How Do I run a factor analysis and export to excel?

7mins

Factor analysis is a program that helps explain a target audience by showing the differences (and similarity) between variables (rows). This is an example summary report showing the factors created by looking at heavy channel 4 viewers (top quintile of diary entries) and looking at their reasons for watching TV. After reviewing the report and learning about the reasons for watching, the user added headers e.g. news/info above the factors to help explain the report. Your own header or factor description can be added in the Telmar factor analysis report or in the xls file.

Channel 4 - Top Quintile (Most Time Spent)	news/info	talk/people	reward/cheer up	noise	entertain/relax
Touchpoints 12	Factor1	Factor2	Factor3	Factor4	Factor5
Variance explained (%)	10	10	9.9	9	6.7
Variance explained cumulative (%)	10	20	29.9	38.9	45.6
10 For News And Current Affairs - Main Reason For Watchin	0.732	-0.063	-0.052	0.028	-0.05
9 To Keep Up To Date - Main Reason For Watching TV	0.589	0.085	0.036	0.184	0.087
12 For Sports News And Commentary - Main Reason For Wa	0.543	0.089	0.06	-0.144	0.104
13 For Education/Information - Main Reason For Watching T	0.528	0.017	0.186	0.057	-0.198
11 For Practical Advice - Main Reason For Watching TV	0.351	0.135	0.439	0.072	0.076
5 To Talk About It With Friends/Family As I Am Watching It	0.069	0.811	0.049	0.055	-0.068
4 To Spend Time With Friends/Family - Main Reason For W	-0.028	0.739	0.068	0.045	0.037
6 To Give Me Something To Talk About With Friends/Famil	0.105	0.593	0.141	0.122	0.077
16 To Make Me Feel Better - Main Reason For Watching TV	-0.026	0.22	0.605	0.242	0.055
7 To Stimulate My Imagination - Main Reason For Watchin	0.21	-0.015	0.569	0.07	-0.008
17 Other - Main Reason For Watching TV	-0.205	0.019	0.526	-0.162	-0.34
8 To Treat/Reward Myself - Main Reason For Watching TV	0.076	0.139	0.519	0.098	0.311
11 For Practical Advice - Main Reason For Watching TV	0.351	0.135	0.439	0.072	0.076
2 To Relax/Escapism - Main Reason For Watching TV	-0.078	-0.065	0.3	0.139	0.544
3 Force Of Habit - Main Reason For Watching TV	0.043	0.142	-0.074	0.706	-0.068
15 As Background - Main Reason For Watching TV	0.008	0.089	0.106	0.672	0.081
14 To Keep Me Company - Main Reason For Watching TV	0.065	-0.013	0.28	0.613	0.046
1 For Entertainment - Main Reason For Watching TV	0.025	0.079	-0.08	-0.08	0.736
2 To Relax/Escapism - Main Reason For Watching TV	-0.078	-0.065	0.3	0.139	0.544
17 Other - Main Reason For Watching TV	-0.205	0.019	0.526	-0.162	-0.34
8 To Treat/Reward Myself - Main Reason For Watching TV	0.076	0.139	0.519	0.098	0.311

How to do it? (there is a separate document that helps you understand how to read and interpret these factors).

Step 1:

Choose your survey; in this example we have selected Touchpoints.

| Survey Description	Survey Date	Code
TPT12 IPA Touchpoints 4	08/10/2012	TPT12

Step 2:

Input a table base **(not a column)**. In this example we will select those Channel 4 viewers who have the most viewing hours (as calculated by Telmar using the Touchpoints diary data). This target is found by selecting the yellow lines below.

Step 3:

Input rows. To switch to rows, click on the **Rows** tab. Find the tv header using filter. then find main reason for watching using search.
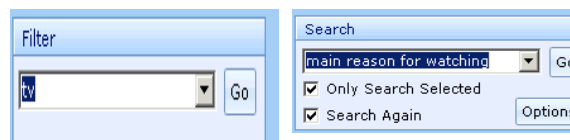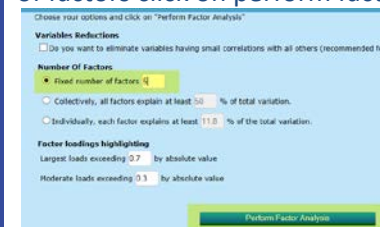

Step 4

Enter them all

Step 5

Click on the 🅣 and select " send to" factor analysis

Step 6

You get a form. In this example we have requested 5 factors. Having stated the number of factors click on perform factor analysis

Step 7

You get this report, click on multi sort to aid interpretation

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When you click on multi sort you are asked about the lower threshold the default is 0.4 we suggest the values 0.4 or 0.5 click on ok

At this stage a sorted report like the one above will appear with each column sorted.

Step 9
While you are on the results screen, pick

Found here

Step 10
An excel message will appear at the bottom. Click on open excel.

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Step 11
The file opens and it looks like this.

Step 12 All you need to do is widen column b so you can see the titles

Step 13 to highlight the big numbers, you highlight all of the numbers in the table excluding the variable % and then select conditional formatting and select greater than 0.4 or 0.5. From C7 across and down

At this stage your report will look like this:-

About factor analysis
✓ It summarises the correlation in a set of data and converts this into interpretable patterns
✓ It simplifies the structure of a set of data
✓ It is used to understand a single target audience unlike correspondence which compares a set of columns
✓ It reduces a "large" number of correlated variables (rows) e.g. lifestyle questions to a smaller set of uncorrelated variables called factors. It does this by grouping survey questions (rows or variables) together (based on their correlation).
✓ Unlike cluster which groups respondents together, factor analysis groups questions (variables) which are answered in a similar way

What can it be used for?
✓ It is an excellent aid for questionnaire design, as it will identify questions answered in a similar way. (due to their high correlation with each other)
✓ It can be used as a selection procedure for running cluster analysis
✓ It can be used to explore or confirm a hypothesis about the relationship between variables
✓ It can be used as part of the media planning process to identify appropriate media for lifestyle driven target audiences
✓ It can be used to understand media e.g. word of mouth, favourite tv channels or programmes, reading interests etc.

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