

/* This program is posted as ecorr.sas
 It illustrates how to apply PROC FACTOR to
 a correlation matrix, rather than the raw data.
 It is used to apply a varimax rotation to a set
 of principal components computed from the
 correlation matrix of household electricity usage
 data. The correlation matrix is posted as ecorr.dat.

The variables are:

X1 = log(price of gas)
 X2 = log(degree days heating)
 X3 = log(degree days cooling)
 X4 = log(percent homes with
 separate food freezers)
 X5 = log(percent homes with air
 conditioning)
 X6 = log(number of rooms per house)
 X7 = log(percent single-family dwellings)
 X8 = log(percent with electric hot
 water heaters)
 X9 = log(percent with electric heat)
 X10 = log(percent with electric cooking)
 X11 = log(price of electricity)
 X12 = log(population density)
 X13 = log(disposable per capita income)
 X14 = log(percent rural households)
 X15 = log(kilowatt hours per customer) */

/* Enter the data as a TYPE=CORR data set */

```
DATA ecorr (type=corr);
  INFILE "c:\stat501\ecorr.dat";
  INPUT _TYPE_ $ _NAME_ $ R1-R8 #2 R9-R15;
run;
```

```
PROC PRINT data=ecorr;
  title "Factor Analysis";
  title2 "Household use of electricity";
run;
```

Factor Analysis
 Household use of electricity

Obs	_TYPE_	_NAME_	R1	R2	R3	R4
1	CORR	R1	1.0000	0.0531	-0.2534	-0.5470
2	CORR	R2	0.0531	1.0000	-0.6788	0.1495
3	CORR	R3	-0.2534	-0.6788	1.0000	-0.0057
4	CORR	R4	-0.5470	0.1495	-0.0057	1.0000
5	CORR	R5	-0.3526	-0.5654	0.6364	-0.0338
6	CORR	R6	0.3840	0.4034	-0.2522	-0.1381
7	CORR	R7	-0.5495	-0.2078	0.2407	0.7532
8	CORR	R8	0.3701	0.0739	-0.2369	0.3601
9	CORR	R9	0.1075	-0.5306	0.1626	0.0943
10	CORR	R10	0.2272	0.2265	-0.3496	0.3539
11	CORR	R11	0.1627	0.1395	0.0821	-0.4597
12	CORR	R12	0.4486	-0.1444	0.1331	-0.7191
13	CORR	R13	0.3981	0.1762	-0.2842	-0.5509
14	CORR	R14	-0.1854	0.1512	0.0064	0.7003
15	CORR	R15	0.0322	-0.2902	0.0610	0.4712
16	N	N	48.0000	48.0000	48.0000	48.0000
17	MEAN	MEAN	4.7140	6.1120	4.6360	-1.1580
18	STD	STD	0.3210	0.5850	0.6960	0.3600

Obs	R5	R6	R7	R8	R9	R10
1	-0.3526	0.3840	-0.5495	0.3701	0.1075	0.2272
2	-0.5654	0.4034	-0.2078	0.0739	-0.5306	0.2265
3	0.6364	-0.2522	0.2407	-0.2369	0.1626	-0.3496
4	-0.0338	-0.1381	0.7532	0.3601	0.0943	0.3539
5	1.0000	-0.2499	0.2068	-0.3049	0.1958	-0.4495
6	-0.2499	1.0000	-0.0617	0.2069	-0.3057	0.1540
7	0.2068	-0.0617	1.0000	0.2336	0.2249	0.2225
8	-0.3049	0.2069	0.2336	1.0000	0.5368	0.8427
9	0.1958	-0.3057	0.2249	0.5368	1.0000	0.4142
10	-0.4495	0.1540	0.2225	0.8427	0.4142	1.0000
11	-0.0374	0.0519	-0.4992	-0.5602	-0.7233	-0.5064
12	0.1760	0.4812	-0.4984	-0.1842	-0.1032	-0.3561
13	0.0226	0.0991	-0.6581	-0.2217	-0.1025	-0.1885
14	-0.2073	0.1733	0.6601	0.4895	0.0492	0.3828
15	0.1087	-0.1040	0.4516	0.7219	0.8374	0.5444
16	48.0000	48.0000	48.0000	48.0000	48.0000	48.0000
17	-1.2580	1.6130	-0.3270	-1.4090	-2.8970	-0.8050
18	0.7120	0.0490	0.1530	0.7190	0.8210	0.4120

