HOW DO I run a Factor Analysis and export to Excel?

10 mins

Factor Analysis is a program that helps explain a target audience by showing the similarity (and differences) 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 their reasons for watching TV. After reviewing the report and learning about the reasons for watching, the user can add a description for the factors e.g. news/info. This helps explain the report which can be exported to Excel.

Source: TPT17 IPA TouchPoints 2017

---

a) In SurveyTime select the survey you wish to use.

b) Input your target audience as the **Table Base** by selecting **Add Table**. 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) **(figure1)**. Channel 4 viewers are split into 5 quintiles, with the top quintile representing the 20% that spent the most time viewing Channel 4. This is what we will use in the table base.

c) Input the questions (variables) you wish to analyse into the **Rows.** In this example, we have selected the 19 '**Main Reasons For Watching TV**' as the **Rows (figure 2)**. We recommend short titling.

d) Use the **arrow** in the top right of the screen to move the tool bar to find the **Factor Analysis** button in '**Add Ons**' **(figure 3)**.

e) In this example, on the next screen, we have requested 5 factors. Having stated the number of factors, click on **Perform Factor Analysis (figure 4)**.

Figure 1

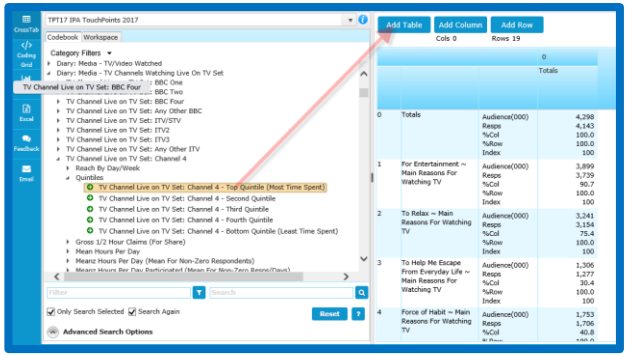


Figure 2

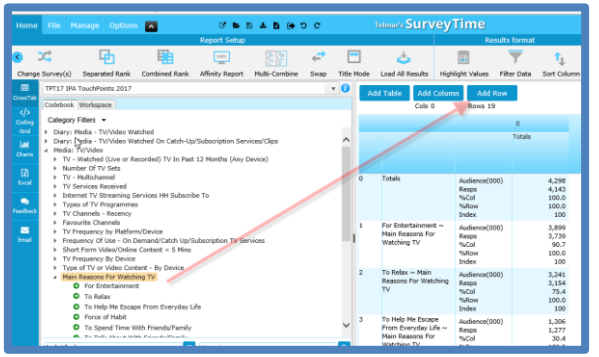


Figure 3

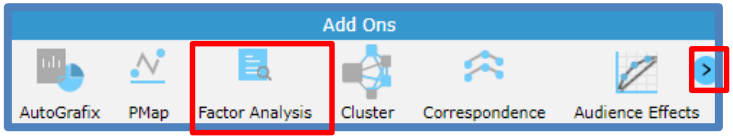
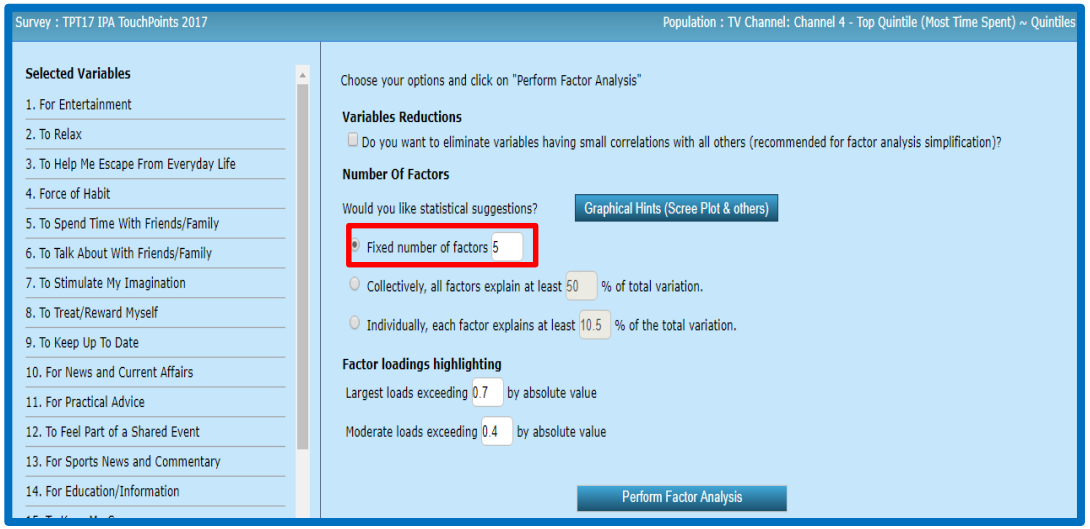


