**Obtain a Correlation Matrix to Use as Input to MAP.sas**

Here I shall illustrate with data collected with the Hospital Anxiety and Depression Scale. Obtain the correlation matrix with proc corr and then copy it to a Word document:

Proc Corr Nomiss Data=SAD Outp=Corrs;

Var a1r a2r a3r a4 a5 a6r a7r dp1 dp2 dp3r dp4r dp5r dp6 dp7;

Proc Print; run;

| **Obs** | **\_TYPE\_** | **\_NAME\_** | **a1r** | **a2r** | **a3r** | **a4** | **a5** | **a6r** | **a7r** | **dp1** | **dp2** | **dp3r** | **dp4r** | **dp5r** | **dp6** | **dp7** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | MEAN |  | 1.371 | 1.072 | 1.294 | 1.098 | 0.861 | 1.304 | 0.856 | 0.624 | 0.500 | 1.134 | 0.562 | 0.423 | 0.253 | 0.232 |
| **2** | STD |  | 0.703 | 0.896 | 0.876 | 0.738 | 0.665 | 0.891 | 0.814 | 0.838 | 0.707 | 0.770 | 0.826 | 0.657 | 0.492 | 0.512 |
| **3** | N |  | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 | 194.000 |
| **4** | CORR | a1r | 1.000 | 0.369 | 0.487 | 0.459 | 0.211 | 0.324 | 0.420 | 0.282 | 0.407 | 0.300 | 0.246 | 0.332 | 0.102 | 0.307 |
| **5** | CORR | a2r | 0.369 | 1.000 | 0.520 | 0.357 | 0.408 | 0.265 | 0.582 | 0.209 | 0.360 | 0.309 | 0.281 | 0.353 | 0.170 | 0.280 |
| **6** | CORR | a3r | 0.487 | 0.520 | 1.000 | 0.420 | 0.373 | 0.310 | 0.510 | 0.278 | 0.355 | 0.287 | 0.329 | 0.386 | 0.116 | 0.275 |
| **7** | CORR | a4 | 0.459 | 0.357 | 0.420 | 1.000 | 0.260 | 0.262 | 0.455 | 0.412 | 0.412 | 0.232 | 0.326 | 0.395 | 0.274 | 0.324 |
| **8** | CORR | a5 | 0.211 | 0.408 | 0.373 | 0.260 | 1.000 | 0.326 | 0.451 | 0.129 | 0.116 | 0.168 | 0.115 | 0.195 | 0.108 | 0.187 |
| **9** | CORR | a6r | 0.324 | 0.265 | 0.310 | 0.262 | 0.326 | 1.000 | 0.397 | 0.196 | 0.144 | 0.174 | 0.105 | 0.213 | 0.096 | 0.242 |
| **10** | CORR | a7r | 0.420 | 0.582 | 0.510 | 0.455 | 0.451 | 0.397 | 1.000 | 0.330 | 0.360 | 0.295 | 0.306 | 0.415 | 0.221 | 0.305 |
| **11** | CORR | dp1 | 0.282 | 0.209 | 0.278 | 0.412 | 0.129 | 0.196 | 0.330 | 1.000 | 0.380 | 0.416 | 0.270 | 0.535 | 0.370 | 0.507 |
| **12** | CORR | dp2 | 0.407 | 0.360 | 0.355 | 0.412 | 0.116 | 0.144 | 0.360 | 0.380 | 1.000 | 0.438 | 0.315 | 0.457 | 0.261 | 0.379 |
| **13** | CORR | dp3r | 0.300 | 0.309 | 0.287 | 0.232 | 0.168 | 0.174 | 0.295 | 0.416 | 0.438 | 1.000 | 0.288 | 0.410 | 0.280 | 0.328 |
| **14** | CORR | dp4r | 0.246 | 0.281 | 0.329 | 0.326 | 0.115 | 0.105 | 0.306 | 0.270 | 0.315 | 0.288 | 1.000 | 0.457 | 0.210 | 0.229 |
| **15** | CORR | dp5r | 0.332 | 0.353 | 0.386 | 0.395 | 0.195 | 0.213 | 0.415 | 0.535 | 0.457 | 0.410 | 0.457 | 1.000 | 0.342 | 0.570 |
| **16** | CORR | dp6 | 0.102 | 0.170 | 0.116 | 0.274 | 0.108 | 0.096 | 0.221 | 0.370 | 0.261 | 0.280 | 0.210 | 0.342 | 1.000 | 0.281 |
| **17** | CORR | dp7 | 0.307 | 0.280 | 0.275 | 0.324 | 0.187 | 0.242 | 0.305 | 0.507 | 0.379 | 0.328 | 0.229 | 0.570 | 0.281 | 1.000 |