Obs	R11	R12	R13	R14	R15
1	0.1627	0.4486	0.3981	-0.1854	0.0322
2	0.1395	-0.1444	0.1762	0.1512	-0.2902
3	0.0821	0.1331	-0.2842	0.0064	0.0610
4	-0.4597	-0.7191	-0.5509	0.7003	0.4712
5	-0.0374	0.1760	0.0226	-0.2073	0.1087
6	0.0519	0.4812	0.0991	0.1733	-0.1040
7	-0.4992	-0.4984	-0.6581	0.6601	0.4516
8	-0.5602	-0.1842	-0.2217	0.4895	0.7219
9	-0.7233	-0.1032	-0.1025	0.0492	0.8374
10	-0.5064	-0.3561	-0.1885	0.3828	0.5444
11	1.0000	0.2116	0.2248	-0.2926	-0.8526
12	0.2116	1.0000	0.3994	-0.4647	-0.2638
13	0.2248	0.3994	1.0000	-0.6819	-0.2735
14	-0.2926	-0.4647	-0.6819	1.0000	0.4105
15	-0.8526	-0.2638	-0.2735	0.4105	1.0000
16	48.0000	48.0000	48.0000	48.0000	48.0000
17	-3.9560	-2.8130	1.1570	-1.2260	1.9900
18	0.2260	1.3960	0.1420	0.4960	0.2970

/* Compute principal components and apply
a varimax rotation */

PROC FACTOR data=ecorr(type=corr) scree
score method=prin N=5 rotate=varimax C EV
reorder res preplot plot nplot=2 msa;
run;

Correlations

	R1	R2	R3	R4	R5
R1	1.00000	0.05312	-0.25341	-0.54703	-0.35261
R2	0.05312	1.00000	-0.67875	0.14951	-0.56535
R3	-0.25341	-0.67875	1.00000	-0.00572	0.63638
R4	-0.54703	0.14951	-0.00572	1.00000	-0.03384
R5	-0.35261	-0.56535	0.63638	-0.03384	1.00000
R6	0.38397	0.40343	-0.25217	-0.13810	-0.24993
R7	-0.54948	-0.20784	0.24068	0.75315	0.20683
R8	0.37010	0.07388	-0.23686	0.36008	-0.30485
R9	0.10752	-0.53060	0.16260	0.09430	0.19579
R10	0.22715	0.22647	-0.34959	0.35385	-0.44952
R11	0.16271	0.13954	0.08212	-0.45969	-0.03736
R12	0.44857	-0.14443	0.13311	-0.71908	0.17596
R13	0.39810	0.17618	-0.28420	-0.55092	0.02264
R14	-0.18541	0.15116	0.00635	0.70025	-0.20732
R15	0.03219	-0.29024	0.06096	0.47123	0.10872

	R6	R7	R8	R9	R10
R1	0.38397	-0.54948	0.37010	0.10752	0.22715
R2	0.40343	-0.20784	0.07388	-0.53060	0.22647
R3	-0.25217	0.24068	-0.23686	0.16260	-0.34959
R4	-0.13810	0.75315	0.36008	0.09430	0.35385
R5	-0.24993	0.20683	-0.30485	0.19579	-0.44952
R6	1.00000	-0.06174	0.20691	-0.30572	0.15396
R7	-0.06174	1.00000	0.23360	0.22489	0.22252
R8	0.20691	0.23360	1.00000	0.53684	0.84272
R9	-0.30572	0.22489	0.53684	1.00000	0.41419
R10	0.15396	0.22252	0.84272	0.41419	1.00000
R11	0.05185	-0.49920	-0.56022	-0.72330	-0.50636
R12	0.48120	-0.49836	-0.18424	-0.10320	-0.35606
R13	0.09910	-0.65810	-0.22165	-0.10254	-0.18853
R14	0.17331	0.66005	0.48953	0.04922	0.38279
R15	-0.10397	0.45157	0.72189	0.83736	0.54439

