 ▲	100
Closely monitors time on phone	19 ▼	30	15 ▼	21 ▲	15 ▲	100
Cost is a factor when deciding to SMS or phone	24	27	15 ▼	16	17 ▲	100

Figure 6. Attitude data



%	%
Allows to keep in touch	97 ↑
Technology fascinating	49 ▼
Like look of phones	62 ▲
Surprised by bill size	63 ▲
Stops other people monitoring	22 ↓
Difficult to determine best deal	59
Spent a lot of time shopping for best deal	43 ▼
Closely monitors time on phone	49 ▼

Figure 7. Attitude data – top 2 boxes

With two-dimensional questions the only options available in the brown drop-down are **RAW DATA** and **SUMMARY**. The trick to overcoming this is to manipulate the data so that the question is no longer two-dimensional. Figure 7 shows an example of this, presenting the Top 2 box scores for the attitudes (i.e., the sum of Strongly agree and Agree a little; this can be setup in the **Variables and Questions** tab – see *Worked Example 5: Setting Multiple Response Questions*, page 48). The *Q Reference Manual* and **Online Training** contain extensive detail on how to set and change question types.

### Worked Example 1: Creating tables

The screenshot shows the Q Professional interface with the 'SUMMARY' table selected for the 'BANNER' question. The table displays the following data:

	%	%
Age	Under 35	60 ↓
	35 and over	39
Gender	Male	47 ▲
	Female	52 ▲
Current provider	Telstra	26 ▼
	Optus	38
	Vodafone	28 ▼
	Other	7 ↑
	NET	99 ↑

At the bottom of the window, the filter is set to 'Total sample' and the weight is 'None', with a base n of 725.

Figure 8. **SUMMARY** of BANNER

1. Click in the **File** menu and select **Open Existing Project...**
2. Select `Phone 1.Q`, which will be in `c:\Program Files\Q\Examples` (unless Q has been installed in a different location on your computer).  
 This project contains data on mobile phone ownership and usage. The table in Figure 8 shows the percentage of the sample in each category. For example, 60% of the sample is aged less than 35 years and 26% have Telstra as their current provider.
3. Click on the blue drop-down and select **Q6. Aided Awareness**. The resulting table shows the percentage of people who are aware of each of the mobile phone companies (e.g., 90% of people have heard of Optus).
4. Click on the brown drop-down and select **BANNER**. You have now created what is commonly known as a *crosstab* (see Figure 9). By default, this table is presenting *column percentages* (this is indicated at the top left of the table). That is, the table shows the percentage of people in each demographic group (columns) who are aware of the mobile phone companies (rows).

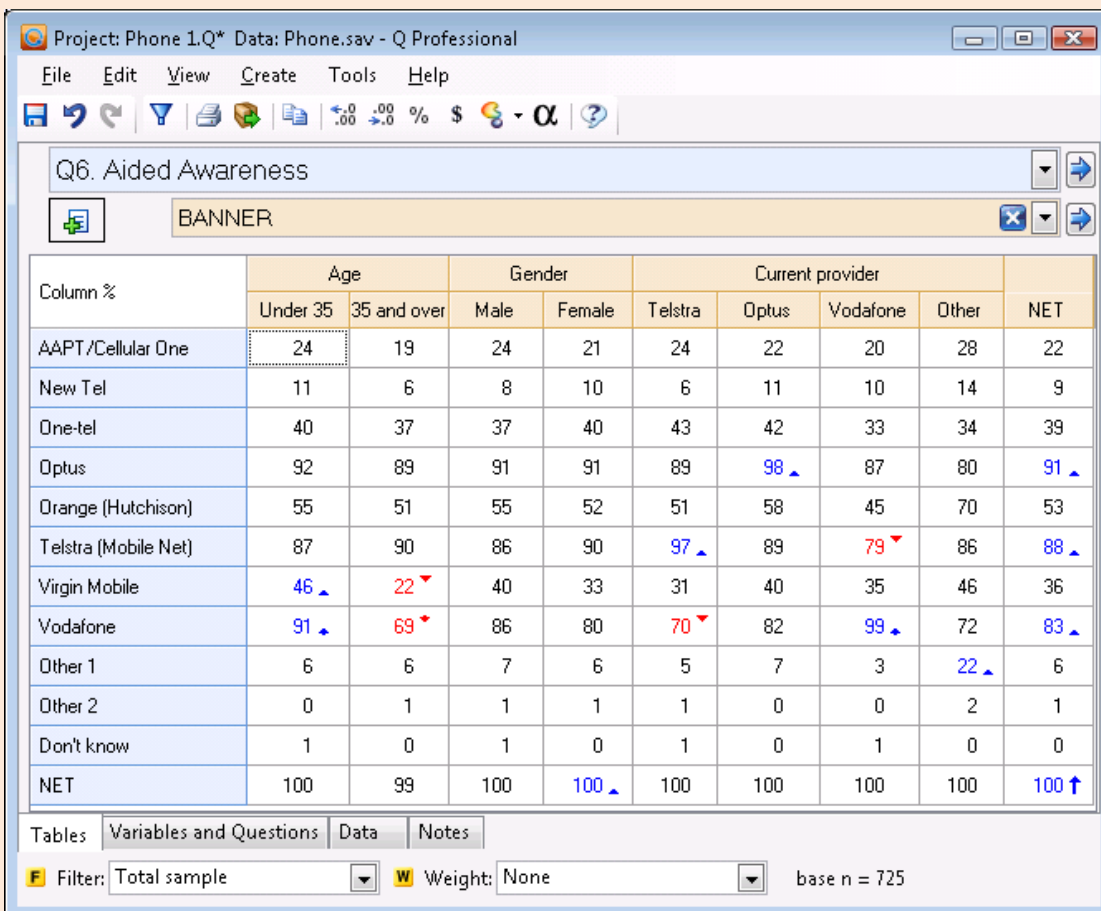


Figure 9. Aided awareness by BANNER



The blue drop-down is used to select the question that will appear in the rows. The brown drop-down is used to determine how you wish to break down the results of that question. Through the brown drop-down, you can choose **RAW DATA** (i.e., the underlying data used to construct tables), a **SUMMARY** of the information (e.g., the percentages in each category) or select another question to see the interrelationship between two questions. If you have a two dimensional question, you will only get a choice between **RAW DATA** and **SUMMARY**. If your data is text (e.g., verbatim responses from an open-ended question), you will only have the option of viewing it as **RAW DATA**, unless you change the **Variable Type** in the **Variables and Questions** tab or *code* the data (**Insert Variable(s)** ▶ **Code Text** ▶ **New Code Frame...**).

The red and blue coloring of numbers in tables can be used to quickly identify interesting results. For example, Figure 9 shows that 46% of people aged less than 35 years are aware of Virgin Mobile, while only 22% of those aged 35 years or over are aware of this brand. See page 54 for a more detailed discussion of significance testing.



## Working with tables

Q enables you to quickly and accurately modify tables to help you discover and present findings. This chapter provides an overview of the basics of using Q to manipulate tables. In this chapter you will learn how to:

- ⇒ Move and change rows and columns in tables.
- ⇒ Select different statistics to view (e.g., percentages, n, etc.).
- ⇒ Format the data.
- ⇒ Deal with missing values.
- ⇒ Format cells.
- ⇒ Create spans, grouping together rows or columns.
- ⇒ Create banner questions.
- ⇒ Customize the names of statistics on tables and plots.

### Moving and changing rows and columns

When viewing any table, you can move rows and columns by dragging-and-dropping (i.e., click on the row or column of interest and drag it to where you would like it to be). Merging is done in the same way, except that you drag one category on top of another and release your mouse button (i.e., 'drop' one category onto another).

Figure 10 shows a new version of the table first introduced in Figure 6 (if you wish to reproduce this example, open `Phone 1.Q` which will be in `c:\Program Files\Q\Examples` and select `q23`. Attitudes in the blue drop-down). It has been created by:

- ⇒ Copying the Strongly agree category and placing it immediately to the left of the original Strongly agree category (hold the **Ctrl** key down, click on the cell and drag – a small box appears saying "Copy" when you are about to copy).
- ⇒ Copying the Agree a little category onto the copy of the Strongly agree category (i.e., while holding the **Ctrl** key down, dragging Agree a little onto the copy of Strongly agree and releasing when the box saying Copy Onto appears). This resulted in a category called Strongly agree + Agree a little.



⇒ Renaming Strongly agree + Agree a little as Top 2 Boxes (right-mouse click on the category, select **Rename...**, type the new name and press **OK**). Note that there are other options available in this menu and also that the options available depend upon the data being shown.

**TIP:** These three steps could have been done more quickly by selecting the two categories, right-clicking and selecting **Create NET**.

⇒ Sorting the table by right-clicking on Top 2 Boxes and selecting **Sort By** and **Values – Descending**.

⇒ Changing the widths of the columns and heights of the rows by dragging the lines in-between the rows and the columns (as is done in Excel).

Row %	Top 2 boxes	Strongly agree	Agree a little	Neither	Disagree a little	Strongly disagree	NET
Allows to keep in touch	97 ↑	83 ↑	14 ▼	2 ▼	1 ▼	0 ▼	100
Can be contacted whenever needed	91 ↑	61 ↑	31 ▲	3 ▼	3 ▼	2 ▼	100
All friends have mobiles	87 ↑	63 ↑	24	4 ▼	6 ▼	2 ▼	100
Important to be able to contact friends whenever	85 ↑	51 ▲	34 ▲	9 ▼	5 ▼	2 ▼	100
Mobile assists personal safety	74 ▲	34 ▲	40 ▲	12 ▼	8 ▼	6 ▼	100
Calls kept short and to the point	67 ▲	33 ▲	33 ▲	14	13	6 ▼	100
More likely to change companies in the future due to number portability	67 ▲	39 ▲	28	18	8 ▼	8 ▼	100
Mobile an essential part of lifestyle	66 ▲	31	36 ▲	11 ▼	14	9 ▼	100
Surprised by bill size	63 ▲	32	31 ▲	18	13	7 ▼	100
Like look of phones	62 ▲	24 ▼	38 ▲	25 ▲	8 ▼	5 ▼	100
Only basic functions used	62 ▲	35 ▲	27	10 ▼	19 ▲	9 ▼	100
Difficult to determine best deal	59 ▲	20 ▼	39 ▲	16	16	10 ▼	100
Cost is a factor when deciding to SMS or phone	51	24 ▼	27	15	16	17	100
Large phones mean no image	51	22 ▼	29	20 ▲	15	13	100
Closely monitors time on phone	49 ▼	19 ▼	30 ▲	15	21 ▲	15	100
Technology fascinating	49 ▼	14 ▼	34 ▲	28 ▲	12	11 ▼	100
Would like to do mobile banking with phone	45 ▼	20 ▼	25	18	16	21 ▲	100
Only use mobile for essential calls	45 ▼	23 ▼	21 ▼	11 ▼	24 ▲	20 ▲	100
Spent a lot of time shopping for best deal	43 ▼	13 ▼	30 ▲	15	24 ▲	17	100
Would like mobiles to download and play music	33 ▼	18 ▼	16 ▼	19	15	32 ▲	100
Would like mobiles to work as video phones	26 ▼	13 ▼	14 ▼	19 ▲	18 ▲	36 ▲	100
Would like mobiles to download and view short videos	23 ▼	13 ▼	10 ▼	21 ▲	17 ▲	39 ▲	100
Stops other people monitoring	22 ▼	7 ▼	15 ▼	39 ▲	17 ▲	22 ▲	100
Like fast internet access on phone	22 ▼	10 ▼	12 ▼	25 ▲	20 ▲	33 ▲	100
Email used more than mobile	18 ▼	6 ▼	12 ▼	16	26 ▲	40 ▲	100

Figure 10. Attitude data




If you inadvertently merge categories, you can unmerge them by clicking your right mouse button on the category and selecting **Split** or, if you wish the categories to appear as it did prior to editing, you can select **Revert**.

### Selecting statistics (n, Row %, Column %, etc.)

Q has an expert system which automatically selects the most appropriate statistics to show on a table. Most commonly, these are percentages and averages. Alternative statistics can be shown within each cell, to the right of the table or below the table. These statistics can be selected by right-clicking on the table and selecting from within **Statistics – Cells** and, on some tables, also from **Statistics – Right** and **Statistics – Below**.

The table on the left of Figure 11 shows column percentages. It is the default way that Q displays crosstabs of categorical questions. The table on the right shows the column percentages but also shows the count in each cell of the table, **n**. The second table was created by:

- ⇒ Creating the table on the left.
- ⇒ Right-clicking the mouse on the table and selecting **Statistics – Cells** and then **n**.
- ⇒ Pressing the  button on the tool bar, which displays a percentage sign next to any percentages.

Note that the top-left of the table indicates the statistic(s) displayed on the table (e.g., **Column %, n**).

Column %	Male	Female	NET
AAPT/Cellular One	10	6	8
One-tel	22	26	24
Optus	89	90	89
Three	44	43	43
Telstra (Mobile Net)	81	86	84
Virgin Mobile	27	22	24
Vodafone	81	76	78
Other	10	7	9
NET	100	100	100

Column % n	Male	Female	NET
AAPT/Cellular One	10 33	6 24	8 57
One-tel	22 75	26 97	24 172
Optus	89 301	90 338	89 639
Three	44 148	43 162	43 310
Telstra (Mobile Net)	81 275	86 326	84 601
Virgin Mobile	27 91	22 84	24 175
Vodafone	81 275	76 286	78 561
Other	10 33	7 28	9 61
NET	100 339	100 377	100 716

Figure 11. Unaided Awareness data with various statistics selected



Figure 12 shows a table where **Average** and **n** have been selected from **Statistics – Right**.

Row %	Strongly agree	Agree a little	Neither	Disagree a little	Strongly disagree	NET	Average	n
Allows to keep in touch	83 ↑	14 ↓	2 ↓	1 ↓	0 ↓	100	1.2 ↓	716
Technology fascinating	14 ↓	34 ↓	28 ↓	12 ↓	11 ↓	100	2.7 ↓	714
Like look of phones	24 ↓	38 ↓	25 ↓	8	5	100	2.3 ↓	708

Figure 12. Attitude data with categories, averages and sample size shown

## Missing values

Q automatically filters data that have been classified as *missing values* in the raw data file.

To modify which values are automatically filtered, right-click on the blue or brown categories shown on the table, select **Values...** to open the **Value Attributes** dialog box, and ensure the appropriate categories are checked as **Missing Data**.

