E X P L O R E R

Release 3.2

A Program for Common Factor Analysis
and Related Models for Data Analysis

Date and Time : 23-Sep-2011, 13:59:56
Number of variables : 11
Command file : wiscr.txt
Listing file : wiscr_out.lis

Listing of Command File

```
<data>
   cases = 232; variables = 11; format = '(16x,11f4.0)';
   matrix = raw; file = 'wiscr.dat';

<headers>
   'WISC-R Scores for Tabachnick Data';
   'Learning Disabled Children (N = 232)';
   'Three Factors with Hypercon Rotation';

<analysis>
   method = minres;
   matrix = corr;
   trans = hc;
   com = smc;
   number = 3;
   wtfile='wiscr_wt.txt';
   secord; nsec=1;

<details>
  loval=.195; hival=.349;

<labels>
   'Info'; 'Similar'; 'Arith'; 'Verbal'; 'Compre'; 'Digit Sp'; 'Pict Cmp';
   'Pict Arr'; 'Blck Des'; 'Obj Assm'; 'Coding';

<plots>
   trans=3;

<output>
   all;

<end>
```

Program Step:
Univariate Statistics

U n i v a r i a t e S u m m a r y S t a t i s t i c s

No. Name	Mean No.Cases Coef.Var.	Std. Dev. Variance S.E.Mean	Skewness Kurtosis Skew/S.E.	Min. Val. Min. Z Kurt/S.E.	Max. Val. Max. Z Min.Case	Range Z-Range Max.Case
1	9.647	2.964	0.076	3.000	19.000	16.000
Info	232	8.784	-0.046	-2.243	3.156	5.399
	0.307	0.195	0.473	-0.142	40	14
2	10.332	2.724	0.257	3.000	18.000	15.000
Similar	232	7.418	-0.216	-2.692	2.816	5.508
	0.264	0.179	1.601	-0.673	133	14
3	9.241	2.532	0.459	4.000	19.000	15.000
Arith	232	6.409	0.466	-2.070	3.855	5.925
	0.274	0.166	2.856	1.448	119	14
4	10.793	3.009	0.005	2.000	19.000	17.000
Verbal	232	9.057	0.230	-2.922	2.727	5.649
	0.279	0.198	0.028	0.716	53	14
5	10.595	2.838	0.231	2.000	19.000	17.000
Compre	232	8.052	0.656	-3.029	2.962	5.991
	0.268	0.186	1.434	2.039	133	14
6	8.940	2.704	0.371	3.000	18.000	15.000
Digit Sp	232	7.312	-0.085	-2.197	3.351	5.547
	0.302	0.178	2.307	-0.266	133	159
7	10.651	2.728	-0.221	2.000	19.000	17.000
Pict Cmp	232	7.440	0.439	-3.171	3.061	6.232
	0.256	0.179	-1.377	1.366	38	35
8	10.625	2.577	-0.327	2.000	17.000	15.000
Pict Arr	232	6.642	0.280	-3.347	2.474	5.820
	0.243	0.169	-2.036	0.870	74	166
9	10.621	2.874	-0.143	2.000	19.000	17.000
Blck Des	232	8.262	0.342	-2.999	2.915	5.914
	0.271	0.189	-0.891	1.064	38	14
10	10.815	2.884	-0.089	2.000	19.000	17.000
Obj Assm	232	8.316	0.209	-3.057	2.838	5.895
	0.267	0.189	-0.556	0.651	156	126

Program Step:
Univariate Statistics

No. Name	Mean No.Cases Coef.Var.	Std. Dev. Variance S.E.Mean	Skewness Kurtosis Skew/S.E.	Min. Val. Min. Z Kurt/S.E.	Max. Val. Max. Z Min.Case	Range Z-Range Max.Case
11	8.431	2.729	0.229	1.000	16.000	15.000
Coding	232	7.450	-0.356	-2.723	2.773	5.496
	0.324	0.179	1.421	-1.108	207	193

Program Step:
Univariate Statistics

Most Extreme Z-Scores

No.	Case	Var. No.	Variable	Z-value
1	14	3	Arith	3.855
2	159	6	Digit Sp	3.351
3	74	8	Pict Arr	-3.347
4	101	7	Pict Cmp	-3.171
5	38	7	Pict Cmp	-3.171
6	64	1	Info	3.156
7	14	1	Info	3.156
8	35	7	Pict Cmp	3.061
9	156	10	Obj Assm	-3.057
10	133	5	Compre	-3.029

Program Step:
Correlational Analysis

Correlation Matrix

		1 Info	2 Similar	3 Arith	4 Verbal	5 Compre
1	Info	1.000				
2	Similar	0.497	1.000			
3	Arith	0.476	0.422	1.000		
4	Verbal	0.523	0.544	0.406	1.000	
5	Compre	0.629	0.609	0.406	0.543	1.000
6	Digit Sp	0.311	0.358	0.356	0.314	0.365
7	Pict Cmp	0.212	0.324	0.190	0.370	0.276
8	Pict Arr	0.255	0.194	0.218	0.262	0.201
9	Blck Des	0.273	0.401	0.327	0.322	0.323
10	Obj Assm	0.226	0.279	0.134	0.238	0.231
11	Coding	-0.007	0.083	0.158	0.027	0.067

		6 Digit Sp	7 Pict Cmp	8 Pict Arr	9 Blck Des	10 Obj Assm
6	Digit Sp	1.000				
7	Pict Cmp	0.173	1.000			
8	Pict Arr	0.076	0.231	1.000		
9	Blck Des	0.203	0.365	0.360	1.000	
10	Obj Assm	0.197	0.442	0.252	0.474	1.000
11	Coding	0.239	0.070	0.169	0.181	0.122

		11 Coding
11	Coding	1.000

Program Step:
Latent Roots and Vectors

E i g e n v a l u e s o f R

No.	Value	% Trace	Cum. %	No.	Value	% Trace	Cum. %
1	4.08779	37.162	37.162	7	0.60550	5.505	84.788
2	1.37078	12.462	49.623	8	0.52317	4.756	89.544
3	1.11196	10.109	59.732	9	0.43562	3.960	93.504
4	0.88823	8.075	67.807	10	0.40054	3.641	97.145
5	0.64947	5.904	73.711	11	0.31403	2.855	100.000
6	0.61291	5.572	79.283				