	R11	R12	R13	R14	R15
R1	0.16271	0.44857	0.39810	-0.18541	0.03219
R2	0.13954	-0.14443	0.17618	0.15116	-0.29024
R3	0.08212	0.13311	-0.28420	0.00635	0.06096
R4	-0.45969	-0.71908	-0.55092	0.70025	0.47123
R5	-0.03736	0.17596	0.02264	-0.20732	0.10872
R6	0.05185	0.48120	0.09910	0.17331	-0.10397
R7	-0.49920	-0.49836	-0.65810	0.66005	0.45157
R8	-0.56022	-0.18424	-0.22165	0.48953	0.72189
R9	-0.72330	-0.10320	-0.10254	0.04922	0.83736
R10	-0.50636	-0.35606	-0.18853	0.38279	0.54439
R11	1.00000	0.21155	0.22483	-0.29258	-0.85256
R12	0.21155	1.00000	0.39943	-0.46470	-0.26384
R13	0.22483	0.39943	1.00000	-0.68188	-0.27345
R14	-0.29258	-0.46470	-0.68188	1.00000	0.41052
R15	-0.85256	-0.26384	-0.27345	0.41052	1.00000

Factor Analysis
Household use of electricity

Initial Factor Method: Principal Components

Partial Correlations Controlling all other Variables

	R1	R2	R3	R4	R5
R1	1.00000	-0.15626	0.01332	-0.50539	-0.42905
R2	-0.15626	1.00000	-0.36195	0.11404	-0.00726
R3	0.01332	-0.36195	1.00000	0.18556	0.34104
R4	-0.50539	0.11404	0.18556	1.00000	-0.20562
R5	-0.42905	-0.00726	0.34104	-0.20562	1.00000
R6	0.18324	0.31400	-0.05798	-0.05802	-0.01461
R7	0.01313	-0.45915	-0.07495	0.34750	0.33438
R8	0.42714	0.03841	-0.21399	0.39342	0.15698
R9	-0.22399	-0.26737	0.06809	-0.55990	-0.12707
R10	-0.16977	0.09595	0.19011	-0.22439	-0.24242
R11	0.34326	-0.25738	0.19683	0.02933	0.31177
R12	-0.06987	-0.20491	0.25362	-0.39421	0.09760
R13	0.28443	0.17531	-0.19059	0.10742	0.29128
R14	-0.06559	0.22746	0.15752	-0.07363	-0.27711
R15	0.38332	-0.12216	0.02066	0.47888	0.37762

	R6	R7	R8	R9	R10
R1	0.18324	0.01313	0.42714	-0.22399	-0.16977
R2	0.31400	-0.45915	0.03841	-0.26737	0.09595
R3	-0.05798	-0.07495	-0.21399	0.06809	0.19011
R4	-0.05802	0.34750	0.39342	-0.55990	-0.22439
R5	-0.01461	0.33438	0.15698	-0.12707	-0.24242
R6	1.00000	0.38803	-0.12188	-0.24761	0.27184
R7	0.38803	1.00000	-0.10143	0.11379	0.07797
R8	-0.12188	-0.10143	1.00000	0.19104	0.74924
R9	-0.24761	0.11379	0.19104	1.00000	0.04814
R10	0.27184	0.07797	0.74924	0.04814	1.00000
R11	0.10287	-0.43820	0.16273	-0.11995	-0.17914
R12	0.61477	-0.24987	0.41357	-0.15287	-0.48117
R13	0.07544	-0.17164	-0.10549	0.05461	-0.00521
R14	0.13989	0.38987	0.29288	-0.18157	-0.27492
R15	0.18809	-0.35086	0.15086	0.59700	-0.15120

Kaiser's Measure of Sampling Adequacy:
Overall MSA = 0.66544857

R1	R2	R3	R4	R5
0.583630	0.666203	0.715771	0.677215	0.5877764
R6	R7	R8	R9	R10
0.504212	0.697681	0.664670	0.689482	0.665811
R11	R12	R13	R14	R15
0.677749	0.587498	0.810858	0.736071	0.662726