## Formatting cells

You can increase or decrease the number of decimal places, show percentage signs and color the background of cells to highlight interesting results by using the formatting toolbar buttons (←.00 →.00 % \$ 🌈 ↻). If you wish to set different numbers of decimal places for different statistics, right-click on the table, select **Table Options...**, click on the **Decimals Places** tab and set the number of decimals as desired. If you wish to make these changes to every table, do this via **Edit ► Project Options... ► Decimal Places**.

### Worked Example 2: Merging, Moving and Renaming Rows and Columns

1. Click in the **File** menu and select **Import New Data File (New Project)....**
2. Select the `Pasta Sauces including screenouts.sav` data file which will be in `c:\Program Files\Q\Examples` (unless Q has been installed in a different location on your computer).
3. Click **Yes** when Q alerts you that that your data has not been completely set up.
4. Click on the blue drop-down and select **Age. How old are you?** Your screen should now look like Figure 13.



Note that the brown drop-down has also changed and shows **SUMMARY**, which is the default when displaying everything that is not text.

Also note that Q has colored the numbers on the table, using blue to highlight numbers that are relatively high and red to highlight numbers that are relatively low. In this case, each number is being compared to the average.

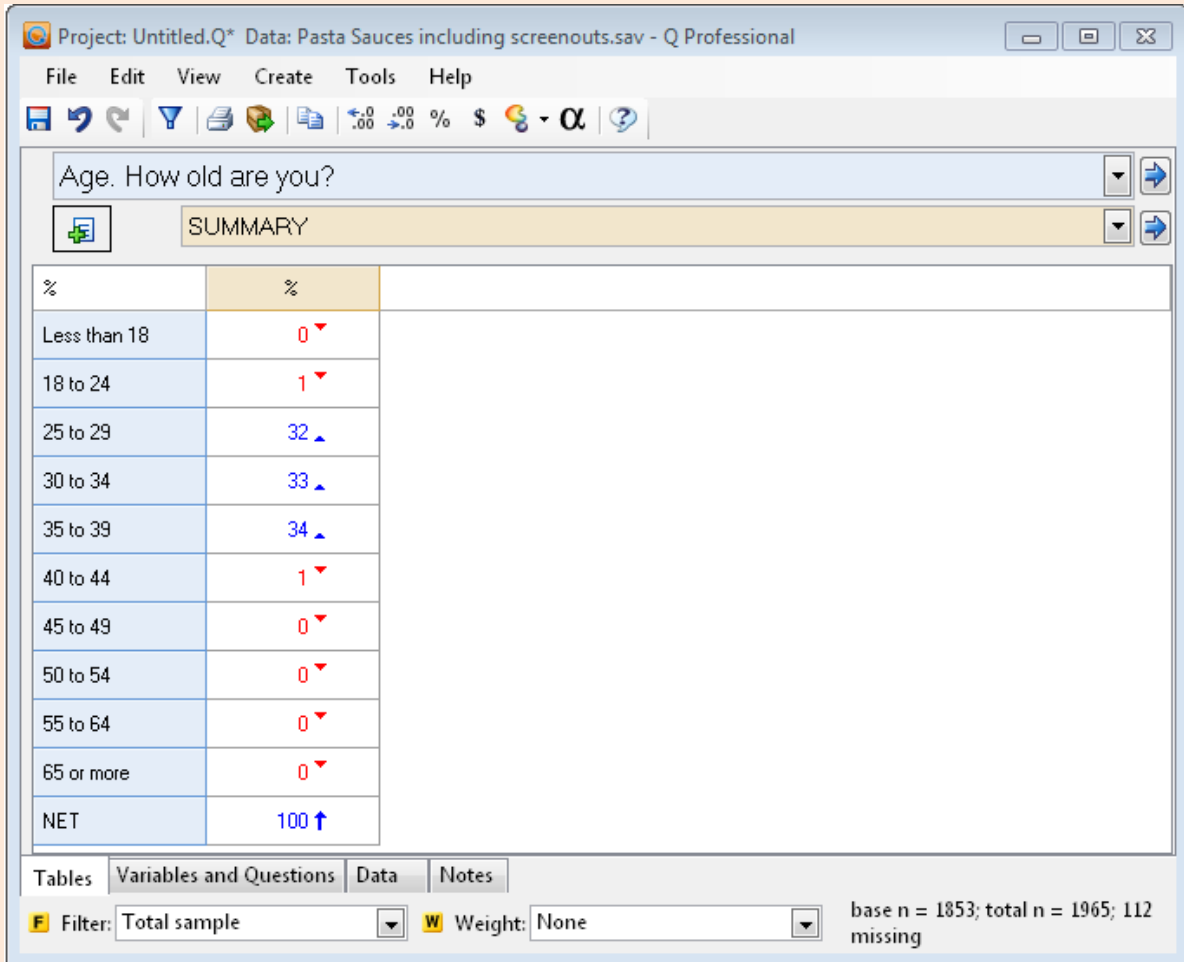


Figure 13. Frequency of age

- Right-click on the table, select **Statistics – Cells** and select **n**.
- Place your mouse on **Less than 18**. Hold down your left mouse button down and drag onto **18 to 24**. Note that a small box appears saying **Merge...** or **Move** depending upon the location of your mouse pointer. Release your mouse when the cursor is on **18 to 24** and the two categories are merged (with all the corresponding numbers automatically updated), and renamed as **18 to 24 + Less than 18**.



7. Hold your **Ctrl** button down and use your mouse pointer to click on 18 to 24 + Less than 18, 40 to 44, 45 to 49, 50 to 54, 55 to 64 and 65 or more.
8. Right-click on one of these categories and select **Merge....**
9. Type Other and press the **Enter** key on your keyboard.
10. Click on the Other row category and drag it to in-between 35 to 39 and NET. Your table should now look like Figure 14.

% n	%	n
25 to 29	32 ▲	584
30 to 34	33 ▲	609
35 to 39	34 ▲	624
Other	2 ▼	36
NET	100 ▲	1,853

Figure 14. Table with merged and moved categories

11. Right-click on the table, select **Statistics – Cells** and deselect **n**.
12. Right-click on any of the row categories and select **Revert**, which restores the age categories to how they were before you moved them around.

## Spans

Row and column categories can have one or more *spans* placed above them (see Figure 15). To create spans, first select the headings of interest (holding down **Shift** or **Ctrl** and clicking with the left mouse button), then right-click and select **Create Span....** Spans can be moved and resized by dragging and dropping.

Age		Gender		Current provider				
Under 35	35 and over	Male	Female	Telstra	Optus	Vodafone	Other	NET

Figure 15. Example of span



## Creating Banner Questions

It is often useful to combine multiple questions together so they can be selected simultaneously. For example, Figure 16 shows a table where the brown drop-down contains a *banner*, which includes age and gender.

Column %	Age		Gender		Current provider				NET
	Under 35	35 and over	Male	Female	Telstra	Optus	Vodafone	Other	
AAPT/Cellular One	9	7	10	6	7	10	5	12	8
One-tel	25	23	22	26	29	27	17 ▼	20	24
Optus	90	87	89	90	87	97 ▲	84	78	89 ▲
Three	43	43	44	43	41	47	35 ▼	64 ▲	43
Telstra (Mobile Net)	82	87	81	86	96 ▲	84	73 ▼	82	84 ▲
Virgin Mobile	32 ▲	13 ▼	27	22	20	28	23	32	24
Vodafone	89 ▲	62 ▼	81	76	63 ▼	78	96 ▲	66	78 ▲
Other	9	7	10	7	6	9	5	30 ▲	9
NET	100	99	100	100 ▲	100	100	100	100	100 ↑

Figure 16. Example of banner question (shown at the top of the table)

Such a banner is created by selecting **Create ► Banner...** and dragging the questions of interest from the left to the right of the dialog box – see Figure 17. Where questions are placed side-by-side, they will appear side-by-side in the resulting banner question. If placed on top of each other, Q will nest the questions (e.g., create a category of Males aged 18 to 24).

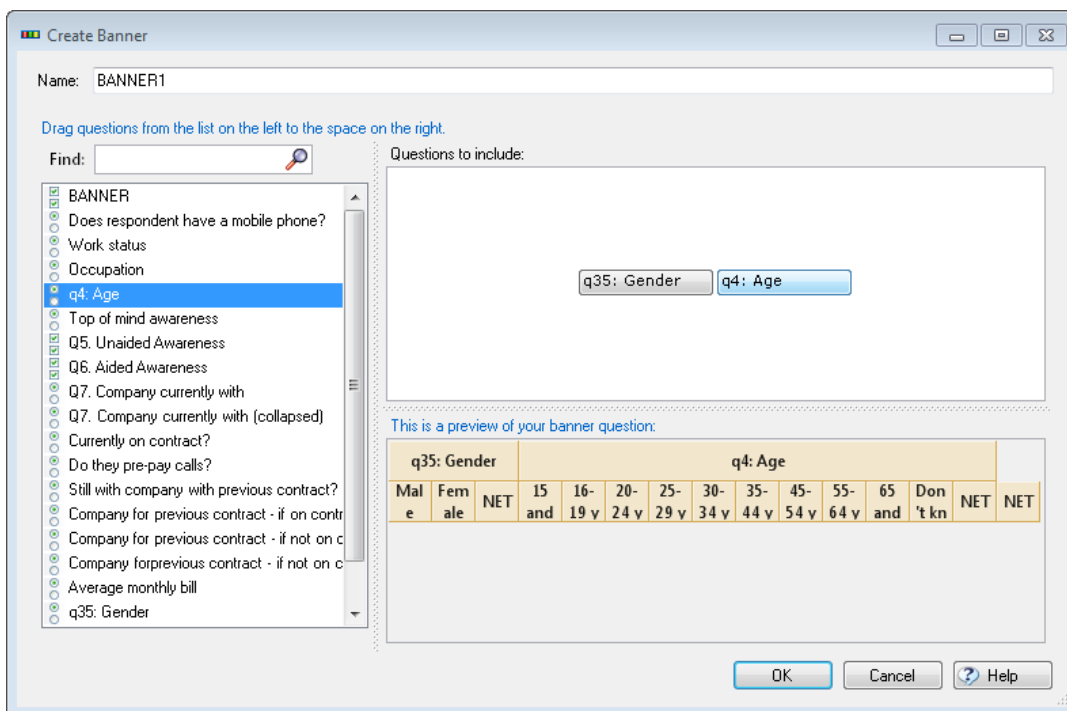


Figure 17. Create Banner dialog box



More complicated banner questions can be created using the methods described in the *Q Reference Manual*.

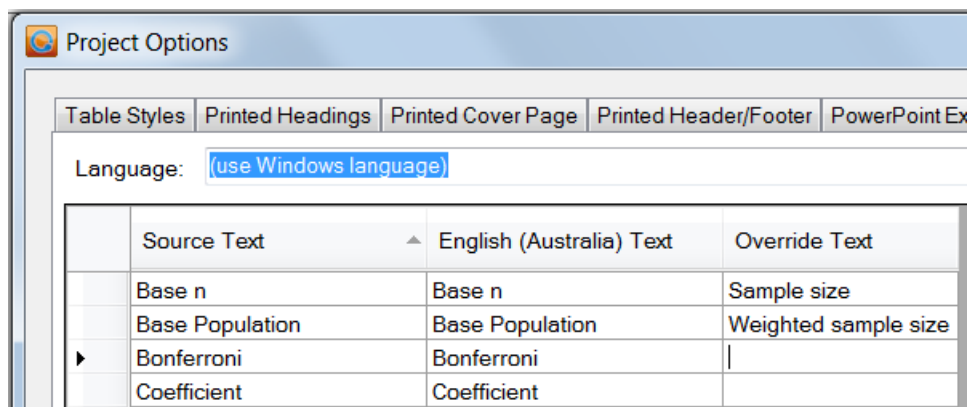
Some types of questions cannot be selected in the **Create ► Banner...** dialog box. In particular, you can only select questions that are **Pick One** or **Pick Any**. See page 46 and following for detailed information on the meaning of the different types and a worked example illustrating their uses; more information is in the *Q Reference Manual* and **Online Training**.

## Customizing the names of statistics on tables and plots

It is possible to customize the names of statistics on tables and plots. The table on the right has been customized to show statistics in the Chinese language.

相关性	净推荐值
整体满意度	.78
将来开设账户的可能性	.62
总和	.77


To customize statistics for an entire project, select **Edit ► Project Options** and click on the **Output Text** tab. Enter the desired names in the **Output Text** column, as shown below.



You can also change the text shown for selected tables by selecting **Edit ► Table Options**, clicking on the **Output Text** tab and making the changes.



## Weighting

Weights are applied in the **Weight** drop-down at the bottom of the screen. Different weights can be applied to different tables in a project. Press  to remove a weight.

In addition to the drop-down, the presence of weighting is also reflected in the sample size description at the bottom of the screen.

**base n = from 151 to 215; total n = 223; 72 missing; effective sample size = 156 (70%); 80% filtered out**

Figure 18. Sample size description with weighted data and a filter

The description in Figure 18 indicates that:

- ⇒ The sample size varies for different cells in the table, the cell with the smallest sample size being 151 while the largest cell has a sample size of 215. (We can see each cell's sample size by selecting **Base n** from **Statistics – Cells** – see *Selecting statistics (n, Row %, Column %, etc.)*, page 18).
- ⇒ The total sample size of the table is 223 (i.e., if there were no missing data, each cell would be based on a sample size of 223).
- ⇒ Each cell has up to 72 missing values (i.e., 223 minus 151).
- ⇒ The *effective sample size* is 156 (this is computed on the largest **base n** of 215). In most instances, weighting causes a decrease in the statistical significance of results. The effective sample size is a measure of the precision of the survey (e.g., even if you have a sample of 1,000 people, an effective sample size of 100 would indicate that the weighted sample is no more robust than a well-executed un-weighted simple random sample of 100 people).
- ⇒ The weighted sample size of 223 has the same precision as an un-weighted sample of 70% the size (i.e., 156 / 223).
- ⇒ The percentage shown in brackets indicates the ratio of the effective sample size to the total sample size. A score of 100% indicates that the weighting has caused no loss of precision.
- ⇒ The final statistic (80% filtered out) shows the proportion of the total number of observations in the study that is not available for the analysis due to a filter having been applied to the table.