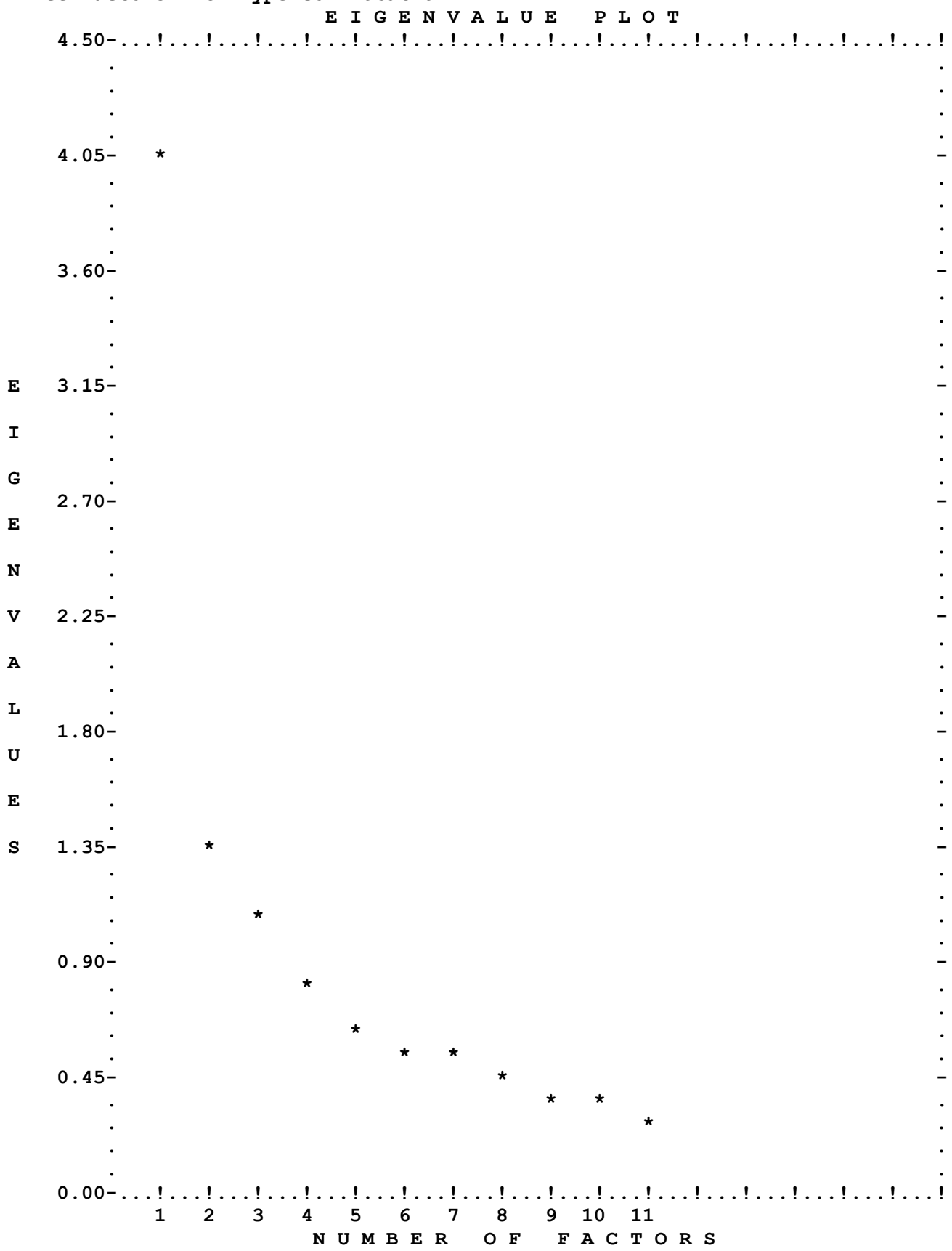
R is the unaltered correlation matrix.

Theta (reliability of first principal component) = 0.831
Condition number (largest/smallest eigenvalue) = 0.13017082E+02

The trace of a matrix is the sum of it's diagonal elements. If the matrix is Gramian (no eigenvalues less than zero), then the trace represents the total variance. If some of the eigenvalues are negative then percentages are based on just non-negative elements.

For this problem the positive trace is: 11.000.

Total iterations for eigenvalues was: 16.


E I G E N V A L U E P L O T
4.50
4.05
3.60
3.15
2.70
2.25
1.80
1.35
0.90
0.45
0.00
E I G E N V A L U E S
1 2 3 4 5 6 7 8 9 10 11
N U M B E R O F F A C T O R S

Program Step:
Multivariate Statistics

M u l t i v a r i a t e S u m m a r y

S t a t i s t i c s

Multivariate skewness	=	3.238
Approximate z	=	4.705
Multivariate kurtosis	=	6.630
Approximate z	=	2.986
Mean Mahalanobis distance	=	10.953
Generalized variance	=	0.21538962E+09
Determinant of R	=	0.38239636E-01

Bartlett's test for complete independence of correlations:

Chi-square	=	739.269
Degrees of freedom	=	55
Approximate z	=	21.737

(Note: Skewness and Kurtosis measures, discussed in Mardia (1972), are expressed as deviations from expected values. Maximum likelihood estimators are used in computing multivariate statistics.)

Program Step:
Multivariate Statistics

M o s t E x t r e m e C a s e s

No.	Case	Mahalanobis D-Square	df	D-Sq./df
1	31	29.240	11	2.658
2	4	27.767	11	2.524
3	14	27.739	11	2.522
4	66	27.097	11	2.463
5	41	26.965	11	2.451
6	100	26.060	11	2.369
7	147	24.394	11	2.218
8	101	24.284	11	2.208
9	10	23.947	11	2.177
10	38	23.303	11	2.118

(Note: If multivariate normality holds,
D-square is approximately distributed
as chi-square in large samples.)

