

Data Science Tutorials



Automatically report results from Qualtrics surveys

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Cleaning responses

Once you have your survey results, you need to make sure only valid responses are used for analysis. Examples of responses **you should not** use include tests runs of your survey, responses obtained before you officially launched your survey, responses that were answered too fast, etc.

- **Step 1:** On My Surveys, click on the **Results** button corresponding to your survey:

Star icon | Checkmark icon | **Brand Personality Study Celebrs 8 of 8 - SPLIT**
Modified on: Oct 13, 2014 | 82 | Edit | **Results** 1

- **Step 2:** You first need to review the survey responses. Click on **Responses**:

My Surveys | Create Survey | Edit Survey | Distribute Survey | **View Results**

2 | View Reports | **Responses** | Download Data | Cross Tabulation

- **Step 3:** You will see a list of your responses. Use the checkboxes to mark whichever response does not qualify.

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Response ID	Respondent	Response Type	Start Time	End Time	Duration	Actions
<input checked="" type="checkbox"/>		IP Address	13 Oct 2014 10:23 PM	13 Oct 2014 10:29 PM	6m 8s	▼
<input type="checkbox"/>		IP Address	13 Oct 2014 10:26 PM	13 Oct 2014 10:29 PM	2m 50s	▼

- **Step 4:** Once the responses are selected, click “Delete”. A window will appear. Confirm deletion and you’re done!

Select: [All](#) [None](#) With Selected: [View](#) **Delete**

Delete Responses

⚠ Are you sure you want to permanently delete these 1 responses? This action cannot be undone.

Decrement all Quotas associated with deleted responses.

Cancel | **Delete**

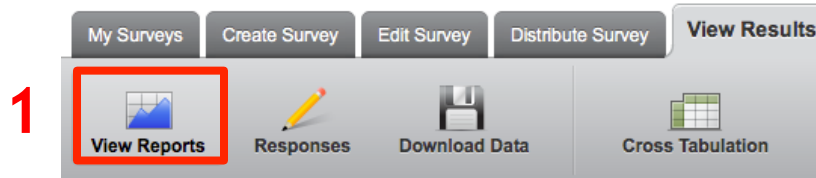
- **NOTE:** You cannot undo this deletion process. **MAKE SURE** the responses you are deleting are indeed non-qualifying responses. In addition, I strongly suggest to **NOT USE THIS METHOD** to delete respondents who did not pass attention checks. You can simply filter those out later.



Generating the report

In order to look at the analysis that Qualtrics can automatically generate for you, it is necessary to create a **Report**. Such a report contains all the data that was not deleted in the previous step, and is the data that is used for analysis. Generating this report is very simple.

- **Step 1:** On View Results, click on the View Reports button:



- **Step 2:** You will see the **Select Report** screen, and an **Initial Report** (which is a report Qualtrics automatically generates). Since you cleaned your data, you should get a clean report too. Hit **Create New Report**.

Select a Report

2 Click on the name of the report that you want to view.
You can also [Create a New Report](#).

Report Name	Creation Date	Last Modified	Owner	Delete
Initial Report	Oct 5, 2014	Oct 5, 2014		Delete

- **Step 3:** A report is created and you are taken to the **View Results** tab automatically (you'll be able to access this Report later - just make sure you access the latest one, as can be seen in the above "Creation Date" field).

That's it! You have created your first Qualtrics report. Next, we will look at how to analyze questions one by one, that is, univariate analysis. For example, we could determine the number of people who took our survey and who smoke, **OR** are freshmen. However, we will not look at combinations of questions yet, i.e., people who took our survey and who smoke **AND** are freshmen.



The View Reports environment

Let's look at the parts that compose the View Reports screen. This is what you will use to analyze single questions, and it is very easy.