## Weights, sample size and population

In commercial market research, weights generally have two roles: to correct for bias in the sampling (e.g., over-representation of a particular segment) and to gross up the sample size to match known population totals (e.g., the number of people in a country). Q accommodates both of these roles. When a weight is applied, all percentages and averages automatically take the weight into account. Estimates of the population size can be obtained by selecting **Population** from **Statistics – Cells**, **Statistics – Below** and **Statistics – Right**.

## Making variables available as weights

**Automatic** Any variable in the data file with the name of weight will automatically be available as a weight.

**Tagging variables as weights** Any non-text variable can be used as a weight by right-clicking on the variable in the **Data** tab and selecting **Available for Weighting**. Alternatively, check the weight tag in the **Variables and Questions** tab ( **F W H** ). This makes it appear in the weight drop-down at the bottom of the screen in the **Tables** tab.

**Creating a target weight** Any numeric or categorical variable can be automatically recoded as a weight using the *target weighting* method by:

⇒ Selecting the variable in the **Variables and Questions** tab and pressing the **Values** button ( **...** ).

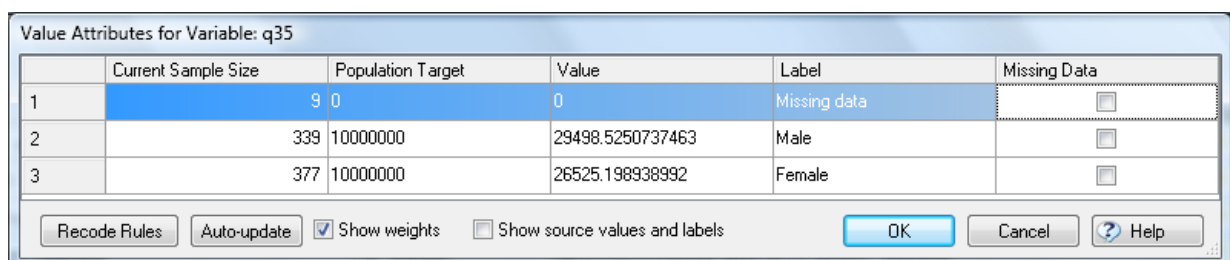


Figure 19. **Value Attributes** dialog box with **Show weights** selected

- ⇒ Ticking the **Show weights** checkbox. This causes two additional columns to appear: **Current Sample Size** and **Population Target**. The **Current Sample Size** shows the number of observations currently in each category (e.g., in Figure 19, 339 respondents are Male).
- ⇒ Entering the desired population sizes in **Population Target** cells. When the values of **Population Target** are changed, the corresponding **Value** also



changes (to the value of **Population Target** ÷ **Current Sample Size**). **Auto-update** causes the values of **Population Target** and **Value** to be updated such that if the variable is used for *weighting*, the weighted sample size (**Population**) will be equivalent to the un-weighted sample size (**n**).

⇒ Press **OK** and tag it as being available for weighting ( **F W H** ).

**Rim weighting** Multiple variables can be used to construct a weight by:

⇒ Following the procedure for target weighting for each variable that you wish to use to construct the weight.

⇒ Select all the variables.

⇒ Click the right button on your mouse and select **Insert Ready-Made Formula(s)** and **Rim Weight/Rake**.



# Filtering

It is often useful to view data for only a subset of a sample of respondents – this is called *filtering*.

In this chapter you will learn how to:

- ⇒ Create a simple filter.
- ⇒ Create a complex filter.
- ⇒ Quickly create lots of filters.
- ⇒ Apply a filter.
- ⇒ Remove a filter.

## Creating simple filters

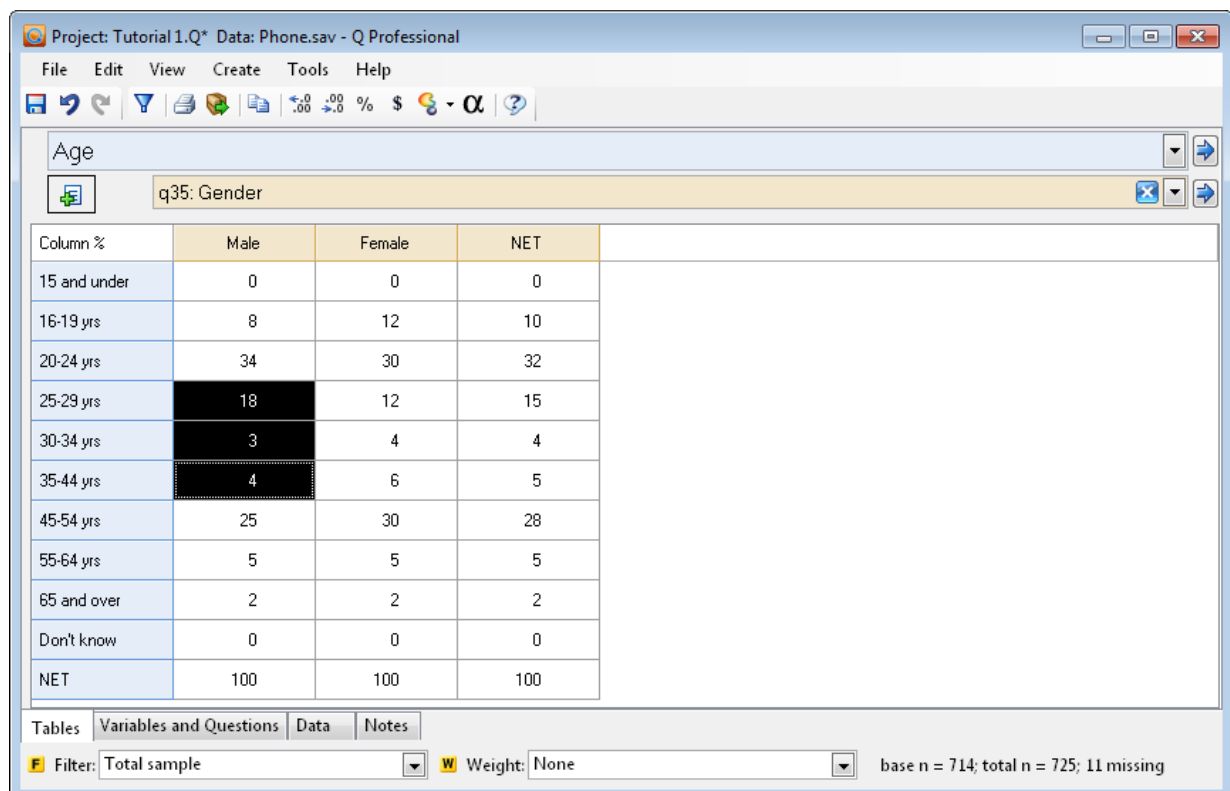

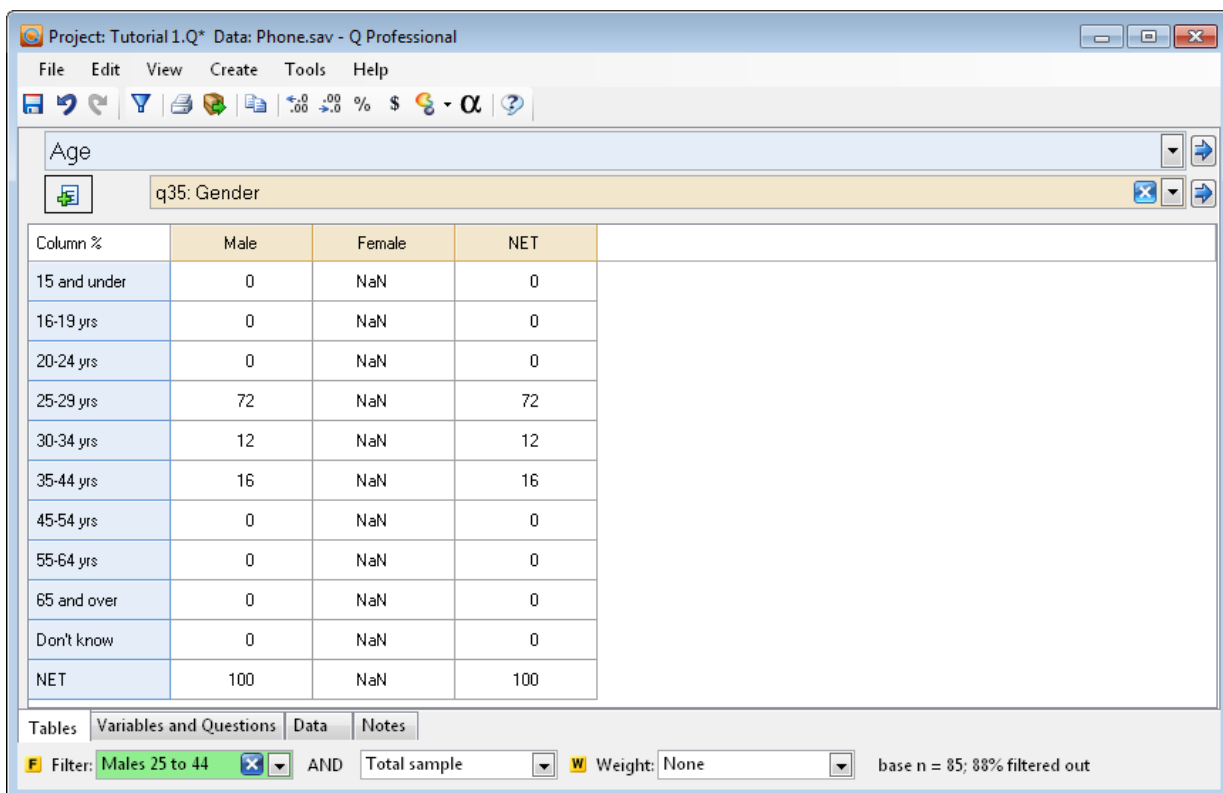


Figure 20. Selecting cells for filtering



To create a simple filter:

- ⇒ Create a table which shows the data you wish to use to construct the filter. For example, to filter the data to base analyses on only Males aged 25 to 44, you should select age and gender in the blue and brown drop-downs.
- ⇒ Select the cells representing the respondents you wish to include in the filter. For example, to filter males aged 25 to 44 select the cells as shown in Figure 20.
- ⇒ Press the **Create new filter** button (  ).
- ⇒ Enter your desired name for the filter. It is a good idea to give filters names that will be easy to recall and will be meaningful to others using Q or reading tables and charts generated by Q (e.g., Males 25 to 44 is a good name for this filter).
- ⇒ If you do not want the filter to be applied to the table you are viewing, ensure that **Apply filter to the current table** is not checked in the dialog box.
- ⇒ Press **OK**.



Column %	Male	Female	NET
15 and under	0	NaN	0
16-19 yrs	0	NaN	0
20-24 yrs	0	NaN	0
25-29 yrs	72	NaN	72
30-34 yrs	12	NaN	12
35-44 yrs	16	NaN	16
45-54 yrs	0	NaN	0
55-64 yrs	0	NaN	0
65 and over	0	NaN	0
Don't know	0	NaN	0
NET	100	NaN	100

Filter: **Males 25 to 44** AND Total sample Weight: None base n = 85; 88% filtered out

Figure 21. Table with filter applied

Figure 21 shows the table with the filter applied, with NaN in many of the cells not included in the filter. NaN means **Not a Number**; in this instance, the females have a sample size of zero after applying the filter so percentages cannot be computed.



However, zeros do appear in the column for males as the total sample for men is still greater than zero. If we now change the variables in the brown and blue drop-downs, the filter will remain selected.


## Creating complex filters

More complex filters can be created by:

- ⇒ Applying multiple filters to a table. Each time you apply a filter to a table using a filter menu at the bottom of the Tables tab, another filter menu will appear to its right so that you can easily apply further filters to the same table (in Figure 21 the first filter is Males 25 to 44, followed by AND with a second filter menu showing Total Sample).
- ⇒ Using existing variables as filters. Any variable can be made available as a filter by either clicking on the *Filter* tag in the **Variables and Questions** tab ( **F W H**). You can also right-click on the variable name in the **Data** tab and selecting **Available for Filtering**.
- ⇒ Constructing new variables as filters. This is discussed in more detail in the *Q Reference Manual* and **Online Training**. The fastest way to do this is to create a new filter in the standard way, apply it to a table, click the yellow **F** to the left of the first filter drop-down menu, right click on the highlighted variable and select **Edit Variable....**

## Quickly create lots of filters

You can quickly create lots of filters as follows:

- ⇒ Create a *Banner question*, selecting all the questions that are wanted as filters so that they are side-by-side (see *Creating Banner Questions*, page 22).
- ⇒ Press , to the right of the blue dropdown menu (which should have the newly-created banner question selected in it). This causes the variables in the banner question to be selected in the **Variables and Questions** tab.
- ⇒ Make all of the selected variables available as filters by pressing clicking on the *Filter* tag ( **F W H**). It may also be useful to hide this question (press **H**) so that it does not appear in any dropdown menus.
- ⇒ Review the **Label** column of the selected variables if you wish to reword the descriptions of any filters.




- ⇒ Right-click on any variables with the word NET appearing in the label and select **Delete Copied or Constructed variable(s)** (as having a filter which is a NET makes no sense, as it will be 100% of the sample).

## Applying filters

Once a filter has been created, it can be applied to any table using the *Filter* drop-down on the bottom left of the screen.

There are two ways of seeing that a filter has been applied. First, the drop-down displays the name of the filter with a green background. Second, the description of the sample size at the base of the screen also shows whether or not a filter has been applied (see Figure 18, page 24).

## Removing a filter

To remove a filter, go to the *Filter* drop-down and select **Total sample** or press .