Delete the top four rows and the leftmost three columns. Then convert table to text, using a blank space to separate values.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1.000 | 0.369 | 0.487 | 0.459 | 0.211 | 0.324 | 0.420 | 0.282 | 0.407 | 0.300 | 0.246 | 0.332 | 0.102 | 0.307 |
| 0.369 | 1.000 | 0.520 | 0.357 | 0.408 | 0.265 | 0.582 | 0.209 | 0.360 | 0.309 | 0.281 | 0.353 | 0.170 | 0.280 |
| 0.487 | 0.520 | 1.000 | 0.420 | 0.373 | 0.310 | 0.510 | 0.278 | 0.355 | 0.287 | 0.329 | 0.386 | 0.116 | 0.275 |
| 0.459 | 0.357 | 0.420 | 1.000 | 0.260 | 0.262 | 0.455 | 0.412 | 0.412 | 0.232 | 0.326 | 0.395 | 0.274 | 0.324 |
| 0.211 | 0.408 | 0.373 | 0.260 | 1.000 | 0.326 | 0.451 | 0.129 | 0.116 | 0.168 | 0.115 | 0.195 | 0.108 | 0.187 |
| 0.324 | 0.265 | 0.310 | 0.262 | 0.326 | 1.000 | 0.397 | 0.196 | 0.144 | 0.174 | 0.105 | 0.213 | 0.096 | 0.242 |
| 0.420 | 0.582 | 0.510 | 0.455 | 0.451 | 0.397 | 1.000 | 0.330 | 0.360 | 0.295 | 0.306 | 0.415 | 0.221 | 0.305 |
| 0.282 | 0.209 | 0.278 | 0.412 | 0.129 | 0.196 | 0.330 | 1.000 | 0.380 | 0.416 | 0.270 | 0.535 | 0.370 | 0.507 |
| 0.407 | 0.360 | 0.355 | 0.412 | 0.116 | 0.144 | 0.360 | 0.380 | 1.000 | 0.438 | 0.315 | 0.457 | 0.261 | 0.379 |
| 0.300 | 0.309 | 0.287 | 0.232 | 0.168 | 0.174 | 0.295 | 0.416 | 0.438 | 1.000 | 0.288 | 0.410 | 0.280 | 0.328 |
| 0.246 | 0.281 | 0.329 | 0.326 | 0.115 | 0.105 | 0.306 | 0.270 | 0.315 | 0.288 | 1.000 | 0.457 | 0.210 | 0.229 |
| 0.332 | 0.353 | 0.386 | 0.395 | 0.195 | 0.213 | 0.415 | 0.535 | 0.457 | 0.410 | 0.457 | 1.000 | 0.342 | 0.570 |
| 0.102 | 0.170 | 0.116 | 0.274 | 0.108 | 0.096 | 0.221 | 0.370 | 0.261 | 0.280 | 0.210 | 0.342 | 1.000 | 0.281 |
| 0.307 | 0.280 | 0.275 | 0.324 | 0.187 | 0.242 | 0.305 | 0.507 | 0.379 | 0.328 | 0.229 | 0.570 | 0.281 | 1.000 |

Now copy the matrix into MAP.sas and put a comma at the end of each row except the last, like this:

/\* Method 1: Manually enter a correlation matrix

(i.e., type the correlations yourself) directly into the

program, as in the example below for Harman's (1967, p 80) data.

Make sure to name the correlation matrix "CR", as in the example. \*/

cr = {

1.000 0.369 0.487 0.459 0.211 0.324 0.420 0.282 0.407 0.300 0.246 0.332 0.102 0.307,

0.369 1.000 0.520 0.357 0.408 0.265 0.582 0.209 0.360 0.309 0.281 0.353 0.170 0.280,

0.487 0.520 1.000 0.420 0.373 0.310 0.510 0.278 0.355 0.287 0.329 0.386 0.116 0.275,

0.459 0.357 0.420 1.000 0.260 0.262 0.455 0.412 0.412 0.232 0.326 0.395 0.274 0.324,

0.211 0.408 0.373 0.260 1.000 0.326 0.451 0.129 0.116 0.168 0.115 0.195 0.108 0.187,

0.324 0.265 0.310 0.262 0.326 1.000 0.397 0.196 0.144 0.174 0.105 0.213 0.096 0.242,

0.420 0.582 0.510 0.455 0.451 0.397 1.000 0.330 0.360 0.295 0.306 0.415 0.221 0.305,

0.282 0.209 0.278 0.412 0.129 0.196 0.330 1.000 0.380 0.416 0.270 0.535 0.370 0.507,

0.407 0.360 0.355 0.412 0.116 0.144 0.360 0.380 1.000 0.438 0.315 0.457 0.261 0.379,

0.300 0.309 0.287 0.232 0.168 0.174 0.295 0.416 0.438 1.000 0.288 0.410 0.280 0.328,

0.246 0.281 0.329 0.326 0.115 0.105 0.306 0.270 0.315 0.288 1.000 0.457 0.210 0.229,

0.332 0.353 0.386 0.395 0.195 0.213 0.415 0.535 0.457 0.410 0.457 1.000 0.342 0.570,

0.102 0.170 0.116 0.274 0.108 0.096 0.221 0.370 0.261 0.280 0.210 0.342 1.000 0.281,

0.307 0.280 0.275 0.324 0.187 0.242 0.305 0.507 0.379 0.328 0.229 0.570 0.281 1.000

}; All that is left to do now is to run the program.