Prior Commuality Estimates: ONE

	R11	R12	R13	R14	R15
R1	0.34326	-0.06987	0.28443	-0.06559	0.38332
R2	-0.25738	-0.20491	0.17531	0.22746	-0.12216
R3	0.19683	0.25362	-0.19059	0.15752	0.02066
R4	0.02933	-0.39421	0.10742	-0.07363	0.47888
R5	0.31177	0.09760	0.29128	-0.27711	0.37762
R6	0.10287	0.61477	0.07544	0.13989	0.18809
R7	-0.43820	-0.24987	-0.17164	0.38987	-0.35086
R8	0.16273	0.41357	-0.10549	0.29288	0.15086
R9	-0.11995	-0.15287	0.05461	-0.18157	0.59700
R10	-0.17914	-0.48117	-0.00521	-0.27492	-0.15120
R11	1.00000	-0.41261	-0.05194	0.26243	-0.59934
R12	-0.41261	1.00000	-0.03452	-0.13767	-0.14686
R13	-0.05194	-0.03452	1.00000	-0.36967	-0.01452
R14	0.26243	-0.13767	-0.36967	1.00000	0.31609
R15	-0.59934	-0.14686	-0.01452	0.31609	1.00000

Eigenvalues of the Correlation Matrix:
Total = 15 Average = 1

	Eigenvalue	Difference	Proportion	Cumulative
1	5.10617000	1.85491236	0.3404	0.3404
2	3.25125764	0.67014314	0.2168	0.5572
3	2.58111450	1.22509732	0.1721	0.7292

The FACTOR Procedure
Initial Factor Method: Principal Components

Eigenvalues of the Correlation Matrix:
Total = 15 Average = 1

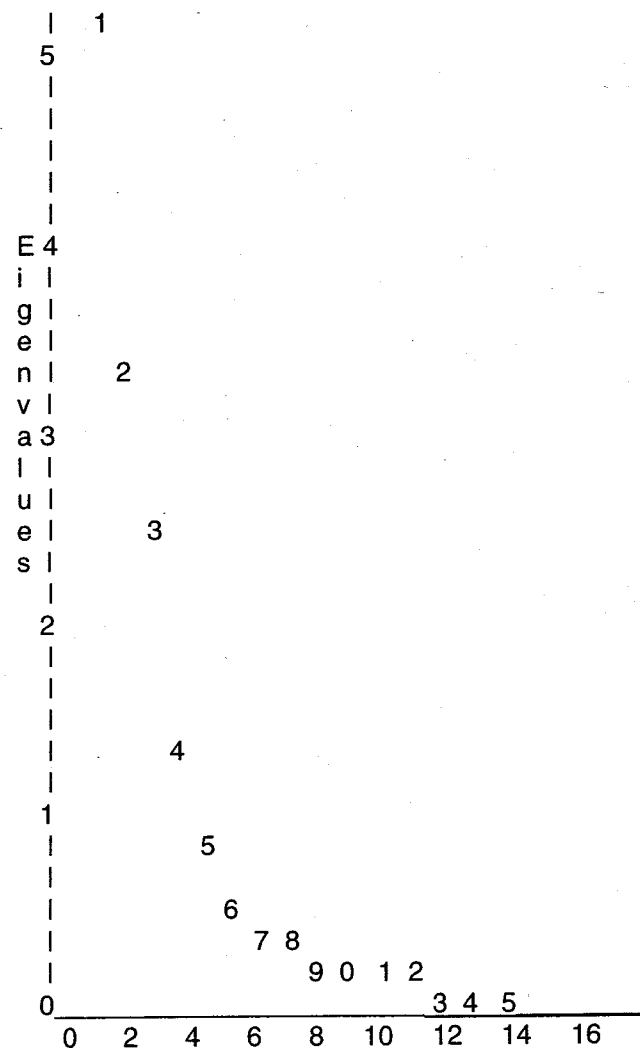
8.115

8.116

	Eigenvalue	Difference	Proportion	Cumulative
4	1.35601718	0.47074891	0.0904	0.8196
5	0.88526827	0.42090842	0.0590	0.8787
6	0.46435985	0.12650148	0.0310	0.9096
7	0.33785837	0.06289433	0.0225	0.9321
8	0.27496404	0.04865578	0.0183	0.9505
9	0.22630827	0.07631954	0.0151	0.9656
10	0.14998873	0.02125442	0.0100	0.9756
11	0.12873430	0.02188351	0.0086	0.9841
12	0.10685079	0.04018833	0.0071	0.9913
13	0.06666246	0.02817106	0.0044	0.9957
14	0.03849140	0.01253718	0.0026	0.9983
15	0.02595422		0.0017	1.0000

5 factors will be retained by the NFACTOR criterion.