The screenshot shows the 'View Reports' interface. At the top, there are navigation buttons: 'Initial Report', 'My Report', and 'New Report'. On the right, there are options for 'Copy Report...', 'Public Report...', 'Export Report', and 'Report Options'. A sidebar on the left lists 'Questions' with checkboxes next to them. A table in the center displays the results for a selected question, including columns for '#', 'Answer', 'Response', and '%'. Below the table is a 'Statistical analysis' section with a table of statistics and values.

#	Answer	Response	%
1	I agree to participate in this study	82	100%
2	I DO NOT agree to participate in this study	0	0%
Total		82	100%

Statistic	Value
Min Value	1
Max Value	1
Mean	1.00
Variance	0.00
Standard Deviation	0.00
Total Responses	82

Note: This slide also serves as an example of how a Nominal question would be analyzed. Since we cannot do any sophisticated analysis, all we use are counts.


- Questions:** The list of questions delivered in your survey. By selecting a particular question, you can access its results which are calculated automatically.
- Filters:** Using Filters, you can show results for respondents who satisfy a certain criterion - for example, respondents who passed attention checks, who answered "Yes" or "No" to other questions, etc. You can also combine questions using Filters.
- Count results:** These are the results pertaining to how many people answered each option in your question. For example, in the question above, it can be seen that 82 people (100%) answered that they agreed to participate in this particular study.
- Statistical analysis:** Qualtrics automatically calculates the minimum, maximum, average (mean), variance, standard deviation and total responses recorded. Thus, the analysis is automatically done for you!



Analysis of Interval questions

Interval questions are very common in our surveys. Qualtrics provides a simple way to analyze these. Consider the following question and its analysis:

6. Please indicate your agreement with the following statements:

 Add Graph
  Add Table
 [More...](#)

#	Question	Completely disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Completely agree	Total Responses	Mean
1	Purchasing the wrong kind of car insurance can lead to problems in the future	3	19	47	207	254	530	4.30
2	I would rather be safe than sorry.	2	9	51	198	270	530	4.37
3	I want to be sure before I purchase anything	0	9	41	192	288	530	4.43
4	I avoid risky things	6	29	59	223	213	530	4.15

Statistic	Purchasing the wrong kind of car insurance can lead to problems in the future	I would rather be safe than sorry.	I want to be sure before I purchase anything	I avoid risky things
Min Value	1	1	2	1
Max Value	5	5	5	5
Mean	4.30	4.37	4.43	4.15
Variance	0.67	0.57	0.50	0.81
Standard Deviation	0.82	0.76	0.71	0.90
Total Responses	530	530	530	530

Here you first see **each scale item**, followed by the **distribution of responses in each scale point**, and then the **statistical analysis below**. Note that the mean (average) of each question will easily let you establish the level of agreement, on average, of the 530 respondents for each of these scale items.



Analysis of Ratio questions

Ratio questions can be easily analyzed in Qualtrics, but there is a big limitation. Consider the following question:

Based on the size you chose, either 1.7 ounce (50 ml) or 3.3 ounce (100 ml), please answer one of the following questions. For example, if you chose a 1.7 ounce (50 ml) bottle, only answer how much you would be willing to pay for this size and skip the question about a 3.3 ounce (100 ml) bottle, and vice versa.

How much would you be willing to pay for a 1.7 ounce (50 ml) bottle?

This is a **Slider** ratio question, and Qualtrics reports results as follows:

22. Based on the size you chose, either 1.7 ounce (50 ml) or 3.3 ounce (100 ml), please answer one of the following questions. For example, if you chose a 1.7 ounce (50 ml) bottle, only answer how m...