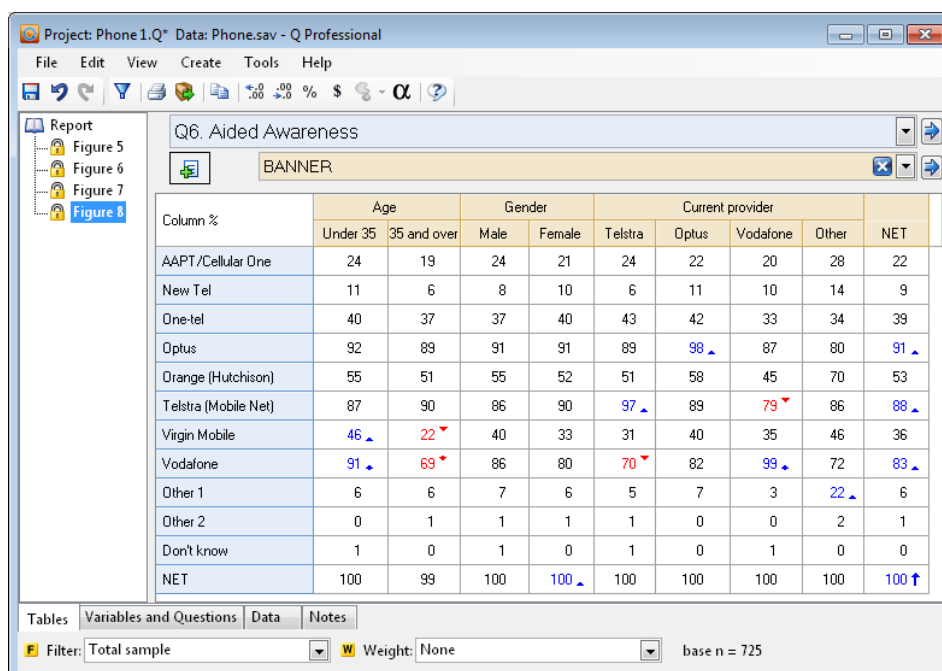
## Creating reports

This chapter provides an overview of how to produce reports of your findings. In this chapter you will learn how to:

- ⇒ Create a report, which is simply a collection of tables that you want saved.
- ⇒ Organize a report.
- ⇒ Lock tables so that they cannot be accidentally changed.
- ⇒ Change multiple tables at once.
- ⇒ Automatically generate reports.

## Saving tables

Each project contains a *Report* into which tables are saved. A report is a collection of tables that you can view at a later time. An example of a report (containing 4 tables) is shown in Figure 22. If not already visible, a report can be viewed by positioning your mouse over the left border of the screen until the arrow turns into a double-headed arrow with a line through it, then holding your left mouse button down and dragging the border out until your screen looks like Figure 22. The left of your screen will display the *Report*.



Project: Phone1.Q\* Data: Phone.sav - Q Professional

File Edit View Create Tools Help

Report

Q6. Aided Awareness

BANNER


Column %	Age		Gender		Current provider				NET
	Under 35	35 and over	Male	Female	Telstra	Optus	Vodafone	Other	
AAPT/Cellular One	24	19	24	21	24	22	20	28	22
New Tel	11	6	8	10	6	11	10	14	9
One-tel	40	37	37	40	43	42	33	34	39
Optus	92	89	91	91	89	98	87	80	91
Orange (Hutchison)	55	51	55	52	51	58	45	70	53
Telstra (Mobile Net)	87	90	86	90	97	89	79	86	88
Virgin Mobile	46	22	40	33	31	40	35	46	36
Vodafone	91	69	86	80	70	82	99	72	83
Other 1	6	6	7	6	5	7	3	22	6
Other 2	0	1	1	1	1	0	0	2	1
Don't know	1	0	1	0	1	0	1	0	0
NET	100	99	100	100	100	100	100	100	100

Tables Variables and Questions Data Notes

Filter: Total sample Weight: None base n = 725

Figure 22. A report containing one table



To add a table to the report, press the  button to the top-left of the table. This saves the current table and adds a new table immediately beneath it in the report. The new table, which is a copy of the saved table, is now displayed. The highlighted table in the *Report* indicates which table is being viewed.

## Organizing reports

By right-mouse-clicking anywhere on the report you obtain a menu that you can use to create *Groups* (i.e., *folders* to organize your report), delete tables and rename tables. Similarly, you can drag and drop tables and groups of tables to reorganize the report.

## Locking tables

Often it is useful to lock a table to prevent users from inadvertently modifying it by formatting it or changing the selections in the blue or brown drop-downs, the weight menu or the filter menu. This is done by right-clicking on the table in the *Report* and selecting **Lock** from the menu. To unlock, simply right-click on the table again and select **Unlock**.

If the data is modified, either by importing new data, recoding data or merging together the same questions in a different table, the data shown in the table will change irrespective of whether the tables are locked or not.

## Multiple selections

You can use your **Shift** and **Ctrl** keys in conjunction with your mouse to simultaneously apply operations across multiple tables at any one time (e.g., applying weights and filters, selecting questions, setting footers, locking, printing and selecting statistics).

## Hiding the Report

Position your cursor above the gray border between the table and the report and, when the double-ended arrow with the line through it appears, drag the *slider* so that the report is no longer visible (it will automatically re-appear whenever you open a project containing more than one table).

### Worked Example 3: Creating reports

1. Click in the **File** menu and select **Open Existing Project...** and open `Phone 1.Q`, which will be in `c:\Program Files\Q\Examples` (unless Q has been installed in a different location on your computer).



2. Select **Q6. Aided Awareness** in the blue drop-down, and **BANNER** in the brown drop-down.

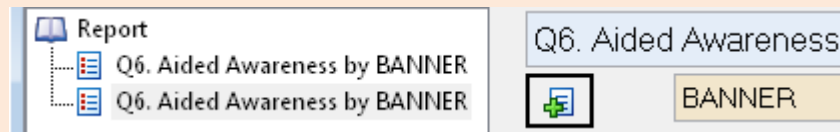



Figure 23. The Report Tree

3. Press the  button to the top-left of the table. You will see that the *Report* on the left of the screen (see Figure 23) shows two separate tables, which at the moment are identical; they are both showing Q6 by the banner question.
4. Click in the blue drop-down, type q4 and select **q4: Age**. Note that the second table in the *Report* has now changed to show q4: Age by BANNER.
5. Click on the first table in the tree. Observe how we are now viewing Q6. Aided Awareness in the blue drop-down again.
6. Position your mouse over q4: Age by BANNER in the *Report*. Right-click and select **Lock**. A padlock will now appear in the *Report* next to the table – once a table is locked it cannot be changed by the user. This prevents accidental changes to tables (but note that table content will still change if data or any question/s shown in the blue or brown drop-downs are modified elsewhere).
7. To unlock the table, right-click again over it in the *Report* and select **Unlock**.
8. Right-click on **Report**. This time, select **Add Group**. Q has created a subfolder called Group 1 into which you can organize various reports.
9. Change the name of this group to Awareness. You can add to tables to groups by dragging and dropping the tables into the group subfolder.

## Basic Tables





**Basic Tables** is a feature for automatically generating a *Report* containing a large number of tables.

*Basic Tables* are created as follows:

- ⇒ Select **Basic Tables...** from the **Create** menu.



- ⇒ Select the key questions of interest as **Key questions**.
- ⇒ If you want to cross-tabulate these questions by other profiling questions (e.g., by age and gender), select these other variables as **Profiling questions**.
- ⇒ Press **OK**.
- ⇒ If you wish the tables to contain non-default statistics, select the tables in the report and then select the desired options. For example, a table of last brand consumed by age group will, by default, only show column percentages; if you wish your table to show percentages and counts you would check each of **n**, **Row %** and **Column %**.

These tables can then either be viewed directly in Q, exported to Word, PowerPoint or Excel (   ), printed or exported as a PDF (**File ► Export to PDF...**).

## Making notes

Notes about a project can be stored in the **Notes** tab (see the bottom left of the screen).

Notes about a specific table can be stored with the table by right-clicking, selecting **Table Options...** and entering the notes in the **Notes** box.

Notes can be attached to individual variables in the **Variables and Questions** tab by right-clicking on the variable and selecting **New Comment for Variable...**

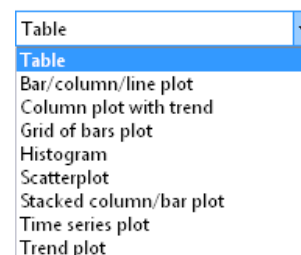


# Plots

This chapter provides an overview of how to create plots in Q. Q can also create plots using Excel, Word and PowerPoint, as described in *Export to Office* (see page 32).

## Creating a plot

A table is turned into a plot, and vice versa, using the dropdown shown on the toolbar, as shown to the right. The main plot types are shown in Figure 24.



## Modifying a plot

If you wish to merge categories or rename categories in a plot, first change it back into a table and make the desired changes.

A plot is formatted by right-clicking on the part of the plot you wish to change and selecting from the available options. If you want to change the appearance of a specific part of a plot, such as changing a series from a line into columns, first select the relevant part of the plot (by left-clicking) and then right-click to see the available options. For example:

- ⇒ To change the font of an axis, click on the axis, right-click and select **Format axis...**, and then click on the text that says **Click to change**. Gridlines are also added in this dialog box.
- ⇒ To add the values to a plot for a series, right click on the bars/lines of the series, select **Format Data Series...** and check **Label points**.
- ⇒ To specify which date periods are to be included in the columns of a *Column plot with trend*, right-click on the columns and select **Set Categorical Periods....**
- ⇒ To turn a column plot into a snake plot, create a **Bar/column/line plot**, right-click on it and select **Swap X and Y Axes**, right-click and select **Format Data Series...** and change the **Plot type** from **Column** to **Line**.
- ⇒ When creating a **Stacked column/bar plot**, the position of the bars relative to the axis is determined by the **Value** (which is set by right clicking on the relevant categories in a table and selecting **Values...**). Positive values appear

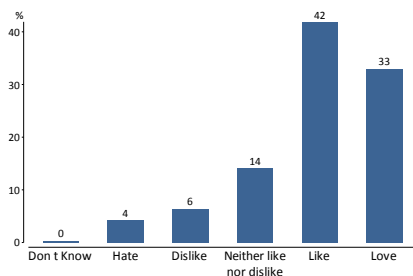


above the axis, negative below and 0 values are shown in a separate table underneath the plot.

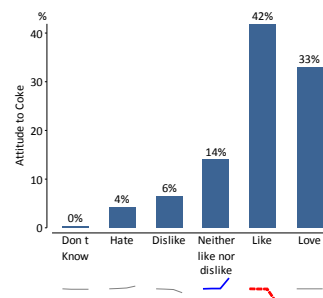
Additional information about the *Time series plot*, *Column plot with trend* and *Trend plot* is in the *Q Reference Manual*.

## Standardizing the look and your plots

Select **Edit ► Project Options ► Plots** to set default colors and fonts. You can drag a plot from one project to another and it will remember its formatting (note that if you are using the default colors, the plot will apply the default colors of the new project).



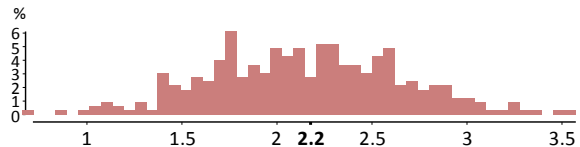
Bar/column/line plot



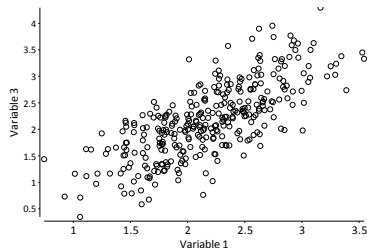
Column plot with trend

	Coca Cola	Diet Coke	Coke Zero	Pepsi	Pepsi Light	Pepsi Max
Dislike	6% ↓	29% ↑	19%	14% ↓	26% ↑	18%
Hate	4% ↓	16%	14%	10%	19% ↑	14%
Neither like nor dislike	14% ↓	19%	20%	31% ↑	27%	25%
Love	33% ↑	12%	18%	8% ↓	5% ↓	15%
Like	42% ↑	23%	24%	37% ↑	12% ↓	24%
Don't Know	0% ↓	1% ↓	5%	1% ↓	10% ↑	4%

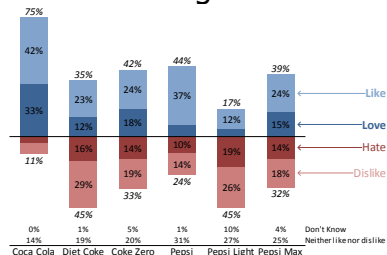
Grid of bars



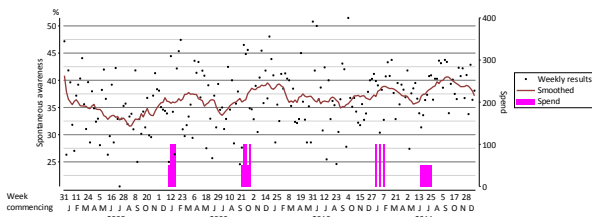
Histogram



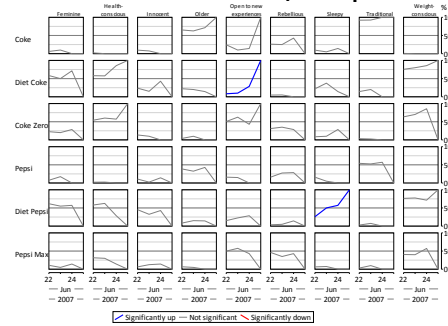
Scatterplot



Stacked column/bar plot



Time series plot



Trend plot

Figure 24. Plot types




## Generating outputs

This chapter provides an overview of different ways of producing outputs using Q. In this chapter you will learn how to:

- ⇒ Copy a table.
- ⇒ Print tables.
- ⇒ Create PDF files of tables.
- ⇒ Export a table or chart to a Microsoft Office application.

### Copying a table

Press the **Copy Table to Clipboard** toolbar button, , which copies the table into Windows' clipboard, from which it can be exported into other programs (this approach remembers no formatting and is generally only useful if the data is to be plotted or reanalyzed in another program).

### Printing tables

Select the table or tables in the *Report* which you wish to print and select **Print...** from the file menu.

Tables can be previewed using **File ► Print Preview**.

There are a variety of ways to modify the appearance of printed documents:




- ⇒ Margins and paper sizes can be set in **File ► Page Setup....**
- ⇒ Formatting options for the screen, exporting and printing are controlled using styles, which are modified at **Edit ► Project Options... ► Table Styles**.
- ⇒ Heading fonts, font styles and font sizes in printed documents and PDFs are modified at **Edit ► Project Options... ► Printed Headings**.
- ⇒ A cover page can be created in **Edit ► Project Options... ► Printed Cover Page**.
- ⇒ Headers and footers can be set in **Edit ► Project Options... ► Printed Header/Footer**. Footers for individual tables can be set by right-clicking on the table and selecting **Table Options....**



## Export to PDF

Tables and plots can be exported as Adobe Acrobat PDF files (.pdf) by selecting them and then selecting **File ► Export to PDF...** The table will be exported in accordance with the options that apply for printing (see the previous section).

