HOW DO I? run a factor analysis and then a cluster analysis using non attitudinal questions

This How Do I guide is for clients wanting to run a cluster analysis (also known as segmentation) using binary or yes/no questions. This means clusters can be run using a variety of questions e.g. purchasing or media behaviour and questions about interests, hobbies, genres etc. In this How Do I guide we will be using the Ipsos Affluent Survey to segment people by kinds of holidays, duty free purchasing, technology activity and interests. **Figure 1**

Traditionally cluster analysis has been run using correspondence analysis and cluster using 5 scale (Likert) attitudinal psychographic questions e.g. **Figure 2**. The procedure for clustering these is described in our Correspondence/cluster how do I guide.

These are instructions for using the Factor Analysis approach instead:-

1. Choose the target audience you wish to segment. Enter this as your base - here we picked Singapore. **Figure 3**
2. Next pick the questions that you wish to use for the segmentation. When entering the sets of questions, be sure to leave out non useful questions e.g. none, don't know, refused, others. **Figure 4**
3. Enter the rows, here **Figure 5** we have 59 rows. The report is easier to read if you use short title **Figure 6**
4. Next select F.A. from the add on menu **Figure 7**
5. You will get the Factor Analysis screen. In this example the program suggests "fixed number of factors" 6 and you just need to click on perform factor analysis. **Figure 8**

Figure 1

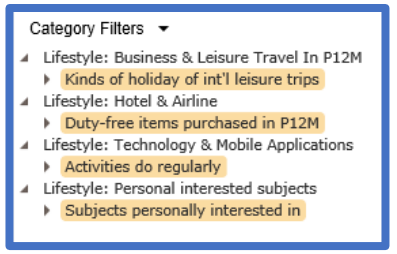


Figure 2

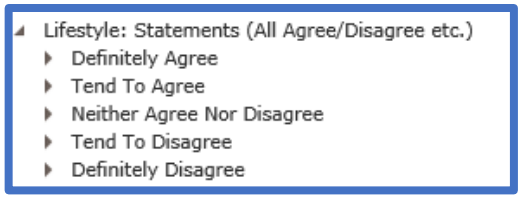


Figure 3

Figure 4

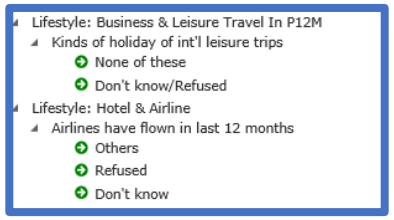


Figure 5

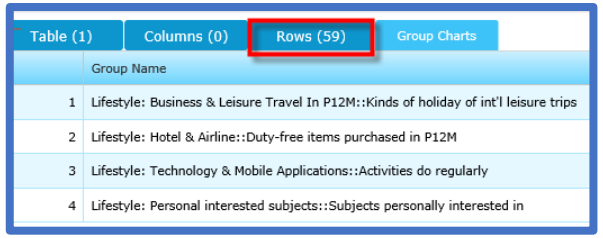


Figure 6

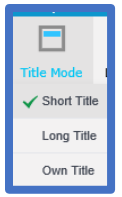


Figure 7

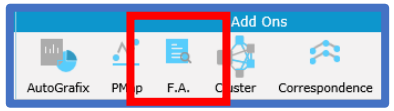
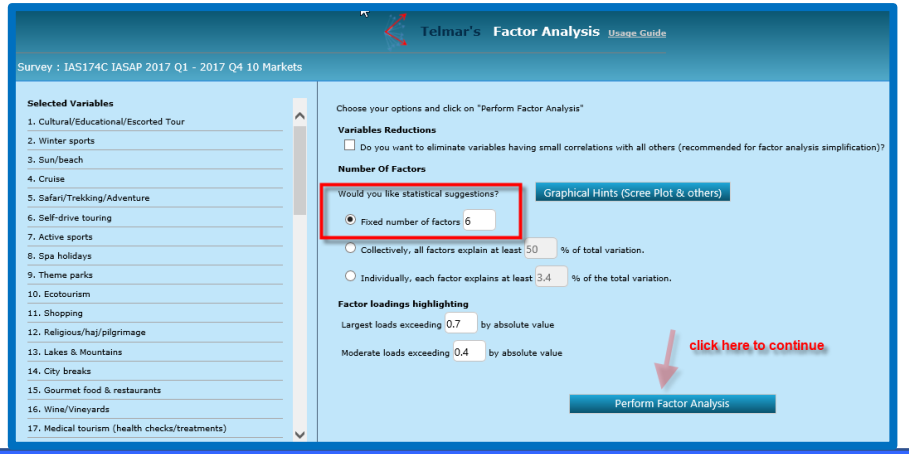


Figure 8



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6. The next screen you see is the report **Figure 9**, It is easier to understand the factors if you multi sort the report **Figure 10**. The program defaults to show only scores above 0.4.
7. The scores can be between +1 and -1. 1 is a positive high and 0 is low a minus number means negative to the row/variable/question and is also interesting. The calculations and how to read and use the factor analysis report are explained in our complementary sister document "How do I run and interpret a factor analysis".
8. The report can be exported to excel (button top right) **Export factor loadings to Excel** for interpretation. The factors that we find on the report **Figure 12** need to be interpreted by the user and our interpretation is summarised in **Figure 13.**
9. If you are happy with the factors you can export the scores clustering (button top right) **Export factors to study data.**
10. The export box appears **Figure 14** give it a name and leave the tick on export factors for cluster and click **ok**. The program tells you when they have been successfully exported. They will now show in own code, under User in SurveyTime. **Figure 15.**
11. The program will now display the factors. Enter the table base in your table and then enter the factors in as rows and click on cluster **Figure 16**
12. The program asks for a file name, input a name and click run cluster analysis.
13. The program will create the clusters and they will be found under own codes **Figure 17**
14. The program displays from 2 to 20 solutions. Here we show the 5 solution. Choose your preferred solution and enter these as columns
15. The following runs are recommended
    i. Demographics
    ii. Your original inputs
    iii. Media