Program Step:
Partial/Multiple Correlation

P a r t i a l C o r r e l a t i o n s

		1 Info	2 Similar	3 Arith	4 Verbal	5 Compre
1	Info	0.502				
2	Similar	0.065	0.488			
3	Arith	0.249	0.105	0.345		
4	Verbal	0.178	0.212	0.096	0.450	
5	Compre	0.385	0.313	0.000	0.159	0.539
6	Digit Sp	0.040	0.096	0.169	0.073	0.109
7	Pict Cmp	-0.072	0.066	0.004	0.199	0.034
8	Pict Arr	0.121	-0.050	0.043	0.101	-0.020
9	Blck Des	-0.048	0.161	0.155	0.015	0.045
10	Obj Assm	0.087	0.032	-0.120	-0.031	-0.018
11	Coding	-0.131	-0.007	0.102	-0.071	0.023

		6 Digit Sp	7 Pict Cmp	8 Pict Arr	9 Blck Des	10 Obj Assm
6	Digit Sp	0.251				
7	Pict Cmp	-0.001	0.292			
8	Pict Arr	-0.097	0.059	0.196		
9	Blck Des	-0.032	0.096	0.209	0.381	
10	Obj Assm	0.088	0.307	0.062	0.325	0.330
11	Coding	0.217	-0.014	0.140	0.084	0.034

		11 Coding
11	Coding	0.121

(Diagonal values are squared-multiple correlations. Off-diagonals are correlations between each variable pair, with all others partialled out.)

Program Step:
Partial/Multiple Correlation

Measures of Sampling Adequacy

1	Info	0.895	5	Compre	0.908	9	Blck Des	0.895
2	Similar	0.935	6	Digit Sp	0.916	10	Obj Assm	0.838
3	Arith	0.923	7	Pict Cmp	0.898	11	Coding	0.619
4	Verbal	0.941	8	Pict Arr	0.893			

Total MSA = 0.905, median = 0.898.
Kaiser-Myer-Olkin statistic = 0.847.

(Note: This is Kaiser's final (1981) version of the MSA. A value of -.999 means that the MSA is unacceptable. KMO is an earlier version of MSA)

Program Step:
Minres Factor Solution

MINRES Iteration Summary

Iteration	Minimization Criterion	Convergence Criterion
1	0.060116	0.093222
2	0.057141	0.055819
3	0.056564	0.032183
4	0.056377	0.019904
5	0.056305	0.013150
6	0.056274	0.009010
7	0.056259	0.006318
8	0.056251	0.004498
9	0.056247	0.003238
10	0.056245	0.002348
11	0.056244	0.001713
12	0.056244	0.001255
13	0.056244	0.000922
14	0.056243	0.000679
15	0.056243	0.000501
16	0.056243	0.000370
17	0.056243	0.000273
18	0.056243	0.000202
19	0.056243	0.000149
20	0.056243	0.000111
21	0.056243	0.000082
22	0.056243	0.000061
23	0.056243	0.000045
24	0.056243	0.000033
25	0.056243	0.000025
26	0.056243	0.000018
27	0.056243	0.000013
28	0.056243	0.000010

Program Step:
Latent Roots and Vectors

F i n a l E i g e n v a l u e s o f R*

No.	Value	% Trace	Cum. %	No.	Value	% Trace	Cum. %
1	3.57628	72.156	72.156	7	-0.03361	0.000	103.342
2	0.83845	16.917	89.072	8	-0.14252	0.000	103.342
3	0.54161	10.928	100.000	9	-0.16462	0.000	103.342
4	0.15326	3.092	103.092	10	-0.21963	0.000	103.342
5	0.01238	0.250	103.342	11	-0.24699	0.000	103.342
6	-0.00927	0.000	103.342				

R* is the 'reduced' correlation matrix.

The trace of a matrix is the sum of it's diagonal elements. If the matrix is Gramian (no eigenvalues less than zero), then the trace represents the total variance. If some of the eigenvalues are negative then percentages are based on just non-negative elements.

For this problem the positive trace is: 4.956.

Program Step:
Initial Factor Solution

C o m m u n a l i t i e s

No.	Name	Initial	Final	Difference (Initial - Final)	Unique Variances
1	Info	0.502	0.577	-0.075	0.423
2	Similar	0.488	0.544	-0.056	0.456
3	Arith	0.345	0.393	-0.048	0.607
4	Verbal	0.450	0.517	-0.068	0.483
5	Compre	0.539	0.625	-0.087	0.375
6	Digit Sp	0.251	0.295	-0.045	0.705
7	Pict Cmp	0.292	0.370	-0.078	0.630
8	Pict Arr	0.196	0.191	0.006	0.809
9	Blck Des	0.381	0.483	-0.102	0.517
10	Obj Assm	0.330	0.493	-0.163	0.507
11	Coding	0.121	0.468	-0.347	0.532
	Means:	0.354	0.451	-0.097	0.549
	Medians:	0.345	0.483	-0.075	0.517

Program Step:
Initial Factor Solution

S u m m a r y o f F i t M e a s u r e s

Method: Unweighted least-squares			
Significance test for number of factors:			
Large sample chi-square	=	42.766, df =	36
Normal deviate	=	0.822	
Moderate sample chi-square	=	41.493	
Normal deviate	=	0.684	
(Test based on Harman, 1976)			

Program Step:
Initial Factor Solution

Initial Loadings

		F 1	F 2	F 3
1	Info	0.692	0.309	0.046
2	Similar	0.725	0.134	0.021
3	Arith	0.579	0.137	-0.195
4	Verbal	0.695	0.157	0.099
5	Compre	0.740	0.279	0.010
6	Digit Sp	0.469	0.057	-0.268
7	Pict Cmp	0.486	-0.297	0.212
8	Pict Arr	0.379	-0.217	-0.001
9	Blck Des	0.583	-0.375	0.050
10	Obj Assm	0.478	-0.475	0.197
11	Coding	0.190	-0.315	-0.577

Program Step:
Residuals Analysis

R e s i d u a l C o r r e l a t i o n s
(Diagonal contains unique variances)

		1 Info	2 Similar	3 Arith	4 Verbal	5 Compre
1	Info	0.423				
2	Similar	-0.048	0.456			
3	Arith	0.041	-0.013	0.607		
4	Verbal	-0.012	0.017	0.001	0.483	
5	Compre	0.031	0.035	-0.059	-0.016	0.375
6	Digit Sp	-0.020	0.015	0.024	0.006	0.004
7	Pict Cmp	-0.042	0.007	-0.009	0.057	-0.003
8	Pict Arr	0.059	-0.052	0.028	0.032	-0.019
9	Blck Des	-0.016	0.028	0.050	-0.029	-0.003
10	Obj Assm	0.032	-0.008	-0.040	-0.040	0.008
11	Coding	-0.014	-0.001	-0.022	0.001	0.020

		6 Digit Sp	7 Pict Cmp	8 Pict Arr	9 Blck Des	10 Obj Assm
6	Digit Sp	0.705				
7	Pict Cmp	0.018	0.630			
8	Pict Arr	-0.090	-0.018	0.809		
9	Blck Des	-0.036	-0.041	0.058	0.517	
10	Obj Assm	0.052	0.027	-0.033	0.007	0.507
11	Coding	0.013	0.007	0.028	-0.019	-0.004

		11 Coding
11	Coding	0.532

(Residual correlations are remainders after subtracting reproduced correlations from original correlations. If a covariance matrix was factored then residuals were standardized.)