## Export to Office

Tables and plots can be exported to Microsoft Office by right-clicking on tables in the *Report* and selecting **Export to Office** or by pressing the appropriate toolbar button (    ). This causes the **Table Options** dialog box to appear. The following options are available and are also remembered when you next export the tables:



- ⇒ **Name:** The name or title is read from the *Report*, which is in turn created by default from the contents of the blue and brown drop-downs (and, it is reset whenever the blue and brown drop-downs are modified).
- ⇒ **Format:** Several format options are available for exporting to Excel, Word and PowerPoint.
- ⇒ **Chart:** Several format options are available for exporting to Excel, Word and PowerPoint. If using Office 2007 or Office 2010 you can select any Word, Excel or PowerPoint chart templates you have created from this menu; consult the *Q Reference Manual* for details on using charting templates with earlier versions of Office.
- ⇒ **Styles:** Several format options are available for screen display, print format, export to PDF and export to Office. This tab can be used to customize formats for the specified table, overriding any project-wide defaults.
- ⇒ **Decimal Places:** This tab permits you to customize the number of decimal places for different types of statistics.
- ⇒ **Footer:** By default, the footer is the description of the filter, weight and sample size and is shown at the bottom of the screen (see Figure 18, page 24). However, you can customize the footer in this tab. Note that the text in the triangular brackets (e.g., <n>) will be computed based on the data in the table. At the bottom of the dialog box there is a text box preview of how your footer will look in the exported table.
- ⇒ **Restore:** this will restore all of the fields in this dialog box to their default values (i.e., their state prior to changes being made).



When multiple tables are being exported, many of the fields will be blank (because they will be different for different tables). Some patience is required when exporting batches of tables: this may take a few minutes and can appear to have “crashed” even when it has not.

Additional options for controlling the placement and formatting of objects when exporting to PowerPoint are contained in **Edit ► Project Options... ► PowerPoint Export Layout**.

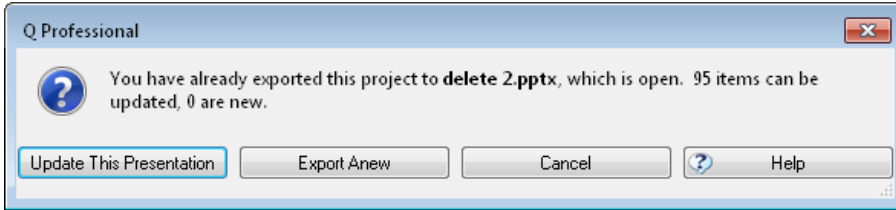
#### Worked Example 4: Exporting charts and tables

1. Open `Phone 2.Q`, which will be in `c:\Program Files\Q\Examples` (unless Q has been installed in a different location on your computer).
2. In the blue drop-down, select **Fit (out of 100)**.
3. Select **Gender** in the brown drop-down.
4. Press  to copy the table to the report.
5. Right-click on **Fit (out of 100) by Gender** in the *Report* and select **Export to Office** (alternatively you can click on the relevant button in the toolbar ).
6. Select **To PowerPoint as Excel Chart** in the **Format** drop-down menu and **3D Column Clustered** in the **Chart** drop-down menu.
7. Click **OK**.
8. PowerPoint will now open with the chart you exported in it. Edit the chart as you normally would edit an embedded Excel chart in PowerPoint (you can directly edit it in PowerPoint or open it up in Excel).

## Updating presentations

If you attempt to export to an office document into which you have previously exported, Q will ask:





By selecting **Update This Presentation**, Q replaces the existing data in the presentation with new data and updates any plots accordingly. If the plots are Q plots, they are redrawn to best utilize the space available in PowerPoint.

If you are updating cells in an Excel spreadsheet that does not contain a plot (i.e., when exporting to **PowerPoint as Excel WorkSheet**) you may need to edit the worksheet and resize it to ensure that all cells are visible.



# Creating dashboards

Q can be used to quickly create dashboards. A *Q Dashboard* is a project created in Q and then uploaded onto the 'cloud'. In this chapter you will learn how to:

- ⇒ Prepare a project for use as a dashboard.
- ⇒ Insert images.
- ⇒ Upload a project.
- ⇒ Manage the dashboard, company and users.

## Preparing a project for use as a dashboard

Any Q project can be used as a dashboard. By default, groups of tables and plots (i.e., folders) appear as tabs in a dashboard. Any tables or plots that are not in a group will not be visible.

- Tables and plots
- Examples
- Line plots
- Column and bar plots

If you have groups appearing within other groups, such as is shown to the left, then they will appear as nested tabs in the dashboard (as shown on the right).



You can hide a group so that it does not appear in a dashboard by putting the word `private` at the beginning of its name (e.g., `private Weighting tables`).

If you wish to have some tables or plots grouped together such that they are surrounded by a border by putting them into a group and adding the word `group` to the beginning of the group's name (e.g., `group Brand health`).

The fastest way to quickly prepare a dashboard is to create lots of tables using **Create ► Basic tables...** (see page 33) and then select all of these tables in the *Report* tree, changing them from a table to the plot type **Grid of bar plots** (see page 35).


**Filters** The most straightforward approach to creating filters for a dashboard is described in *Creating simple filters* (page 27). If you choose to create filters in another way, it is important that any filters that require an OR operation (e.g., 18 to 24 OR 25 to 34) are contained within the same **Pick Any** question and share a *span* (this occurs by default when you used the method approach described in *Quickly create lots of filters*, page 29).

## Inserting images

Sometimes it is useful to insert images into a dashboard, such as plots from other programs and PowerPoint slides saved as pictures (e.g., saved as GIF files).

Images are inserted into a Q project by selecting **Create ► Image...** and selecting the desired image. These can be changed by pressing **Swap Image...**. A hyperlink can be created for the image by selecting **Edit ► Image options...** and filling in the **Hyperlink** field.

## Uploading a project

Upload a project onto a dashboard by selecting **File ► Share as Dashboard** and following the prompts. You can layout the images on the tab by clicking on them and dragging. Press  to save the layouts.

## Managing the dashboard, company and users

When viewing a dashboard press [Manage dashboard](#) to set and view basic settings for the dashboard and press [Company settings](#) to set and view settings for all your dashboards (e.g., to setup additional login details for other users).




## Data manipulation and preparation

This chapter provides an overview of different types of questions that can be analyzed in Q and alternative ways of manipulating and preparing data. In this chapter you will learn about:

- ⇒ Viewing and exporting raw data.
- ⇒ Editing raw data.
- ⇒ Creating new variables.
- ⇒ The different types of *Questions* used by Q
- ⇒ Setting question types.
- ⇒ Changing question types.
- ⇒ Advanced ways of constructing variables.

### Reviewing summary statistics

Pressing  on the **Variables and Questions** tab toggles on and off columns containing the minimum, mean, maximum and sample size for every variable.

### Raw data

The underlying data of any question can be viewed by selecting the question in the blue drop-down menu and selecting **RAW DATA** in the brown drop-down menu. This can be copied into other programs.

Alternatively, variables can be exported into Excel by selecting the relevant variables in **Variables and Questions** and selecting **File ► Export Selected Variables to Excel....**

### The Data tab

All the underlying data for a project can be viewed by clicking on the **Data** tab at the bottom left of the screen – see Figure 25. Each row represents the data for a respondent. Each column represents a variable, with the **Name** of each variable shown at the top. The black lines above the variable names indicate how the variables are grouped into questions (these groupings can be changed in the **Variables and Questions** tab – see *Setting questions*, page 48).



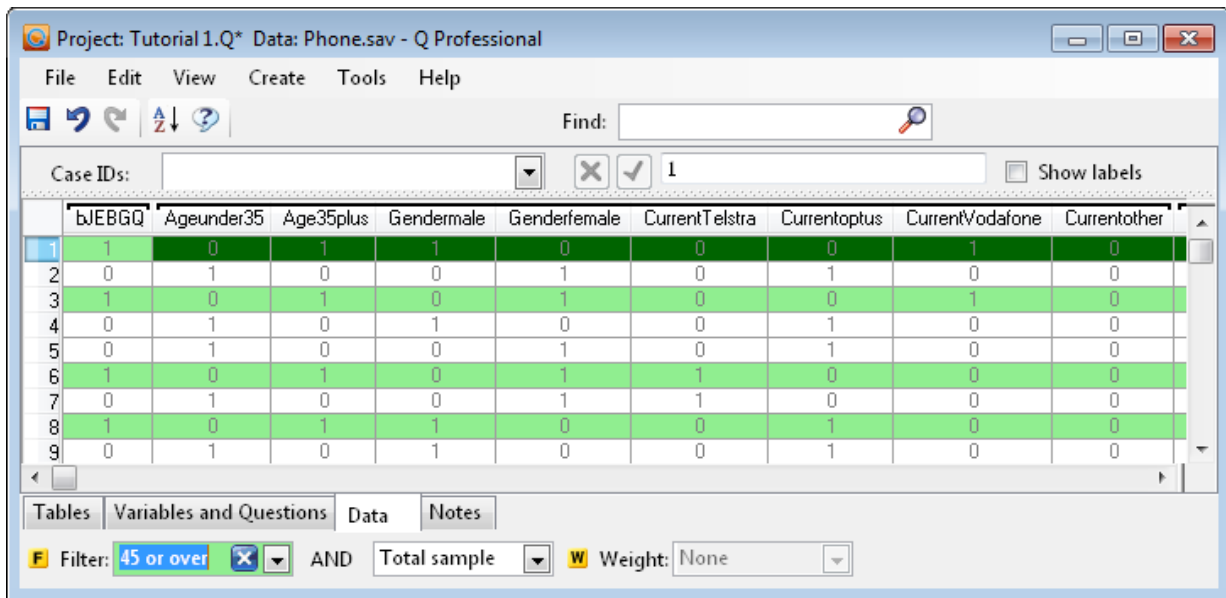


Figure 25. Data tab

If a cell in this tab is clicked, it is shaded light blue and the rest of the row is shaded dark blue.

**Case Identifiers** In order for Q to remember any data changes you make, you first need to select a variable that contains a unique identifier for each respondent, such as the respondent ID. Q will use this if your raw data file changes, thereby ensuring that your work is retained even if you update your data. Select this unique identifier using the **Case IDs** drop-down at the top left of the screen.

**Filtering** When a filter is applied the selected rows are shaded green.

**Sorting** Right click on a column header and select **Sort Data by This Column** to sort by that column. Alternatively, select **Sort...** from the **View** menu to sort by more than one column. To remove all the sorts: select **View ► Sort...** and **Delete Level**.



**Value Labels** Tick the **Show labels** checkbox at the top right of the screen to show the **Value Labels** instead of the values in each cell.

**Editing the data** You can change the data by clicking in a cell and typing a new value into the cell, or, by changing the data shown in the *formula bar* at the top of the screen. This is only a good approach when correcting errors – recoding of data is better done using various procedures in the **Variables and Questions** tab. See *Setting questions*, page 48, and the *Q Reference Manual* for more detail.



Hover your mouse over any cell and a tool-tip will appear showing original values, labels, etc.

**Creating new variables** New variables can be created using other variables by right-clicking on one of the variable names, selecting **Insert Variable(s) ► Excel-Style Formula** and either **Numeric** or **Text**. If you require any statistical analysis, then you should select **Numeric**.

As the name suggest, Excel-style formulas in Q are basically the same as formulas in Excel. Each formula begins with an equals sign. Formulas may contain text, numbers or variable names. The variable names can be either typed into the formula or selected by clicking on the variable names. When a formula is complete, press **Enter** or press . To cancel, press **Escape** or press . Examples of formulas:

```
=Q2+Q7
=1-AVERAGE(Q3,Q4,Q5)
=IF(Q1="M", 1, 2)
```

Look up **Excel-Style Formula** in **Help ► Data Tab** for a full list of the functions that can be used in formulas.

**Warning:** In Excel, blank cells are ignored by most formulas. In Q, a blank cell in the **Data** tab represents missing data, and many formulas will return a NaN if they refer to the cell (e.g., SUM).

A more powerful, but more complicated, approach to creating new variables involves the use of *JavaScript* – see the *Q Reference Manual* for more detail.

**Find Variable** To find a specific variable, select **Edit** and **Find Variable....** You can identify the variables and values used to construct any question by right-clicking on a category of a table selecting **Show Variables and Values....**

**Inserting variables** In general, the best way of inserting additional variables into a project is to modify the data file and re-import the data file (see *Updating tables with new or revised data*, page 52). However, it is possible to insert new variables by right-clicking on one of the variable names and selecting **Insert Variable(s) ► Paste Data (e.g. From Excel)**. The number of entries you paste must match the number of cases in the raw data file.

**Delete cases** Right click on the row and select **Delete Row**. This takes a surprisingly long amount of time as Q checks the consequences of the deletion on every variable and every table in a project, so it is often better to create a new filter and, in the **Data** tab, apply the filter, then right-click and select **Delete Rows**



**Matching Filter (Green).** If deleting large amounts of data, it is often advisable to delete them in the data file.

**Splitter** Click and drag the short vertical line at the end of the horizontal scroll bar at the bottom of the screen. This splits the sheet so that you can simultaneously view the data of non-adjacent variables.

## Question Types

The way that Q presents data is determined by the underlying **Question Type** of the data.

Question Type	Description	Example																
<b>a Text</b>	Each observation in the data file contains text.	What is your name? _____																
<b>a a Text – Multi</b>	Multiple related fields of text for each observation in the data file.	Please type in the names of your three favorite soft drinks  1.____ 2. ____ 3.____																
<b>o o Pick One</b>	A set of mutually exclusive and exhaustive categories (i.e., <i>nominal</i> or <i>ordinal</i> scales).	Are you...  <input type="checkbox"/> Male <input type="checkbox"/> Female																
<b>o o o Pick One – Multi</b>	A series of <b>Pick One</b> questions sharing the same scale points.	Please rate your satisfaction with the following banks  <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>Low</td> <td>Med</td> <td>High</td> </tr> <tr> <td>Westpac</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>ANZ</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>St George</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>		Low	Med	High	Westpac	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ANZ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	St George	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Low	Med	High															
Westpac	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
ANZ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
St George	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<b>2 Number</b>	A numeric variable (i.e., <i>interval</i> or <i>ratio</i> scale).	How many glasses of wine did you drink last night? ____																
<b>2 2 Number – Multi</b>	A series of numeric variables measured on the same scale.	Next to the brands below, please indicate how many times you have purchased them in the past week  Coke ____ Pepsi ____ Fanta ____																



**Number – Grid**

A question requiring numeric responses, where the variables can be thought of as being ordered in two dimensions (e.g., a **Number – Multi** question asked in a loop).