Figure 4



f) Click on **Multi-Sort** to aid interpretation **(figure 5)**. You will then be asked to decide on a lower threshold **(figure 6)**. The default is 0.4. By doing this, variables with correlation lower than the threshold are removed, which greatly simplifies the analysis.

g) Click on **Export Factor Loading To Excel** **Figure 7**, and open the file download.

About factor analysis:

- It summarises the correlation between variables 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 groups called factors. It does this by grouping survey questions 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 can be used as an aid for questionnaire design, as it will show questions answered in a similar way (possibly 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.

Figure 5

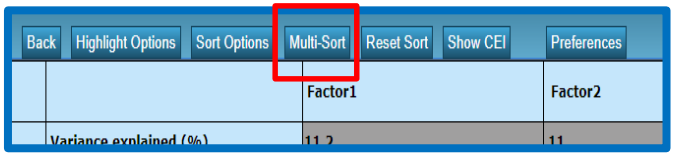


Figure 6

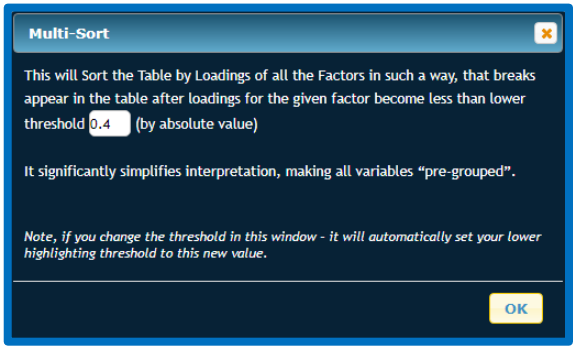
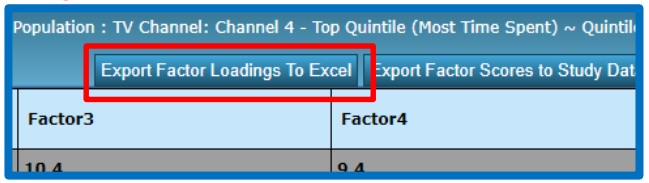


Figure 7



TPT17 IPA TouchPoints 2017
TV Channel Live on TV Set: Channel 4 - Top Quintile (Most Time Spent)

	Factor1	Factor2	Factor3	Factor4	Factor5
Variance explained (%)	12.5	11.2	11.2	8.6	7.2
Variance explained cumulative (%)	12.5	23.7	34.9	43.5	50.7
For News and Current Affairs	0.715	-0.09	0.12	-0.06	0.149
For Education/Information	0.691	0.251	0.039	0.15	-0.085
To Keep Up To Date	0.624	0.023	0.357	-0.035	0.135
For Practical Advice	0.533	0.272	-0.043	0.33	-0.115
For Sports News and Commentary	0.474	0.061	-0.009	0.101	0.368
To Stimulate My Imagination	0.471	0.167	0.341	0.256	-0.103
As Background	0.068	0.701	0.127	0.051	0.071
To Keep Me Company	-0.043	0.692	0.215	0.153	-0.018
Other	0.168	0.554	-0.025	0.09	0.077
Force of Habit	0.076	0.5	0.07	-0.248	0.584
To Make Me Feel Better	0.07	0.465	0.435	0.361	0.102
To Treat/Reward Myself	0.082	0.02	0.646	0.321	0.065
It's My Personal Time-Out	0.122	0.197	0.642	0.183	-0.056
To Relax	0.331	0.04	0.562	-0.238	0.203
To Help Me Escape From Everyday Life	0.013	0.347	0.546	-0.09	0.133
To Make Me Feel Better	0.07	0.465	0.435	0.361	0.102
To Feel Part of a Shared Event	0.186	0.139	0.064	0.692	0.035
To Talk About With Friends/Family	0.042	0.102	0.283	0.648	0.391
To Spend Time With Friends/Family	0.065	0.035	0.134	0.292	0.757
Force of Habit	0.076	0.5	0.07	-0.248	0.584
For Entertainment	0.237	-0.139	0.238	0.095	0.055