Program Step:
Residuals Analysis

Distribution of Standardized Residuals
(Based on sub-diagonal elements of correlation matrix):

Interval	Freq.	Pct.	Histogram
> .5	0	0.0	
.4 - .5	0	0.0	
.3 - .4	0	0.0	
.2 - .3	0	0.0	
.1 - .2	0	0.0	
0 - .1	32	58.2	**********
-.1 - 0	23	41.8	*******
-.2 - -.1	0	0.0	
-.3 - -.2	0	0.0	
-.4 - -.3	0	0.0	
-.5 - -.4	0	0.0	
< -.5	0	0.0	

(Note: Each symbol represents 1.00 correlations.)

Residual Summary Statistics (for sub-diagonal elements):

Minimum value	= -0.090	(between Pict Arr and Digit Sp)
Maximum value	= 0.059	(between Pict Arr and Info)
Average (root-mean-square)	= 0.031	

Program Step:
Residuals Analysis

Largest Residual for Each Variable Pair

1	Info	with	8	Pict Arr =	0.059
2	Similar	with	8	Pict Arr =	-0.052
3	Arith	with	5	Compre =	-0.059
4	Verbal	with	7	Pict Cmp =	0.057
5	Compre	with	3	Arith =	-0.059
6	Digit Sp	with	8	Pict Arr =	-0.090
7	Pict Cmp	with	4	Verbal =	0.057
8	Pict Arr	with	6	Digit Sp =	-0.090
9	Blck Des	with	8	Pict Arr =	0.058
10	Obj Assm	with	6	Digit Sp =	0.052
11	Coding	with	8	Pict Arr =	0.028

Program Step:
Initial Factor Solution

Factor Score Weights

		F 1	F 2	F 3
1	Info	0.187	0.245	0.038
2	Similar	0.182	0.091	0.011
3	Arith	0.119	0.074	-0.174
4	Verbal	0.176	0.091	0.097
5	Compre	0.219	0.248	-0.001
6	Digit Sp	0.078	0.031	-0.197
7	Pict Cmp	0.099	-0.187	0.167
8	Pict Arr	0.056	-0.108	0.003
9	Blck Des	0.150	-0.294	0.046
10	Obj Assm	0.125	-0.373	0.195
11	Coding	0.060	-0.228	-0.550

Program Step:
Initial Factor Solution

Covariance of Score Estimates

	F 1	F 2	F 3
F 1	0.879	0.021	0.009
F 2	0.015	0.622	0.011
F 3	0.006	0.006	0.492

(Estimated score variances are on the diagonal. Covariances are below the diagonal and correlations are above.)

(NOTE: The diagonal values are squared-multiple correlations of factors with variables.)

(Factor scores weights are estimated by regression method.)

Program Step:
Oblique Primary Factors

Oblique Transformation Summary:

Method	= Hypercon
Power	= 4.000
Normalization	= Yes

Program Step:
Oblique Primary Factors

Row - N o r m a l i z e d L o a d i n g s

		F 1	F 2	F 3
1	Info	0.911	0.407	0.061
2	Similar	0.983	0.181	0.028
3	Arith	0.925	0.219	-0.312
4	Verbal	0.966	0.218	0.137
5	Compre	0.936	0.353	0.012
6	Digit Sp	0.864	0.104	-0.493
7	Pict Cmp	0.799	-0.489	0.349
8	Pict Arr	0.868	-0.497	-0.003
9	Blck Des	0.838	-0.540	0.072
10	Obj Assm	0.682	-0.676	0.280
11	Coding	0.278	-0.460	-0.843

Program Step:
Oblique Primary Factors

T a r g e t M a t r i x

		F 1	F 2	F 3
1	Info	1	0	0
2	Similar	1	0	0
3	Arith	1	0	1
4	Verbal	1	0	0
5	Compre	1	0	0
6	Digit Sp	1	0	1
7	Pict Cmp	0	1	0
8	Pict Arr	0	1	0
9	Blck Des	0	1	0
10	Obj Assm	0	1	0
11	Coding	0	0	1

Program Step:
Oblique Primary Factors

Oblique Transformation Matrix

	1	2	3
1	0.734	0.349	0.119
2	0.960	-1.073	-0.177
3	-0.234	0.584	-1.019

Program Step:
Oblique Primary Factors

Hypercon Factor Pattern

		F 1	F 2	F 3
1	Info	0.794	-0.063	-0.019
2	Similar	0.656	0.122	0.041
3	Arith	0.603	-0.059	0.244
4	Verbal	0.638	0.132	-0.045
5	Compre	0.809	-0.035	0.029
6	Digit Sp	0.462	-0.053	0.319
7	Pict Cmp	0.022	0.613	-0.106
8	Pict Arr	0.070	0.365	0.085
9	Blck Des	0.056	0.636	0.085
10	Obj Assm	-0.150	0.791	-0.060
11	Coding	-0.028	0.067	0.666

Sums of Squared Loadings:

F 1	F 2	F 3
2.731	1.587	0.639

Program Step:
Oblique Primary Factors

Factor Correlations

	F 1	F 2	F 3
F 1	1.000		
F 2	0.575	1.000	
F 3	0.049	0.253	1.000

Program Step:
Oblique Primary Factors

F a c t o r S t r u c t u r e

		F 1	F 2	F 3
1	Info	0.757	0.389	0.004
2	Similar	0.728	0.509	0.104
3	Arith	0.581	0.349	0.259
4	Verbal	0.712	0.487	0.019
5	Compre	0.790	0.437	0.059
6	Digit Sp	0.447	0.293	0.328
7	Pict Cmp	0.369	0.599	0.050
8	Pict Arr	0.284	0.426	0.180
9	Blck Des	0.425	0.689	0.248
10	Obj Assm	0.302	0.690	0.133
11	Coding	0.044	0.220	0.682

Sums of Squared Loadings:

F 1	F 2	F 3
3.262	2.586	0.769

(Elements of the structure matrix are correlations of the variables with the factors. Column sums of squares are measures of the factor's 'total' contribution, irrespective of the other factors.)