In the past month, how many economy flights did you take on...  
 Qantas \_\_\_ United \_\_\_ SAS \_\_\_  
 In the past month, how many business class flights did you take on...  
 Qantas \_\_\_ United \_\_\_ SAS \_\_\_

**Pick Any**

What is usually referred to in market research as a multiple response or multi question. Respondents are asked to pick all that apply from a list of options. **Pick Any – Compact** is question type that contains the same information, but stored in a more compact format (see the *Q Reference Manual*).

Which of the following have you bought in the past week?

Coke       Pepsi       Fanta

**Pick Any – Grid**

A set of binary variables that can be thought of as being ordered in two dimensions (e.g., a **Pick Any** question asked in a loop).

Which of these brands are cool?  
 Coke       Pepsi       Fanta  
 Which of these brands are young?  
 Coke       Pepsi       Fanta  
 Which of these brands are sexy?  
 Coke       Pepsi       Fanta

**Date**

A question containing a date.

What is your date of birth?  
 \_\_\_ / \_\_\_ / 19\_\_\_

**Ranking**

Multiple numeric variables that represent a ranking, where the highest number is most preferred and ties are permitted.

Rank the following brands according to how much you like them...  
 Coke \_\_\_ Pepsi \_\_\_ Fanta \_\_\_



- X **Experiment** A **Number, Number – Multi, Ranking, Pick One** or **Pick One – Multi** question, where the alternatives presented were varied using an experimental design.

Which of these would you buy?

Coke	Pepsi	Fanta
\$2.00	\$4.20	\$3.20
Can	Bottle	Flask

## Setting questions

Questions may consist of one variable (e.g., age) or multiple variables (e.g., aided awareness of multiple brands). Q is structured around questions and it automatically takes into account the different types of questions. However, often data files are not well set up and it is necessary to inform Q as to which variables should be combined to form questions.

You can instruct Q to turn sets of variables into questions using the **Variables and Questions** tab, located on the bottom left of the screen. An example is shown in *Worked Example 5*. The *Q Reference Manual* and **Online Training** contain many other methods for constructing different types of variables and questions, including *binary variables*, *categorical variables*, *text variables* and *coding* of text variables.

### Worked Example 5: Setting Multiple Response Questions

1. From the **File** menu select **Import New Data File (New Project)...** and select `Phone.sav`, which will be in `c:\Program Files\Q\Examples` (unless Q has been installed in a different location on your computer).
2. Click **No** when asked if Q should automatically set up the file (ordinarily, one should select **Yes**).
3. Click on the **Variables and Questions** tab (bottom left).
4. Select rows 7 to 17.
5. Right-click and select **Set Question...** Note that Q has made an educated guess about the name of the question and the appropriate **Question Type**, both of which can be changed by the user.
6. Press **OK**. Note that for this question only the first row of the **Question** column is in bold; the rest are in grey, indicating that they are all part of the same question. The **Status** column will be marked as **Check**, in yellow, which is Q's way of informing that it has made some assumptions about which values should be



- counted (e.g., to count the 1s). These assumptions can be checked by clicking the down-arrow to the right of the word **Check**, or by clicking the **Values** button (...), and reviewing the selections in **Count This Value**.
7. Double-click on one of the row numbers of the newly created question and you will see a summary table of the newly created multiple response question (Q refers to such questions as being **Pick Any**).
  8. Go back to the **Variables and Questions** tab.
  9. In the **Find** box at the top of the screen enter q23, which causes Q to scroll down to the first row containing this search term.
  10. Select rows 207 to 231.
  11. Right-click and select **Set Question...** . A message will appear, warning that the variables are fundamentally different (the reason for this is explained below).
  12. Click **Yes** and change the question name to Attitudes. Note that this time Q has determined that the **Question Type** is **Pick One – Multi**.
  13. Press **OK** and click on any one of the **Values** buttons, clicking **Yes** when again warned that the variables are “fundamentally different”. Your screen should now look like Figure 26.
  14. Figure 26 reveals that the data is ‘messy’, with values of 6 and 22 being included without any labels (it was this that prompted the earlier warnings). Check as **Missing Data** each of 6, DON’T KNOW and 22 and press **OK**.



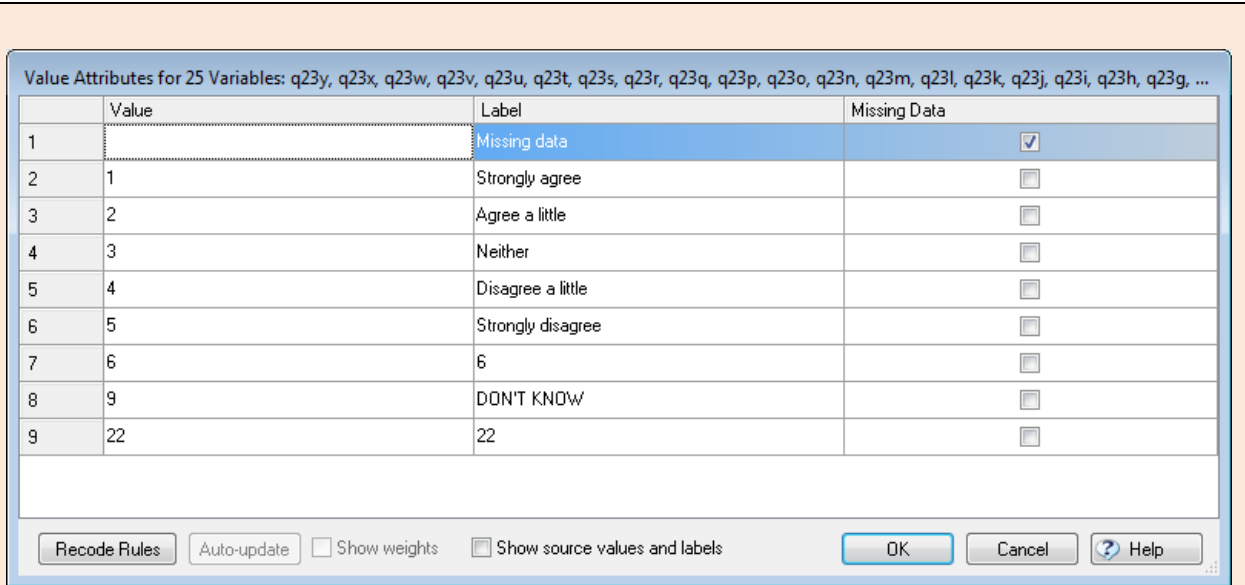





Figure 26. Value Attributes dialog box

15. Double-click on one of the row numbers of the newly created question to see a summary of the question in the **Tables** tab.
16. Right-click on any of the row or column headings and select **Duplicate Question**, which takes a copy of the question.
17. Press **OK** to continue using the name Q has selected for this question.
18. Press the  button to the right of the blue drop-down menu. This automatically takes you to the **Variables and Questions** tab and selects the question being viewed.
19. Rename the question by entering Attitudes – Top 2 boxes into any of the cells in the **Question** column.
20. In the **Question Type** column, change **Pick One – Multi** to **Pick Any**.
21. Click on the **Values** button, select **Yes** twice and ensure that the only categories checked as **Count This Value** are Strongly agree and Agree a little.
22. Press **OK** and click on the **Tables** tab to review the question. The table is now showing the *top 2 box* percentages.
23. Press the  button to the right of the blue drop-down menu.
24. Rename the question by entering Attitudes – Out of 100 into any of the cells in the **Question** column.



25. In the **Question Type** column change to **Number – Multi**.
26. Click on the **Values** button, select **Yes** and change the **Values** so that from Strongly agree through to Strongly disagree have values of 100, 50, 0, -50, and -100. Press **OK**.
27. Double-click on the row numbers to view the resulting table on the **Tables** tab. Note that the table is now showing averages.

## Undoing a question

Sometimes a question will have been set up in such a way that it is not clear what the question means. You can view the original variable labels (the *source labels* read from the raw data file) in the **Variables and Questions** tab by pressing  in the toolbar, which causes a new column, **Source Label**, to appear between **Name** and **Label**. Requires Q  
Professional

To change variable labels back to their original labels, right-click on the variables of interest and select **Revert to Source Label** (this option will only appear if the **Source Label** and the **Label** are different). To undo the setup of a question in entirety, select all variables in the question, then right-click and select **Revert to Source**.



# Sharing and updating projects

## Sharing projects

You can share projects with others by using the **Send Pack** function in the **File** menu. A *Q Pack* uses the file extension `.QPack`, and is made up of the raw data file (`.sav` or `.csv`) and the *Q Project File* that contains the data manipulations and analysis. The `.QPack` file has automatically been compressed to allow easy transfer.

There are two options available within **Send Pack**:

- ⇒ **Via E-Mail...**: Selecting this option will create a new e-mail in your default e-mail program. The `.QPack` file will automatically be attached to the newly created email, leaving the fields blank for you to fill in.
- ⇒ **Save as File...**: This option allows you to save the `.QPack` file to a chosen location on your computer.

As long as the user who receives the pack has Q installed, they will be able to double-click on the file to open the project. If the user chooses to save the project using **Save Project** or **Save Project As...** in the **File** menu, they will be advised that Q must break the pack into two separate files; a *Q Project File* and a raw data file (`.sav` or `.csv`). The `.QPack` file will then be separated and the two files will be saved separately.

## Updating tables with new or revised data

A report will automatically update whenever you make changes to the underlying data, for example by importing a new data file. You can update any report with new or revised data by selecting **Import Updated Data File (Current Project)...** from the **File** menu.

If the updated data file does not contain variables that have been used to construct other variables and filters in the Q project, Q will alert you by marking the “broken” variables with an **INVALID Variable Status**; an example is shown in Figure 27. The drop-downs can be clicked on to obtain more information about the problem. If you are happy to proceed with importing the updated data, press **Accept** and review the contents of the **Status** column on the **Variables and Questions** tab.



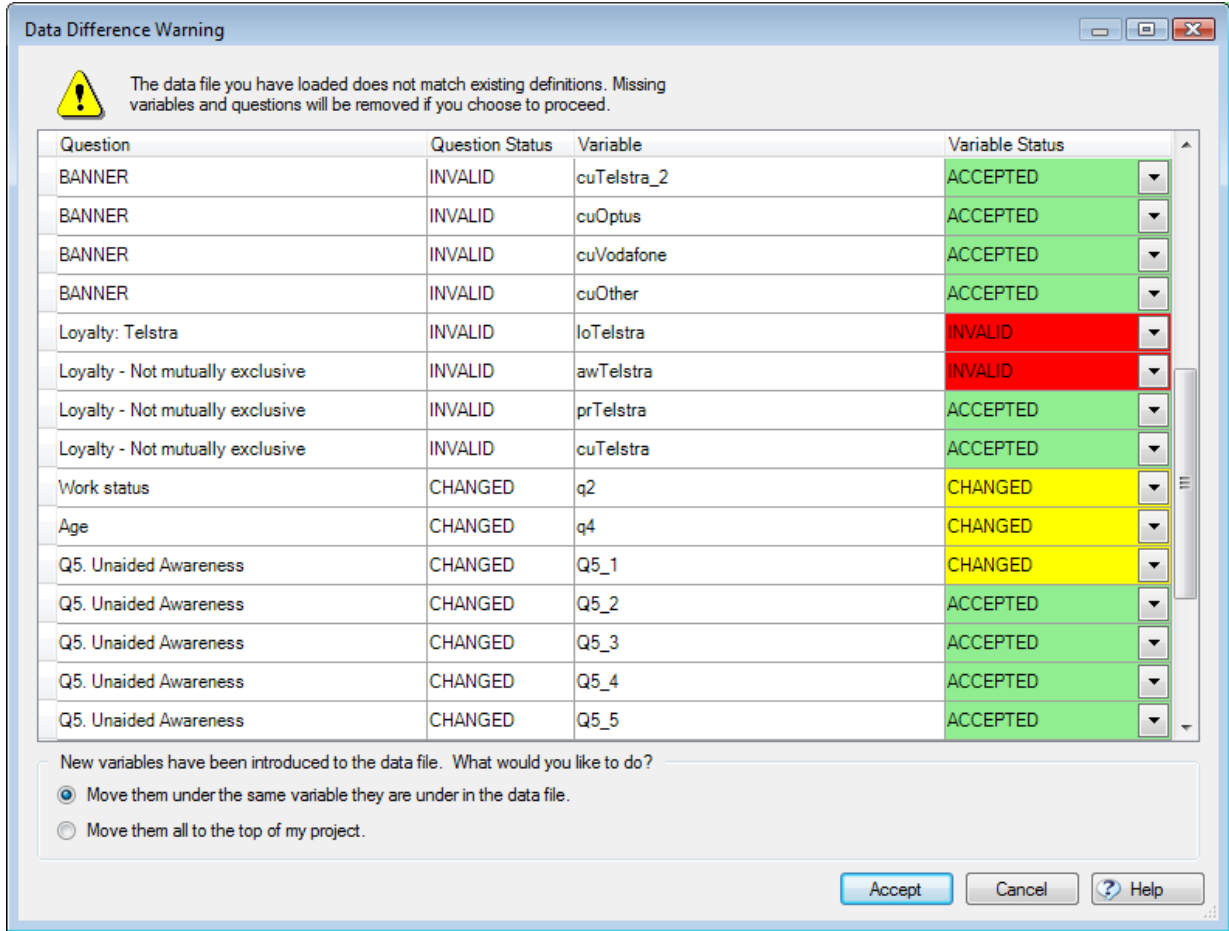


Figure 27. Data Difference Warning example



## Tests of statistical significance

Q automatically highlights statistically significant results with font color and arrows. By default, results that are significantly high are shown in blue and results that are significantly low are shown in red. For example, Figure 28 shows that respondents under 25 are more likely to be in the Optus category than respondents not under 25 (and, equivalently, Optus respondents are relatively more likely to be under 25 than are non-Optus respondents).