#	Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
1	Dollar amount	10.00	55.00	40.45	13.03	20

Here you first see **the question**, followed by the **statistical analysis below**. There are no counts because that is not relevant in a Ratio question - here, focus on the minimum, maximum, average and standard deviation. **The standard deviation here will suggest how spread out responses were. The same applies for Interval questions.**



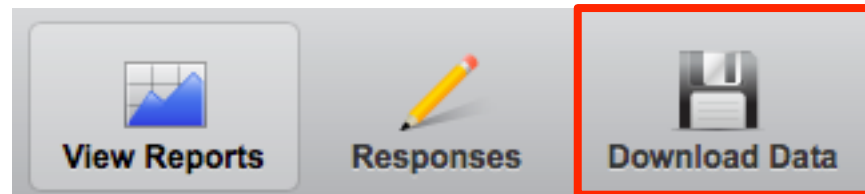
Problem with Ratio questions

Consider now the following question and its results. This was a **Text Entry** question where consumers can enter any number:

10. How old do you think this car insurance agent is? (Please answer with a whole number).

Table Options	
Text Response	
View	45
View	49
View	48
View	52
View	50
View	48
View	53
View	55
View	60
View	45
View	43
View	40

As can be seen, here responses are just text, and you do not get any statistical analysis. In such case, you would need to **Export** the data and analyze it using Excel, by clicking **Download Data**, followed by **Download Now**. That's it! You can open the Excel file, find your question, and take the minimum (MIN), maximum (MAX), average (AVERAGE) or standard deviation (STDEV) using the formulas in parentheses.

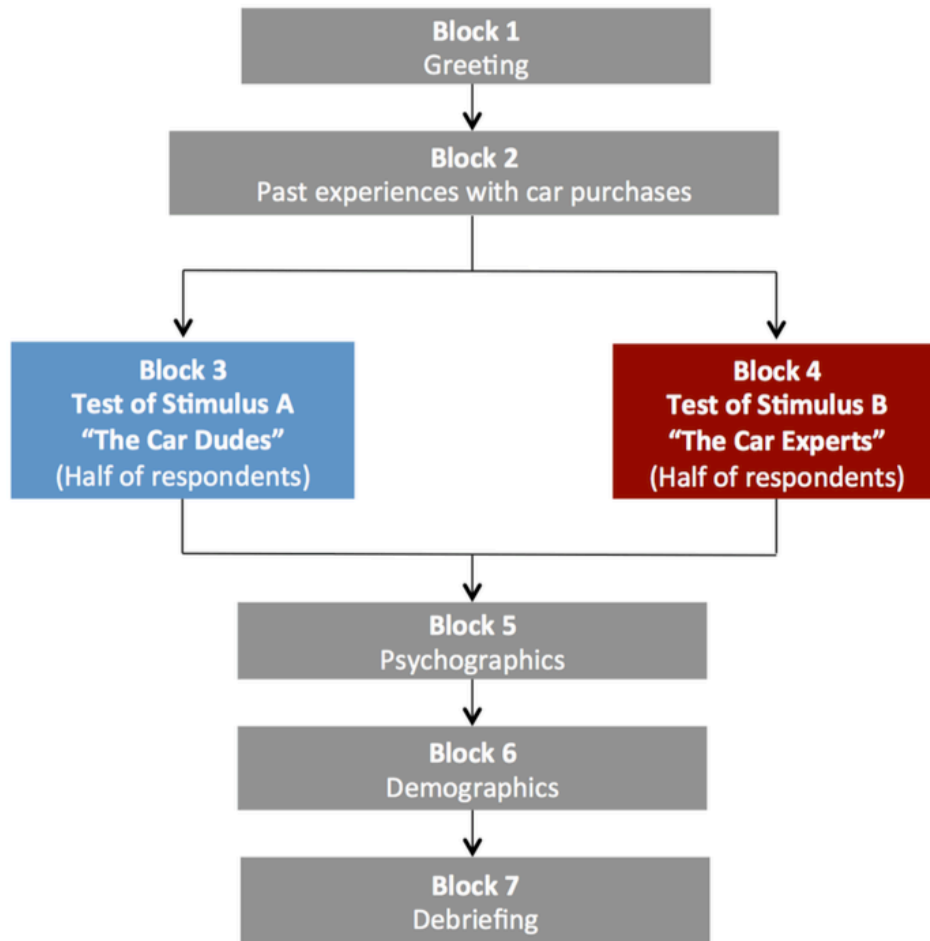


Statistic	Value
Total Responses	12



How to analyze A/B TEST RESULTS

Recall an A/B structure like this one:



This analysis poses no problem. The only difference is as follows:

- Questions that are not in areas that **branched out** (e.g. A and B blocks) can be analyzed as discussed before.
- Questions **within each branch** should be examined separately. So, for example, if you asked a likelihood of purchase question **for each stimulus**, then you need to look at the two different likelihood of purchase questions, one for each stimuli.

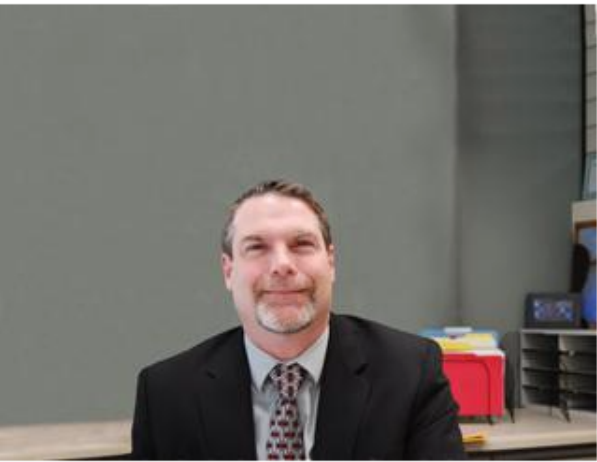
The example in the next slide clarifies. Here, we asked respondents to inform us of their rating of a salesperson when this salesperson had either 0 or 12 salesperson awards (Stimulus A and Stimulus B, respectively).



How to analyze A/B TEST RESULTS

How would you rate *this specific insurance agent*?

Very bad Bad Poor Neither Good nor Bad Fair Good Very Good



20. How would you rate this specific insurance agent?

342. How would you rate this specific insurance agent?

Statistic	Value
Min Value	3
Max Value	9
Mean	5.41
Variance	3.88
Standard Deviation	1.97
Total Responses	17

Note that here the averages are not very different, suggesting that the effect of awards between these two conditions is not very large. This can give you an **initial impression** of average differences. You would need to use a **t-test** using SPSS to determine whether these differences are statistically significant (not covered in these notes).

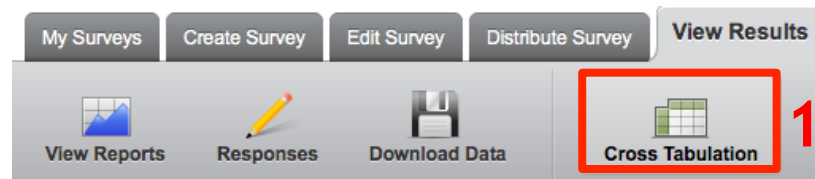
Statistic	Value
Min Value	3
Max Value	9
Mean	6.86
Variance	3.73
Standard Deviation	1.93
Total Responses	21



Analyzing combinations of questions

Suppose we now want to know whether consumers that responded a certain question tend to answer another one in a certain pattern, such as whether smokers have a higher willingness to pay for luxury items, or whether people that identify as freshmen consider themselves to be overweight. To set up analysis:

- **Step 1:** On the **View Results** tab, click on **Cross Tabulation**.



- **Step 2:** Click **Create a new Cross Tabulation**.



- **Step 3:** Decide which questions you will analyze. Set the one with the most items (e.g. 5 Income options) as **ROW**, and the one with the least items (e.g. 2 Gender options) as **COLUMN**.

<input type="checkbox"/> Banner (Column)	<input type="checkbox"/> Stub (Row)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Please provide your gender
<input type="checkbox"/>	<input checked="" type="checkbox"/>	What is your family income?