Program Step:
Oblique Reference Factors

R e f e r e n c e S t r u c t u r e

		F 1	F 2	F 3
1	Info	0.645	-0.050	-0.019
2	Similar	0.533	0.096	0.040
3	Arith	0.490	-0.046	0.234
4	Verbal	0.518	0.104	-0.044
5	Compre	0.657	-0.028	0.028
6	Digit Sp	0.375	-0.042	0.306
7	Pict Cmp	0.018	0.482	-0.102
8	Pict Arr	0.057	0.287	0.081
9	Blck Des	0.045	0.500	0.082
10	Obj Assm	-0.122	0.623	-0.057
11	Coding	-0.023	0.053	0.640

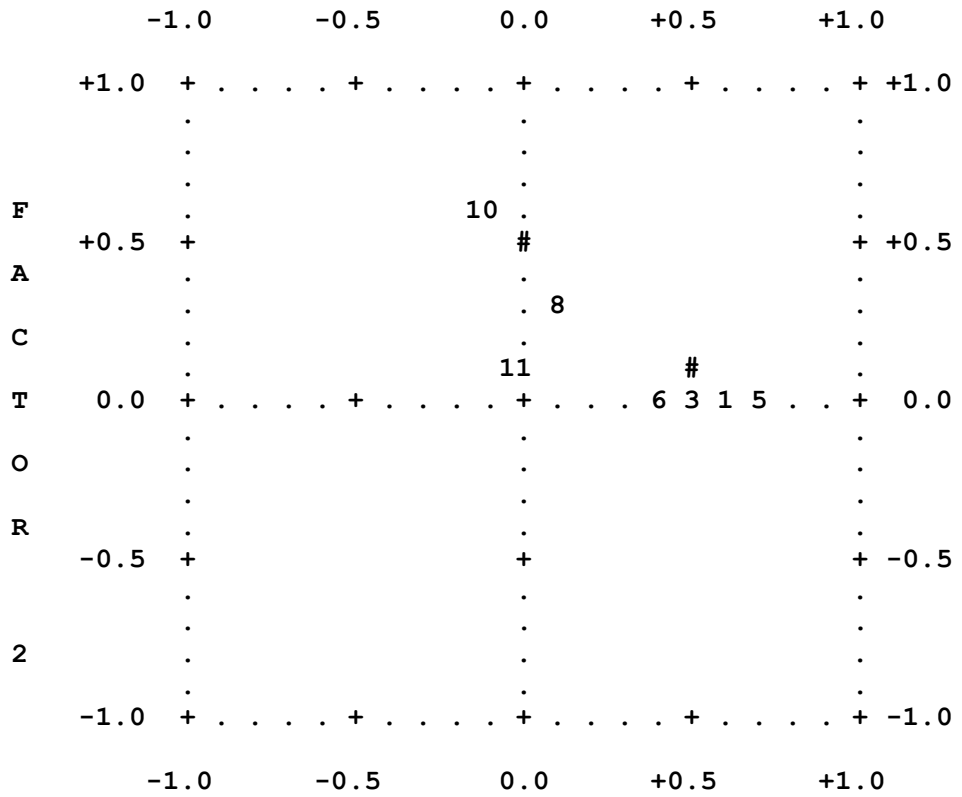
Sums of Squared Loadings:

F 1	F 2	F 3
1.802	0.983	0.590

(Elements of the reference structure matrix are semipartial correlations. Column sums of squares are measures of the factor's 'unique' contribution to the total variance.)

Program Step:
Oblique Reference Factors

F a c t o r L o a d i n g P l o t s



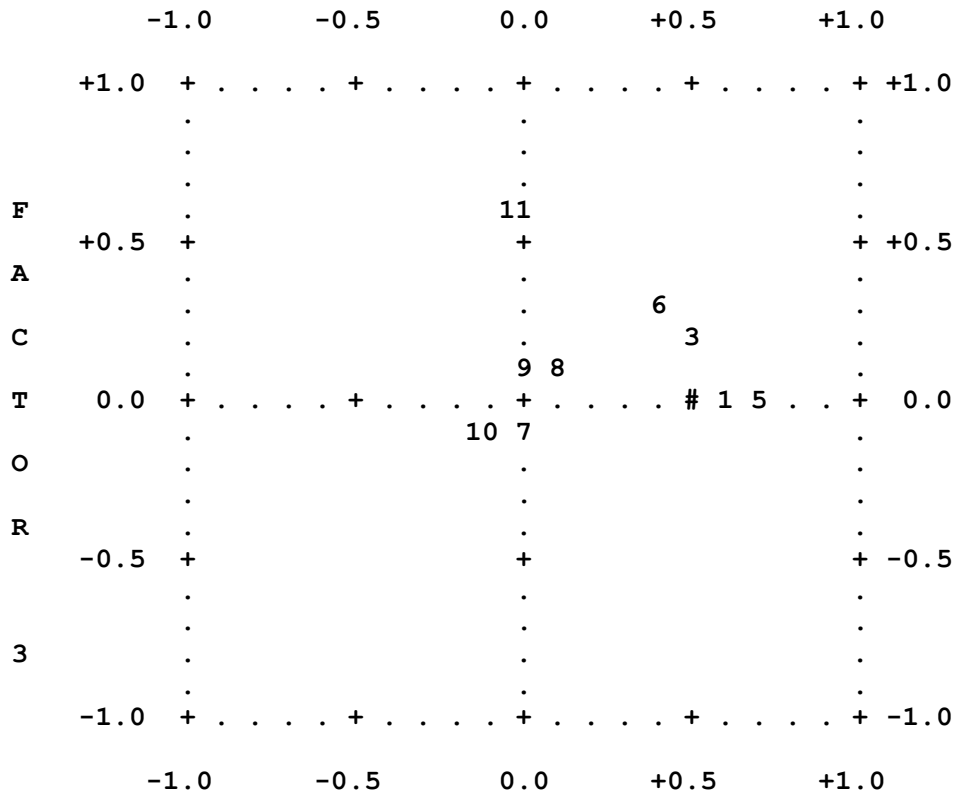
F A C T O R 1

For oblique factors:
correlation = 0.575; angle = 54.93 deg.

(Note: Entries are variable indexes. Pounds [#] denote overlapping values. Reference structure coefficients - proportional to factor pattern - are plotted.)