Column %	Under 25	25 to 44	45 or more	NET
Optus	49 ↑	35	28 ↓	38
Vodafone	30	35	22 ↓	28
Telstra (Mobile Net)	15 ↓	23	43 ↑	26
Other	7	5	7	7
NET	100	100	100	100
n	303	166	246	715

Figure 28. Significance testing example

### Using 'traditional' tests of statistical significance

The default tests of statistical significance employed in Q are conservative, which means that they are designed under the assumption that it is much better to say nothing at all than to report a result that has a non-trivial chance of not being found if the study were repeated. To use the traditional approach to significance testing used in market research – which is *not* recommended – select **Edit ▶ Project Options ▶ Statistical Assumptions...** and select **Traditional (planned)** as the **Multiple comparisons method** (the recommended method is **False Discovery Rate**). An explanation of the different methods is contained in the *Q Reference Manual*.

You may also specify different assumptions only for selected tables or plots by selecting **Edit ▶ Plot/Table Options ▶ Statistical Assumptions....**

### Column comparisons (pairwise comparisons)

Statistical tests comparing differences between columns using letters are available by right-clicking on a table and selecting **Statistics – Cells** and **Column Comparisons**.



## Planned tests of statistical significance

The automated significance tests in Q (i.e., font color and arrows) are all tests comparing a single cell with the rest of the table. Sometimes, it is interesting to conduct tests of multiple cells. For example, we may wish to know whether, overall, there is a relationship between age and brand in Figure 28. To conduct such a test we highlight all the cells in the table and press the  $\alpha$  button, which automatically selects an appropriate significance test and performs this test on any cells selected in a table. Similarly, if we only wish to test a proportion of the table, (e.g., to assess if Telstra customers are of a different age distribution to Optus customers) select the cells of interest and press  $\alpha$ . It is always essential to review the `Null hypothesis` to ensure that the test that Q has conducted is the one that you would consider to be appropriate.

## Statistical testing with weights

Q uses weighted data when computing significance tests. On most tables, a weight is taken into account using *Taylor series linearization*. In other instances, the weight is scaled so that its sum equals the *effective sample size*. More detail is provided in the *Q Reference Manual*.

Q can also weight the data in accordance with the standard approach used in most market research software; this is done by selecting **Edit ▶ Project Options ▶ Statistical Assumptions...** and setting the **Sample scaling constant** to 1. This causes the sample size used in significance testing to be equivalent to the sum of the weights. If the weights are set to have an average of 1.0 the statistical tests assume a sample size equal to the observed sample size (which has the effect of exaggerating the precision of most surveys). If the weights are set so that the sample is grossed up to the population, it is advisable to use Q's default approach (**Compute from effective sample size**) or to set a more appropriate sample scaling constant (e.g., the sum of the weights divided by the population size).



## Smart tables

Sometimes it is useful to compare the statistical significance between one key question and a variety of other questions. For example, we might wish to understand the relationship between brand choice and an assortment of demographic questions. This process is automated using *Smart Tables*, as follows:

- ⇒ Create a table by selecting the question of interest (i.e., the *dependent question*) in the blue drop-down menu.
- ⇒ Select **Create ► Smart Tables....** The **Smart Tables** dialog box will appear – see Figure 29.

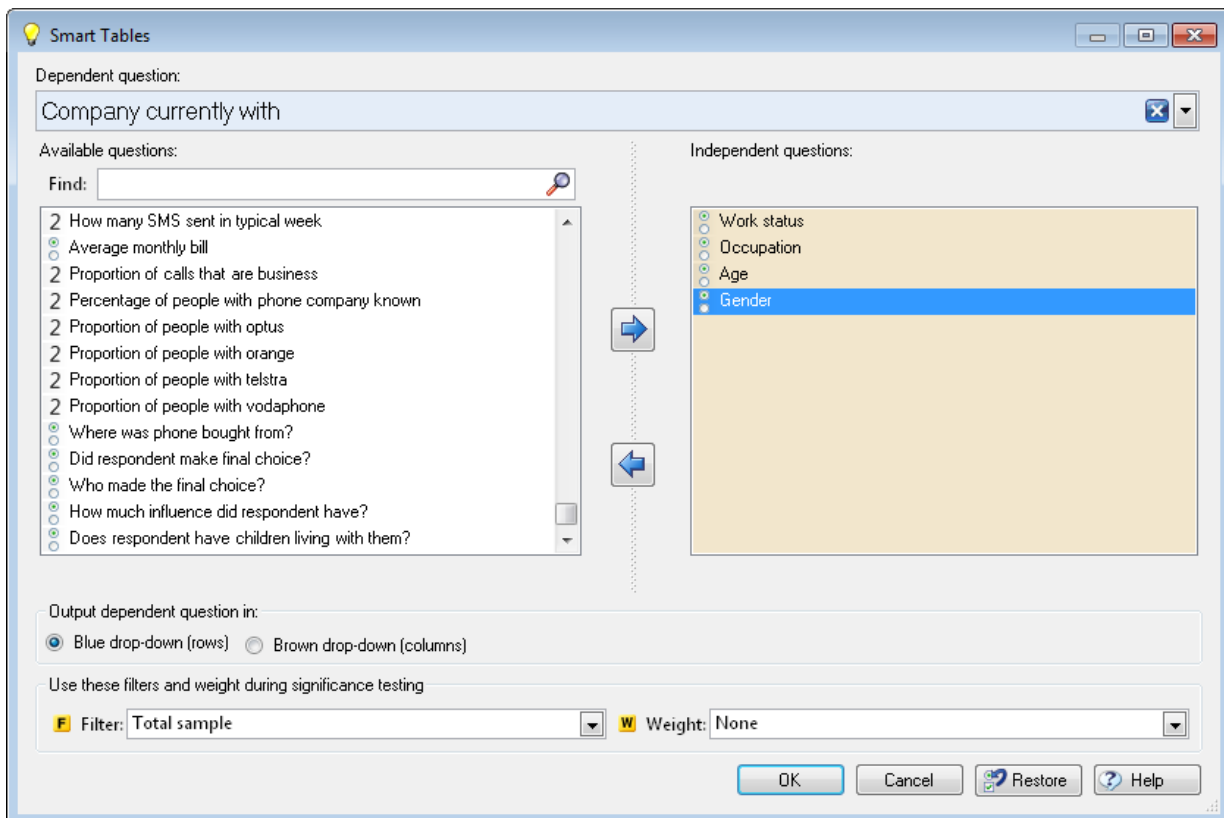




Figure 29. Smart Tables dialog box

- ⇒ Select the questions to compare against by clicking on them in the list of questions on the left and pressing the  button. Some types of questions cannot be used in *Smart Tables* (text questions, two dimensional questions and **Pick One – Multi** questions). This is because it does not make sense to use such questions; they can be converted into more appropriate types of questions and then used – see **Online Training**.



⇒ If you are having difficulty identifying the questions you wish to compare against, you can type some characters into the **Find** box. Q will automatically identify questions with labels containing the characters you have typed. To find the next question with a label containing the characters you have typed, press .

The *Smart Tables* output is a set of tables, appended to the *Report*. The tables form a part of a *Group* named after the *dependent question* (with Smart Tables affixed at the end; e.g., Q7. Company currently with: Smart Tables – see Figure 30). Within this *Group* there are two sub-groups – one called Significant ( $p \leq 0.025$ ) which contains questions which were significantly related to the *dependent question* and another showing the insignificant questions. The cut-off  $p$ -value is determined by the settings of the **Significance level** and **Multiple comparisons method** – see the *Q Reference Manual*. Within each group, the tables are ordered according to their  $p$ -values.

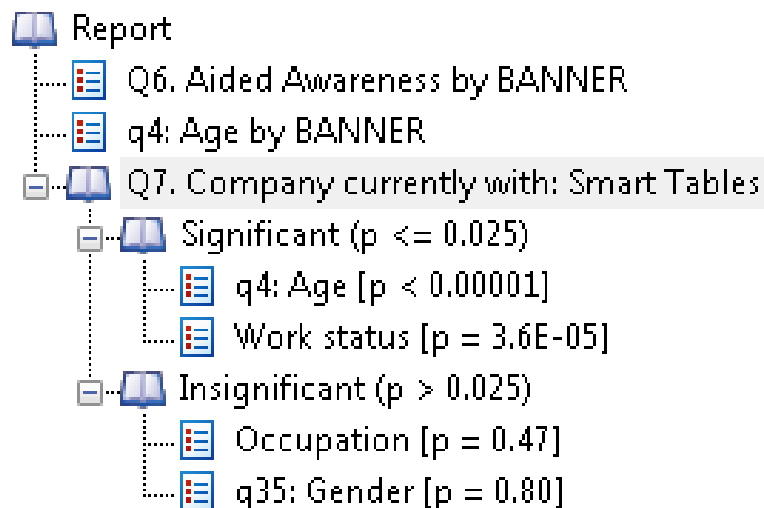


Figure 30. Smart Tables output



## Maps

Select **Create** and **Map...** to create a *correspondence analysis* map of a table. An expert system selects the appropriate correspondence analysis algorithm and performs any required additional data manipulations.

By default Q produces a *moon plot* in PowerPoint. The moon plot is more easily interpreted than the traditional maps – see Figure 31. Alternatively, traditional scatter plots can be exported into Excel, Word and PowerPoint.

Maps can be created from crosstabs, from summaries of **Pick One – Multi** and grid questions.

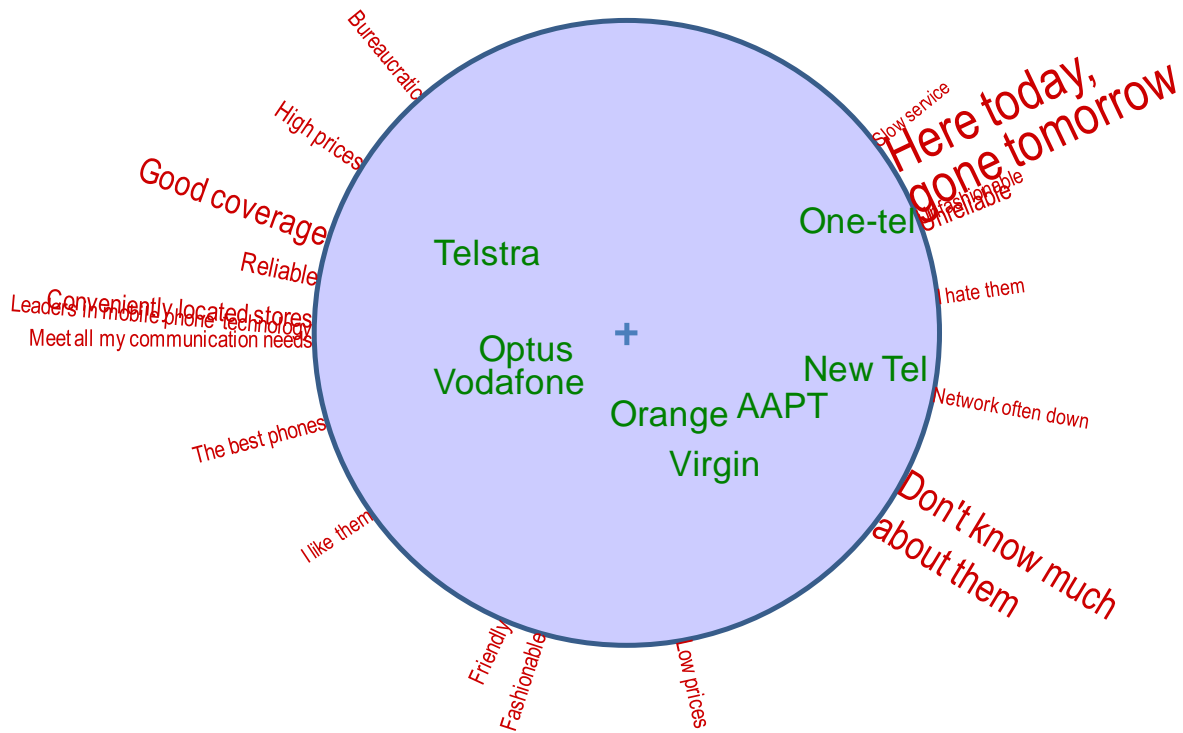


Figure 31. Moon plot



## Choice modeling and experiments

Q can analyze all the standard *choice modeling* methods, including *discrete choice experiments*, *ratings* and *rankings based-conjoint* and *best-worst* (sometimes known as *max-diff*).

Choice modeling data is setup with a **Question Type** of **Experiment**. Detailed instructions for their setup are contained in the *Q Reference Manual*.

Once an experiment has been setup, it is treated in the same way as any other question in Q. When selected in the blue drop-down menu, the coefficients of the model are automatically estimated and displayed (e.g., using *MNL* if choice data). Experiments can be crosstabbed with other questions; the resulting significance tests then compare the coefficients of the different models (for example, Figure 32 shows differences between coefficients of a choice model and age). Filters can be applied. **Smart Tables** can be used to find the other questions most strongly associated with the experiment. Latent class analysis and trees can be created that identify segments with different coefficients.

Coefficient		Under 45	45 or more	NET
Alternative	A	.00	.00	.00
	B	.05	.13	.07
	C	-.02	.04	-.01
Weight	55g	.00	.00	.00
	60g	.35	.64	.43
	65g	.38 ↓	.96 ↑	.55
	70g	.57 ↓	1.21 ↑	.76
Organic	BLANK	.00	.00	.00
	Antibiotic and hormone free	.32	.05	.24
Charity	BLANK	.00	.00	.00
	10% of Revenue donated to RSPCA	.33	.28	.32
Quality	Fresh Eggs (Caged)	.00	.00	.00
	Barn Raised	.78	.70	.74
	Free Range	1.61 ↑	1.14	1.44
Uniformity	All eggs appear the same	.00	.00	.00
	Some eggs appear different (e.g. Shell Colour)	.00	.07	.03
Feed	BLANK	.00	.00	.00
	Feed on grain and fish (rigin in Omega)	.20	.09	.16
	Feed only on vegetables	-.03	.04	-.02
	Price	-.80	-.82	-.80

Figure 32. Cross-tabbing an experiment

There are some specific tools just for analyzing experiments. If all the cells in a table are selected and **Q** is pressed, various model diagnostics will be displayed. If latent classes or a tree has been created (see page 60), right-click on the tree and select **Save Individual-Level Parameter Means and Standard Deviations** to produce estimates of the coefficients for each respondent.



# Latent class analysis and trees

Segments can be formed using *latent class analysis* with one or more questions by selecting **Create ► Segments...** and selecting appropriate questions as **Questions to analyze**. Figure 33 shows segments formed using numeric and categorical data.