Figure 9

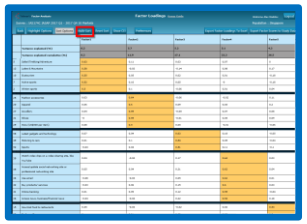

Figure 10

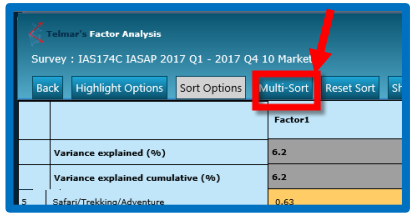

Figure 11

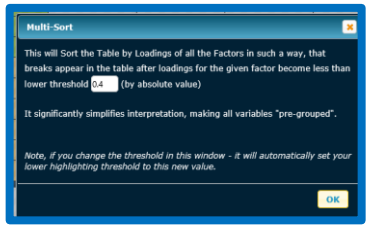

Figure 12

IAS174C Singapore Audience 725000 Sample 2000	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
Variance explained (%)	6.2	5.7	5.2	5.1	4.3	4
Variance explained cumulative (%)	6.2	11.9	17.1	22.2	26.5	30.5
Safari/Trekking/Adventure	0.63	0.11	0.03	0.07	0	-0.02
Lakes & Mountains	0.58	-0.03	-0.14	0.08	0.17	0.1
Ecotourism	0.55	0.05	0.02	0.01	-0.18	0.22
Active sports	0.52	0.16	0.05	0	-0.18	0.02
Winter sports	0.5	0.1	-0.06	0.01	0.04	0.19
Fashion accessories	0.03	0.64	-0.06	-0.02	0.11	0.01
Apparel	0.06	0.6	0.09	0.03	0.2	-0.07
Jewellery	0.04	0.59	-0.05	0.07	0.08	0.01
Shoes	0	0.59	-0.01	0.04	0.09	-0.05
Pens (US$500 per item)	0.08	0.5	0.05	-0.01	-0.06	0
Latest gadgets and technology	0.07	0.04	0.63	0.18	-0.05	-0.01
Motoring & cars	0.01	0.1	0.54	0.05	-0.04	-0.05
Sports	-0.03	0.04	0.51	0.11	-0.1	-0.2
Watch video clips on a video sharing site like YouTube	0.04	-0.04	0.17	0.64	0.03	0.1
Access/update social networking site or professional networking site	0.05	0.04	0.21	0.62	0.04	0.15
Use email	-0.08	-0.03	0.05	0.62	0.01	-0.02
Buy products/ services	-0.03	0.06	0.15	0.6	0.03	0.1
Online banking	0.01	0.09	0.12	0.55	-0.04	-0.09
Access news business/financial news	-0.04	-0.04	0.22	0.54	0.18	0.04
Gourmet food & restaurants	0.35	-0.04	-0.02	0.02	0.53	0.01
Perfumes/fragrances	0	0.31	0.03	0.02	0.5	0.09
Cooking for pleasure	-0.01	0.02	-0.2	0.17	0.09	0.59
Gardening	-0.01	-0.02	0.09	-0.09	-0.04	0.53
Environment/Ecology/Nature protection	0.03	0.01	0.32	-0.01	0.05	0.51

Figure 13

1. Holidays
2. Fashion
3. technology/cars/sports
4. gourmet food/perfume
5. Use of technology
6. cooking/gardening/nature

Figure 14

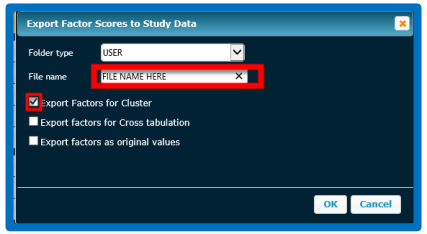

Figure 15

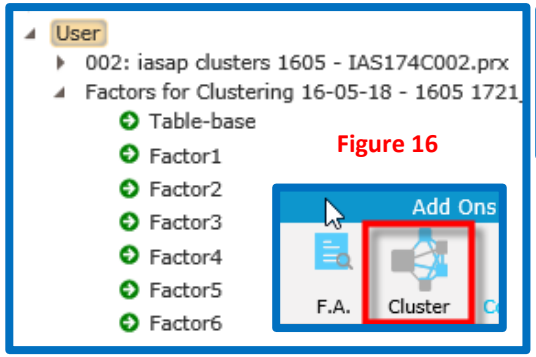

Figure 16

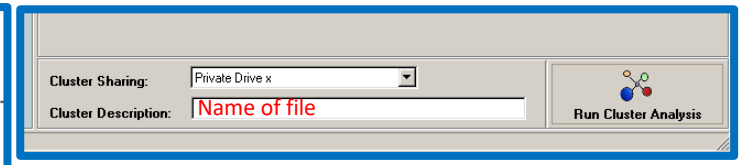

Figure 16

Figure 17

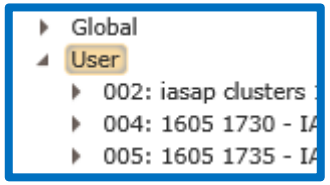
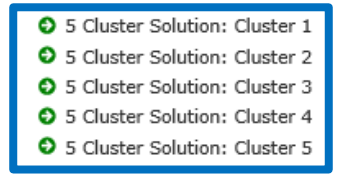
Figure 18