Program Step:
Oblique Reference Factors

F a c t o r L o a d i n g P l o t s



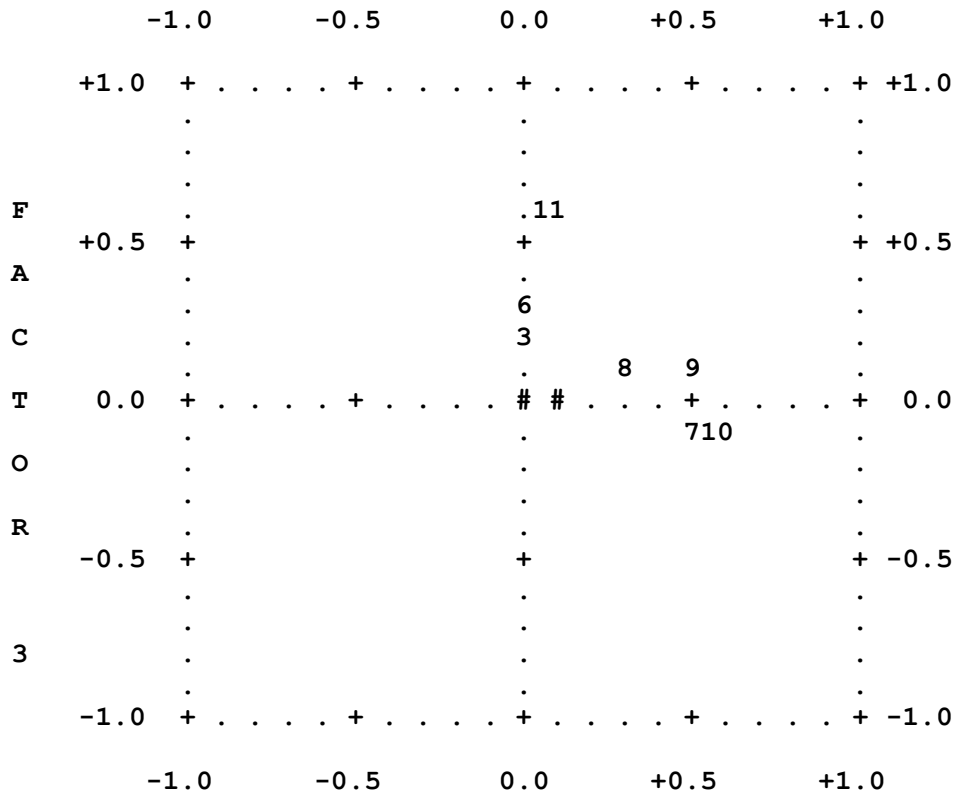
F A C T O R 1

For oblique factors:
correlation = 0.049; angle = 87.19 deg.

(Note: Entries are variable indexes. Pounds [#] denote overlapping values. Reference structure coefficients - proportional to factor pattern - are plotted.)

Program Step:
Oblique Reference Factors

F a c t o r L o a d i n g P l o t s



F A C T O R 2

For oblique factors:
correlation = 0.253; angle = 75.36 deg.

(Note: Entries are variable indexes. Pounds [#] denote overlapping values. Reference structure coefficients - proportional to factor pattern - are plotted.)

Program Step:
Oblique Primary Factors

Indexes of Factor Simplicity

1	Info	0.990	5	Compre	0.995	9	Blck Des	0.963
2	Similar	0.945	6	Digit Sp	0.574	10	Obj Assm	0.940
3	Arith	0.787	7	Pict Cmp	0.955	11	Coding	0.982
4	Verbal	0.932	8	Pict Arr	0.875			

Total IFS = 0.941; median = 0.945.

Loadings in the interval (-.10, +.10) = 16 (48.5%)
Loadings in the interval (-.15, +.15) = 20 (60.6%)
Loadings in the interval (-.20, +.20) = 20 (60.6%)
Hyperplane count (Kaiser-Cerny, 1978) = 20 (60.6%)

Program Step:
Oblique Primary Factors

S o r t e d L o a d i n g s

		F 1	F 2	F 3
5	Compre	0.809	.0	.0
1	Info	0.794	.0	.0
2	Similar	0.656	.0	.0
4	Verbal	0.638	.0	.0
3	Arith	0.603	.0	0.244
6	Digit Sp	0.462	.0	0.319
10	Obj Assm	.0	0.791	.0
9	Blck Des	.0	0.636	.0
7	Pict Cmp	.0	0.613	.0
8	Pict Arr	.0	0.365	.0
11	Coding	.0	.0	0.666

(Note: Values above 0.349 were considered highly salient;
values below 0.195 were set to zero.)

Program Step:
Factor Scale and Item Analysis

F a c t o r S c a l e S u m m a r y S t a t i s t i c s

Factor scales are defined by items with salient loadings above 0.349.
Scale fit indexes are: SFI = 1 - SSQ(nonsalient)/SSQ(total).

Average (RMS) of scale items:

F 1	F 2	F 3
0.671	0.620	0.666

Average (RMS) of nonscale items:

F 1	F 2	F 3
0.036	0.031	0.044

Scale fit indexes:

F 1	F 2	F 3
0.988	0.970	0.694

Overall Scale Fit Index	=	0.944
Bentler's Matrix Simplicity Measure	=	0.990
Lorenzo-Seva's Factor Simplicity Index	=	0.510

Program Step:
Factor Scale and Item Analysis

F a c t o r A n a l y s i s o f S c a l e I t e m s

Scale based on Factor 1

No.	Name	F 1	Commun-ality	Unique-ness
1	Info	0.754	0.569	0.431
2	Similar	0.745	0.554	0.446
3	Arith	0.612	0.374	0.626
4	Verbal	0.705	0.498	0.502
5	Compre	0.783	0.613	0.387
6	Digit Sp	0.493	0.243	0.757

Sum of squares: 2.851
McDonald's omega: 0.842

Total iterations = 3

Program Step:
Factor Scale and Item Analysis

F a c t o r A n a l y s i s o f S c a l e I t e m s

Scale based on Factor 2

No.	Name	F 2	Commun-ality	Unique-ness
7	Pict Cmp	0.587	0.345	0.655
8	Pict Arr	0.430	0.185	0.815
9	Blck Des	0.692	0.479	0.521
10	Obj Assm	0.696	0.484	0.516

Sum of squares: 1.493
McDonald's omega: 0.698

Total iterations = 3

Program Step:
Factor Scale and Item Analysis

Factor Scale Correlations

	F 1	F 2	F 3
F 1	1.000		
F 2	0.465	1.000	
F 3	0.128	0.189	1.000

(Note: These correlations are for scales formed by simple summation of the items which define them. If no values define a scale, then -9.999 is printed)

Program Step:
Factor Scale and Item Analysis

Coefficient alpha for scale items (standardized):

F 1	F 2	F 3
0.831	0.687	0.000

Coefficient alpha for scale items (raw):

F 1	F 2	F 3
0.821	0.648	0.000

(Note: alpha cannot be computed for scales with less than two items.
In this case, a value of zero is printed.)