- **Step 4:** Click **Create Cross Tabulation** and results will appear next.

Each crosstab will be automatically saved in your Cross Tabulations so you can access it later!



Example of Cross Tabulation

Do men and women tend to purchase different sizes of fragrances? In other words, is there a relationship between **gender** and **fragrance bottle size preferences**? Let's ask our crosstab:

		Please provide your gender		Total	
		Male	Female		
Suppose you are shopping for a fragrance for yourself in a mall (e.g. Perfumania). Which size would you prefer to buy?		1.7 ounce (50 ml) bottle	4	9	13
		3.3 ounce (100 ml) bottle	5	9	14
		Total	9	18	27

		Please provide your gender	
		Suppose you are shopping for a fragrance for yourself in a mall (e.g. Perfumania). Which size would you prefer to buy?	Chi Square
	Degrees of Freedom	1	
	p-value	0.79	

**Note: The Chi-Square approximation may be inaccurate - expected frequency less than 5.*

As can be seen, the pattern in the first figure suggests that men and women buy about the same proportion of fragrance sizes - almost half of the men (4 and 5) and half of the women (9 and 9) reported different fragrance size preferences.

The statistical analysis reveals a very high **p-value** (0.79). This means that the result is not statistically significant. In terms of your analysis, use the following rule:

- **p-values lower than .05**: There is definitely a relationship between both questions.
- **p-values higher than .05, up to .1**: There is mild evidence of a relationship.
- **p-values higher than .1**: There may not be a relationship - proceed with caution when giving suggestions to your client. The farther from .1, the less likely there is a relationship.



Analyzing Ratio or Interval responses

The previous questions are both **Nominal**. However, what if we have a **Nominal** and an **Interval** or **Ratio** response? For example, do men or women have a higher willingness to pay for fragrances? A cross tabulation cannot answer this question, and, generally, you would require using SPSS, or, at least, Excel Pivot Tables. However, Qualtrics does have an option to make such basic analysis, called **Filtering**.

- **Step 1:** On your survey, click **Results**. The **View Results** environment appears.

Constructive Choice Survey P1
Modified on: Mar 13, 2015

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Edit Results

- **Step 2:** Select any question. You will see the results for the whole sample, e.g. the average.

#	Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
1	Dollar amount	35.00	125.00	74.29	22.82	24

- **Step 3:** Now go to **Show Filters**. In **Filters** below, click on **New**.
- **Step 4:** Decide who will be filtered (in or out). For example, here, we'll declare that we want the analysis to be performed **only on those respondents that reported being Female**. **Save the Filter**.

Hide Filters... Drill Down...

Question Search...

Date Range All Dates

Completion Status All

Filters New

New Filter [Rename](#)

If

Question Q27 Please provide your gender Female Is Selected

Delete Filter Cancel Save Filter

1

2

4



Analyzing Ratio or Interval responses

You're done! Now the question will only include females. You may want to call the Filter "Women" or "Men" or any name you want. I did not, so as you can see Qualtrics says that I'm filtering using "New Filter":

Filtering By: **New Filter** ✕

[+ Add a Filter to This Report...](#)

Show Style Editor

[← Previous Page](#)

23. How much would you be willing to pay for a 3.3 ounce (100 ml) bottle?

#	Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
1	Dollar amount	35.00	125.00	77.53	24.37	15



Note that, as compared to the results in [Step 2](#) of the previous slide, here we have only 15 responses (because 15 females answered the survey). The average is not the same as that of the whole sample. Here are the results filtering by Men as well. Note the difference! Is this what you expected?

#	Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
1	Dollar amount	40.00	100.00	68.89	20.12	9



AN EASIER WAY TO FILTER: Proceed to [Step 2](#) as before, then click on this button at the top of your question! 😊



Data Science Tutorials



Questions?
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