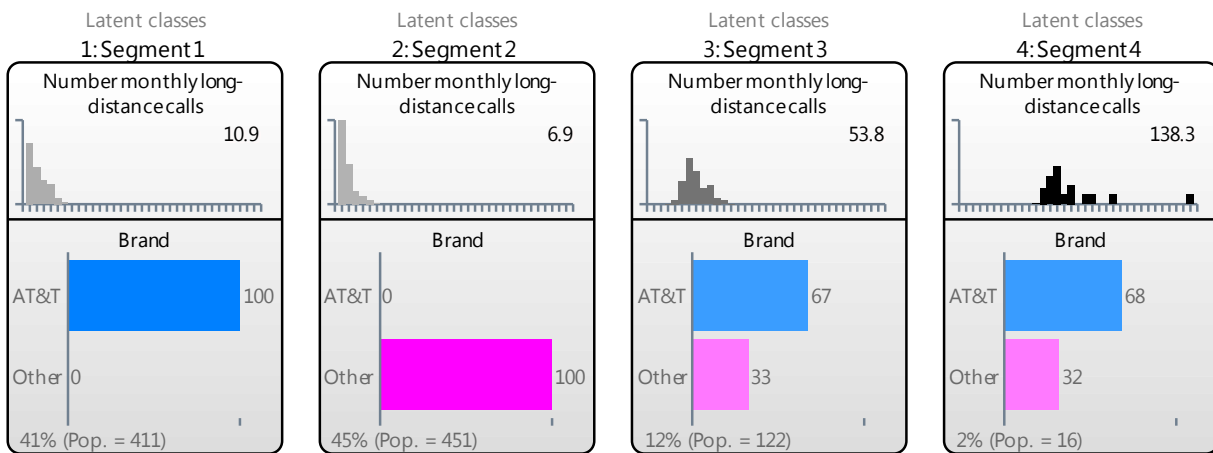


Figure 33. Latent class analysis of brand and number of long-distance calls

Trees can be created which predict the **Questions to analyze** using other questions. Figure 34 shows a tree which predicts brand choice and number of long-distance phone calls by income, age and education. Worked Example 6 shows how this tree was created.

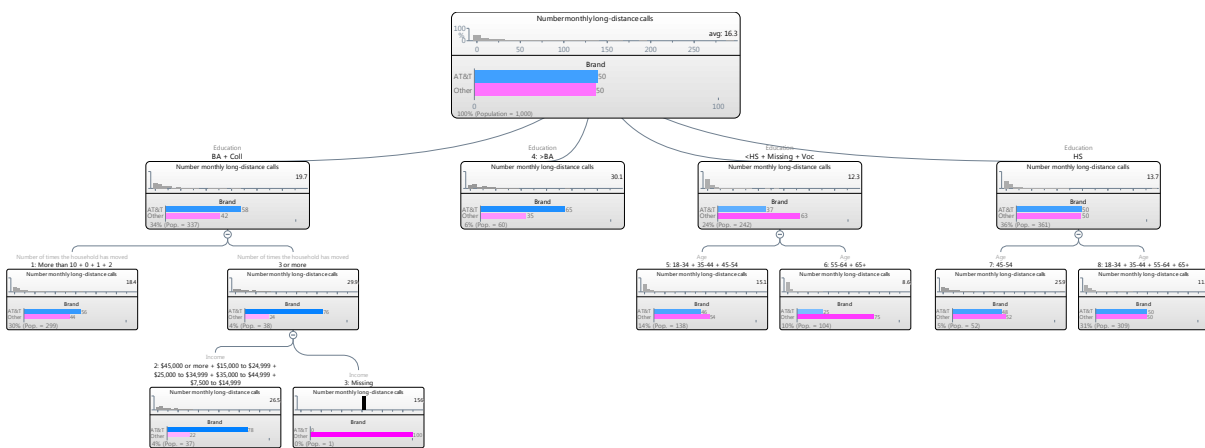




Figure 34. Tree predicting brand and number of long-distance calls



**Worked Example 6: Trees**

1. From the **File** menu select **Open Existing Project...** and select `Phone Records.Q`, which will be in `c:\Program Files\Q\Examples` (unless Q has been installed in a different location on your computer).
2. Click on the **Create** menu and select **Segments....**
3. Select **Brand** and press the  button so that **Brand** and **Number monthly long-distance calls** are selected as **Questions to analyze**.
4. Set **Form segments by...** to **splitting by questions (tree)**.
5. Select all the variables except for **Brand** and **Number monthly long-distance calls** and press the  button.
6. Press **Advanced....**
7. Set **Maximum number of tree levels** to 10.
8. Set **Model selection criteria** to **AIC**. This creates a bigger tree than the default **BIC**.
9. Press **OK** twice.



## Dates and time series plots

Dates can easily be converted to different time scales (e.g., months, weeks, quarters). Time series plots can be created which automatically update with new data, automatically smoothed and can be exported or cut-and-pasted into Word and PowerPoint.

### Worked Example 7: Dates and time questions

1. From the **File** menu select **Open Existing Project...** and select `Time Series Tutorial.Q`, which will be in `c:\Program Files\Q\Examples` (unless Q has been installed in a different location on your computer).
2. Click on the **Create** menu and select **Time Series Plot....**
3. Select **Satisfaction** in the blue drop-down menu on the left.
4. Right-click on the horizontal axis and select **Format Axis....**
5. Select the **Date Question** tab.
6. Change the **Aggregation** from **Week** to **Month**. This will make the categories show months rather than weeks.
7. Change **Period type** to **Duration**.
8. Set the **Duration** to 6 months. The table will now only show the last 6 months of data. (Do not close this dialog box at this stage.)
9. Click on the pink line.
10. Select the **Time Series Analysis** tab.
11. Change the **Density** to Uniform and the **Bandwidth** to 3; this creates a 3 month rolling average.
12. Press **Close**.




## Coding

Q's *coding* facilities allow you to:

- ⇒ Code single response, multiple response and looped questions.
- ⇒ Back-code "other specify" questions.
- ⇒ Automatically recode near-identical responses. For example, once you have coded a specific text response, such as Coce as Coke, Q will automatically recode any other responses using the same spelling into Coke, even if they use different punctuation, capitalization or spaces.
- ⇒ Import and export code frames. This imports both the names of the codes and the rules about which text responses go in which code names.

The worked example below introduces the basics of coding. More detail is in the *Q Reference Manual*.

### Worked Example 8: Coding

1. From the **File** menu select **Import New Data File (New Project)...** and select `Discount.csv`, which will be in `c:\Program Files\Q\Examples` (unless Q has been installed in a different location on your computer).
2. Press **Yes** and **Yes**.
3. In the blue drop-down menu type `qd6` and press **Enter** on your keyboard. You are now looking at the raw text responses.
4. Press  (to the right of the blue drop-down). This selects the question in the **Variables and Questions** tab.
5. Right-click on the selected question and select **Insert Variable(s) ► Code Text ► New Code Frame....**
6. Select **Pick One** and press **OK**. (We would select **Pick Any** if coding multiple response data.)
7. Right-click on **New Code** and select **Rename....**
8. Type `White Collar` and press **OK**.
9. Right-click on **White Collar**, select **Add Code**, type **Blue Collar** and press **OK**.



10. Note that the text we are about to code is `Public Servant` and five respondents have given this answer (differences in punctuation and spacing are ignored).
11. Click on **White Collar**.
12. The next response is REP/CAR PARTS. Click on **Blue Collar**.
13. Keep going until all responses are coded. Answers that suggest the respondent does not have a job should be coded as **Missing Data**.
14. When you have finished, press **OK**. A new question, named Qd6 - Coded, will now appear in row 32.
15. Double-click on **32**. The question will now be displayed in the **Tables** tab. It works just like any other question (i.e., it can be filtered, cross-tabbed, etc.).



## Traditional multivariate analysis

Additional advanced analyses are available by selected Create and **Traditional Multivariate Analysis**.

**Cluster Analysis** **Cluster Analysis** forms clusters of similar observations. Q uses *k*-means cluster analysis. Q uses a state-of-the-art expert system to determine the number of clusters; this is useful if you need to prove that the clusters that have been identified are, in some sense, the real and true clusters. In most instances, latent class analysis (see page 60) should be used instead of cluster analysis, as it takes into account missing data and can appropriately address rankings, categorical and experimental data.

**Principal Components Analysis** **Principal Components Analysis** identifies interrelationships between variables. It is useful for identifying underlying dimensions of consumer behavior, summarizing data and identifying redundant questions in questionnaires.

**Regression** **Regression** quantifies relationships between a dependent variable (e.g., overall satisfaction) and various drivers (e.g., satisfaction with different aspects of a firm's performance). Q examines the data to determine the appropriate method, choosing between *binary logit*, *ordered logit*, *linear regression* and *multinomial logistic discriminant analysis*.



# Index

'...'	See Values
Add Group	33
Aggregation	62
Apply filter to the current table	28
Auto-update	26
Available for Filtering	29
Available for Weighting	25
Average	11, 51
Bandwidth	62
BANNER	14, 22, 29
Base n	24
Basic Tables	33
BIC	61
binary logit	65
binary variables	48
Case IDs	44
categorical variables	11, 48
cell weighting	See target weighting
Chart	38, 39
Check	49
Check for New Version of Q	7
choice modeling	59
Cluster Analysis	65
Code Text	15, 63
coding text variables	48, 63
color cells	19
Column %	14, 18
Compute from effective sample size	55
Copy	16
Copy Onto	16
Copy Table to Clipboard	37
correspondence analysis	58
Count This Value	49, 50
Create Banner	22
Create NET	17
Create Span	21
crosstab	11, 14
CSV data files	9
Current Sample Size	25
customize	23
dashboard	41
Data	29, 43
Data Difference Warning	53
data file	8
Date	47
Date Question	62
Decimal places	19, 38
Project Options	19
Table Options	19
Delete Level	44
Delete Row	45
Delete Rows Matching Filter (Green)	46
Density	62
Dependent question	56
Duplicate Question	50
Duration	62
Edit	19
Edit Variable	29
effective sample size	24
Email Support	6
Excel-Style Formula	45
Experiment	48, 59
Export Selected Variables to Excel	43
Export to Office	38
Export to PDF	34, 37, 38
F1	6
False Discovery Rate	54
filter	24, 27, 29, 30
Find	49
Find Variable	45
folders	32
Footer	38
Header/Footer	37
Format	38
Format axis	35
Format Data Series	35
formula bar	44
frequency table	10
Groups	32, 57
Help	6
Image	42
Import New Data File (New Project)	8, 48, 63
Import Updated Data File (Current Project)	52
Insert Ready-Made Formula(s)	26
Insert Variable(s)	15, 45, 63
<b>INVALID</b>	52
JavaScript	45
Key questions	34
language	23
latent class analysis	60
linear regression	65
Lock	32
Map	58
Maximum number of tree levels	61
mean	See Average
Merge	21
Microsoft Office	38
Missing Data	19, 49
Model selection criteria	61
moon plot	58
move	16
multinomial logistic discriminant analysis	65
Multiple comparisons method	54
multiple response sets	9
n	18
NaN	28
NET	11
New Code Frame	15



New Comment for Variable.....	34
Notes .....	34
Null hypothesis.....	55
Number.....	46
Number – Grid.....	47
Number – Multi .....	46, 51
Numeric .....	45
numeric variables .....	11
Online Documentation Search .....	6
Online Training .....	6
Open Existing Project.....	61, 62
ordered logit.....	65
Output Text.....	23
Paste Data (e.g., From Excel).....	45
percentage signs.....	19
Period type.....	62
Pick Any.....	47, 49, 50
Pick Any – Grid .....	47
Pick One .....	46
Pick One – Multi .....	46, 49, 50
Plots.....	36
Population.....	25
Population Target.....	26
PowerPoint as Excel WorkSheet.....	40
PowerPoint Export Layout .....	39
Principal Components Analysis.....	65
Printed Cover Page .....	37
Printed Headings .....	37
Printing tables .....	37
Profiling questions.....	34
Project Options.....	19, 37
Q Project file.....	8, 9, 52
Question.....	48, 50
Question Name .....	10
Question Type .....	46, 48, 49, 59
Questions to analyze .....	60
raking .....	26
Ranking .....	47
RAW DATA.....	8, 15, 43
Regression.....	65
Rename.....	17, 32
Report.....	31, 33, 57
Restore.....	38
Revert .....	18, 21
Revert to Source .....	51
Revert to Source Label .....	51
Rim Weight/Rake.....	26
Row %.....	18, 24
Sample scaling constant.....	55
sample size.....	24, 26, 30
Save as File .....	52
Save Individual-Level Parameter Means .....	59
Segments .....	60
Send Pack.....	42, 52
Set Categorical Periods .....	35
Set Question.....	48, 49
Share as Dashboard .....	42
Show labels.....	44
Show Variables and Values.....	45
Show weights .....	25
Significance level .....	57
slider .....	32
Smart Tables.....	56
Sort .....	44
Sort By.....	17
source labels.....	51
spans .....	21
Split.....	18
splitting by questions (tree) .....	61
SPSS.....	8
Statistical Assumptions .....	54, 55
Statistics – Below.....	18, 25
Statistics – Cells .....	18, 20, 21, 24, 25
Statistics – Right .....	18, 25
Status .....	48, 52
Styles.....	See Table Styles
SUM .....	11
SUMMARY.....	11, 14
Swap X and Y Axes .....	35
Table Options .....	19, 34, 38
Table Styles.....	37, 38
Tables.....	10, 16, 31, 51
target weighting .....	25
tests of statistical significance .....	54
Text .....	45, 46
Text – Multi .....	46
text variables .....	48
Time Series Analysis.....	62
Time Series Plot.....	62
top 2 box .....	13, 50
trees.....	60
triple-s.....	8
two dimensional questions .....	12
Unlock.....	32
update.....	52
Update This Presentation.....	40
Value Attributes.....	19, 25, 50
Value Label .....	9, 44
Values.....	19, 25, 49, 51
Values – Descending .....	17
variable .....	8
Variable Label .....	8, 9
Variable Name .....	43
Variable Status.....	52
Variable Type.....	15
Variables and Questions.....	25, 29, 43, 44, 48, 51
Via E-Mail .....	52
View .....	44
warning .....	49
weights.....	24, 26