Program Step:
Factor Scale and Item Analysis

I t e m A n a l y s i s f o r F a c t o r S c a l e s

Scale Based on Factor 1:

No.	Name	Item-Wtd. Total Correlation	Alpha without item: Raw	Standardized
1	Info	0.659	0.776	0.792
2	Similar	0.657	0.785	0.792
3	Arith	0.545	0.802	0.815
4	Verbal	0.626	0.792	0.799
5	Compre	0.697	0.769	0.784
6	Digit Sp	0.438	0.827	0.836

Mean item-total r = 0.604
Standardized alpha= 0.831
Standard error = 0.017
Large sample Z = 48.381
95% C.I. = (0.797, 0.865)

Program Step:
Factor Scale and Item Analysis

I t e m A n a l y s i s f o r F a c t o r S c a l e s

Scale Based on Factor 2:

No.	Name	Item-Wtd. Total Correlation	Alpha without item: Raw	Standardized
7	Pict Cmp	0.456	0.547	0.630
8	Pict Arr	0.357	0.671	0.691
9	Blck Des	0.544	0.508	0.572
10	Obj Assm	0.527	0.530	0.584

Mean item-total r = 0.471
Standardized alpha= 0.687
Standard error = 0.034
Large sample Z = 20.394
95% C.I. = (0.621, 0.753)

Program Step:
Oblique Primary Factors

Factor Score Weights

		F 1	F 2	F 3
1	Info	0.260	0.018	-0.086
2	Similar	0.203	0.097	-0.002
3	Arith	0.128	0.020	0.153
4	Verbal	0.201	0.107	-0.079
5	Compre	0.289	0.035	-0.046
6	Digit Sp	0.073	0.007	0.181
7	Pict Cmp	0.039	0.217	-0.048
8	Pict Arr	0.017	0.106	0.054
9	Blck Des	0.045	0.295	0.113
10	Obj Assm	0.003	0.349	0.008
11	Coding	-0.048	0.072	0.592

Program Step:
Oblique Primary Factors

Covariance of Score Estimates

	F 1	F 2	F 3
F 1	0.860	0.673	0.124
F 2	0.548	0.769	0.345
F 3	0.084	0.221	0.535

(Estimated score variances are on the diagonal. Covariances are below the diagonal and correlations are above.)

(NOTE: The diagonal values are squared-multiple correlations of factors with variables.)

(Factor scores weights are estimated by regression method.)

Program Step:
Second-Order Analysis

Second-order Factor Analysis Summary:

Model:	Common Factor Analysis
Number of factors:	1

Program Step:
Latent Roots and Vectors

E i g e n v a l u e s o f R

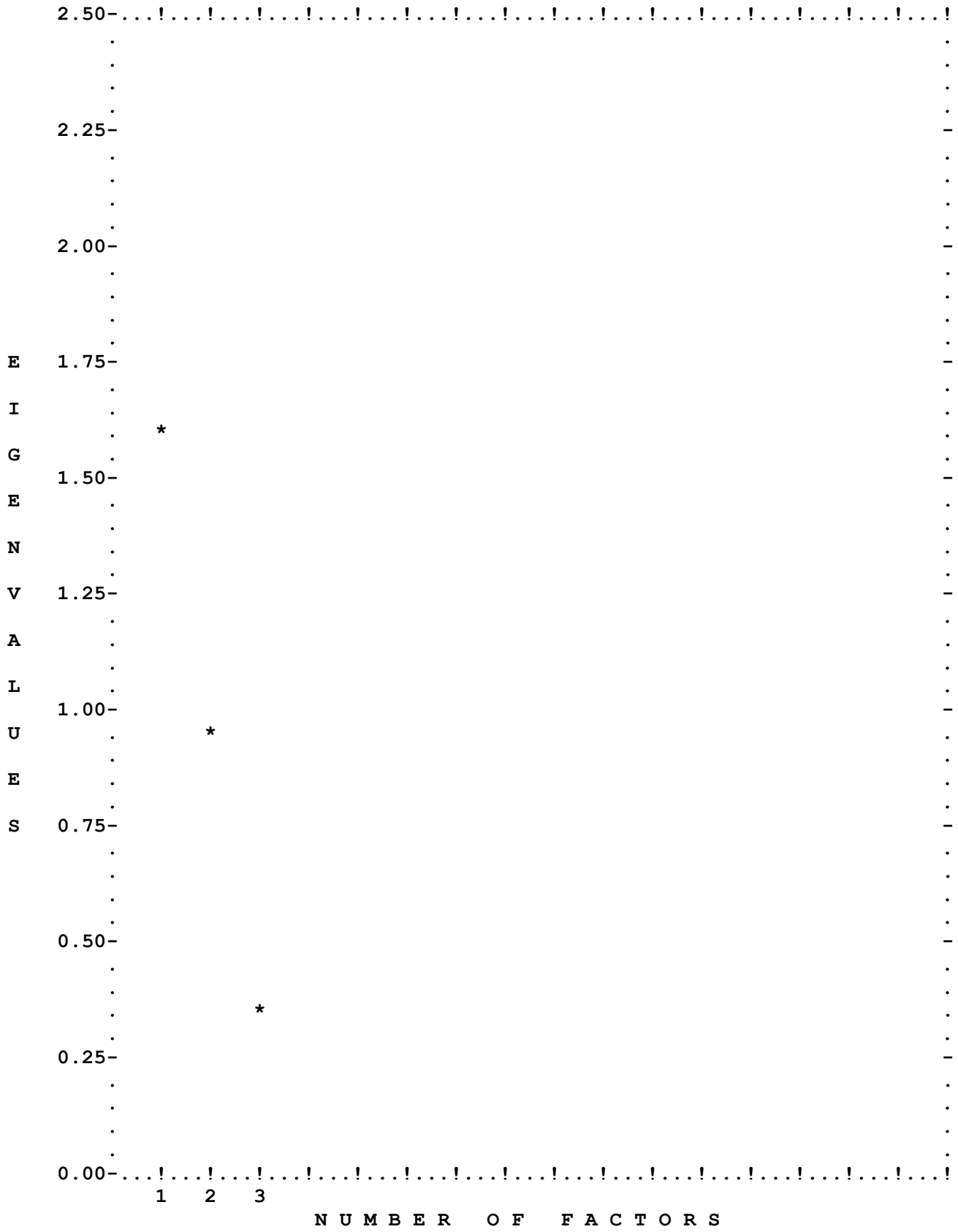
No.	Value	% Trace	Cum. %	No.	Value	% Trace	Cum. %
1	1.64689	54.896	54.896	3	0.38913	12.971	100.000
2	0.96399	32.133	87.029				

R is the first-order factor correlation matrix.

The trace of a matrix is the sum of it's diagonal elements. If the matrix is Gramian (no eigenvalues less than zero), then the trace represents the total variance. If some of the eigenvalues are negative then percentages are based on just non-negative elements.

For this problem the positive trace is: 3.000.

Total iterations for eigenvalues was: 6.


E I G E N V A L U E P L O T
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
E I G E N V A L U E S
1 2 3
N U M B E R O F F A C T O R S

Program Step:
Latent Roots and Vectors

I n i t i a l E i g e n v a l u e s o f R*

No.	Value	% Trace	Cum. %	No.	Value	% Trace	Cum. %
1	1.19826	81.285	81.285	3	-0.07218	0.000	100.000
2	0.27589	18.715	100.000				

R* is the 'reduced' correlation matrix.

The trace of a matrix is the sum of it's diagonal elements. If the matrix is Gramian (no eigenvalues less than zero), then the trace represents the total variance. If some of the eigenvalues are negative then percentages are based on just non-negative elements.

For this problem the positive trace is: 1.474.

*** Warning: Negative eigenvalues found. Matrix is non-Grammian.

Program Step:
Initial Factor Solution

Common factor extraction summary:

Method = Principal Axes

Iteration Summary:

Iteration	Criterion	Pct. Meeting Criterion
1	0.192663	0.00
2	0.028184	0.00
3	0.026962	0.00
4	0.025831	0.00
5	0.024983	0.00
6	0.024003	0.00
7	0.022855	0.00
8	0.021640	0.00
9	0.020428	0.00
10	0.019270	0.00
11	0.018184	0.00
12	0.017183	0.00
13	0.016265	0.00

*** Warning - Improper value for communality on iteration 14.
Communality for item 2 was: 0.10005356E+01.
The solution for the previous iteration was instead retained.

Program Step:
Latent Roots and Vectors

F i n a l E i g e n v a l u e s o f R*

No.	Value	% Trace	Cum. %	No.	Value	% Trace	Cum. %
1	1.34586	94.404	94.404	3	-0.09063	0.000	100.000
2	0.07978	5.596	100.000				

R* is the 'reduced' correlation matrix.

The trace of a matrix is the sum of it's diagonal elements. If the matrix is Gramian (no eigenvalues less than zero), then the trace represents the total variance. If some of the eigenvalues are negative then percentages are based on just non-negative elements.

For this problem the positive trace is: 1.426.

Program Step:
Second-Order Analysis

Second-Order Factor Pattern

		G 1
1	Factor 1	0.569
2	Factor 2	0.988
3	Factor 3	0.214

(NOTE: Rows are first-order factors. G1, G2, etc., are second-order factors.)

Program Step:
Communalities

C o m m u n a l i t i e s

No.	Name	Initial	Final	Difference (Initial - Final)	Unique Variances
1	Factor 1	0.575	0.323	0.251	0.677
2	Factor 2	0.575	0.977	-0.402	0.023
3	Factor 3	0.253	0.046	0.207	0.954
	Means:	0.467	0.449	0.019	0.551
	Medians:	0.575	0.323	0.207	0.677

Program Step:
Second-Order Analysis

S c h m i d - L e i m a n F a c t o r P a t t e r n

		G 1	F 1	F 2	F 3
1	Info	0.385	0.654	-0.010	-0.019
2	Similar	0.502	0.540	0.018	0.041
3	Arith	0.337	0.496	-0.009	0.238
4	Verbal	0.484	0.525	0.020	-0.044
5	Compre	0.431	0.665	-0.005	0.028
6	Digit Sp	0.278	0.380	-0.008	0.312
7	Pict Cmp	0.596	0.018	0.093	-0.104
8	Pict Arr	0.418	0.058	0.055	0.083
9	Blck Des	0.678	0.046	0.096	0.083
10	Obj Assm	0.684	-0.123	0.120	-0.058
11	Coding	0.193	-0.023	0.010	0.651

Sums of Squared Loadings:

2.506	1.848	0.037	0.610

Proportion of variance:

0.501	0.370	0.007	0.122

Reliabilities based on all items:

McDonald's omega (higher-order)	=	0.735
McDonald's omega (total)	=	0.805
Alpha (higher-order)	=	0.727
Alpha (total)	=	0.766

Program Step:
Residuals Analysis

Residual Correlations
(Diagonal contains unique variances)

	F 1	F 2	F 3
F 1	0.677		
F 2	0.013	0.023	
F 3	-0.072	0.042	0.954

(Residual correlations are remainders after subtracting reproduced correlations from original correlations. If a covariance matrix was factored then residuals were standardized.)

Program Step:
Residuals Analysis

Distribution of Standardized Residuals
(Based on sub-diagonal elements of correlation matrix):

Interval	Freq.	Pct.	Histogram
> .5	0	0.0	
.4 - .5	0	0.0	
.3 - .4	0	0.0	
.2 - .3	0	0.0	
.1 - .2	0	0.0	
0 - .1	2	66.7	**********
-.1 - 0	1	33.3	********
-.2 - -.1	0	0.0	
-.3 - -.2	0	0.0	
-.4 - -.3	0	0.0	
-.5 - -.4	0	0.0	
< -.5	0	0.0	

(Note: Each symbol represents 0.12 correlations.)

Residual Summary Statistics (for sub-diagonal elements):

Minimum value	= -0.072	(between Factor 3 and Factor 1)
Maximum value	= 0.042	(between Factor 3 and Factor 2)
Average (root-mean-square)	= 0.042	

Program Step:
Residuals Analysis

Largest Residual for Each Variable Pair

1	Factor 1	with	3	Factor 3 =	-0.072
2	Factor 2	with	3	Factor 3 =	0.042
3	Factor 3	with	1	Factor 1 =	-0.072