Scree Plot of Eigenvalues



Factor Analysis
Household use of electricity

Initial Factor Method: Principal Components

Eigenvectors

	1	2	3	4	5
R1	-0.13200	0.33698	0.33064	0.16726	-0.35192
R2	-0.05214	0.38361	-0.34520	-0.09199	0.28876
R3	0.01598	-0.43433	0.11842	0.30907	-0.24280
R4	0.35595	-0.04265	-0.28583	-0.04335	0.15484
R5	-0.01829	-0.43536	0.16594	0.11723	0.32932
R6	-0.06620	0.30629	-0.02476	0.61400	0.34071
R7	0.34251	-0.18430	-0.17255	0.19850	0.16409
R8	0.30044	0.29943	0.21667	0.10552	-0.14103
R9	0.25311	-0.06015	0.46616	-0.16688	-0.02258
R10	0.28009	0.33221	0.10327	-0.07393	-0.13681
R11	-0.33619	-0.03417	-0.23379	0.08832	-0.43589
R12	-0.27250	0.03281	0.29391	0.43178	0.21710
R13	-0.27806	0.14118	0.21455	-0.29134	0.36935
R14	0.32008	0.07228	-0.24256	0.33480	-0.17132
R15	0.36200	0.02164	0.31153	-0.01933	0.12792

Final Communality Estimates: Total = 13.179828

R1	R2	R3	R4	R5
0.887920	0.885190	0.832556	0.887519	0.8036587
R6	R7	R8	R9	R10
0.942941	0.863550	0.906290	0.937977	0.810915
R11	R12	R13	R14	R15
0.900767	0.900165	0.814299	0.869953	0.936125

Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3
1	0.69435	0.68765	-0.03426
2	0.19799	-0.09228	-0.80671
3	0.63611	-0.54343	0.43765
4	-0.13480	0.39952	0.33512
5	0.23638	-0.25237	-0.21025

	4	5
1	-0.18443	-0.09919
2	0.30604	0.45590
3	0.12299	0.30559
4	0.82314	0.17984
5	0.42383	-0.81030

Factor Pattern

	Factor1	Factor2	Factor3	Factor4	Factor5
R15	0.81800	0.03901	0.50049	-0.02251	0.12036
R4	0.80434	-0.07691	-0.45920	-0.05048	0.14569
R7	0.77396	-0.33231	-0.27721	0.23115	0.15439
R14	0.72328	0.13033	-0.38970	0.38986	-0.16119
R8	0.67891	0.53991	0.34809	0.12287	-0.13270
R10	0.63293	0.59901	0.16591	-0.08609	-0.12872
R12	-0.61576	0.05916	0.47220	0.50280	0.20427
R13	-0.62834	0.25457	0.34470	-0.33926	0.34751
R11	-0.75968	-0.06161	-0.37561	0.10285	-0.41012
R2	-0.11782	0.69170	-0.55459	-0.10712	0.27169
R1	-0.29827	0.60762	0.53121	0.19478	-0.33112
R3	0.03611	-0.78316	0.19025	0.35990	-0.22845
R5	-0.04133	-0.78500	0.26659	0.13651	0.30986
R9	0.57194	-0.10846	0.74892	-0.19433	-0.02125
R6	-0.14960	0.55227	-0.03979	0.71499	0.32057

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5
5.106170	3.251258	2.581114	1.356017	0.8852683

Rotated Factor Pattern

	Factor1	Factor2	Factor3	Factor4	Factor5
R15	0.92555	0.24754	0.12669	-0.04488	-0.01198
R9	0.87322	-0.07596	0.33501	-0.21553	0.10496
R8	0.75179	0.31044	-0.23739	0.12774	0.41480
R10	0.64478	0.28788	-0.43409	-0.03842	0.34983
R11	-0.88942	-0.16799	0.03204	-0.01411	0.28330
R14	0.18946	0.89354	-0.13593	0.11116	0.06931
R7	0.30060	0.76690	0.16524	-0.02283	-0.39652
R4	0.29241	0.75281	-0.21403	-0.20816	-0.38231
R13	-0.03874	-0.86613	-0.21974	0.10421	-0.05888
R3	-0.11149	0.19515	0.88245	-0.02352	-0.05265
R5	0.04030	-0.12452	0.73196	0.04386	-0.49884
R2	-0.21897	0.04517	-0.88970	0.19219	-0.08186
R6	-0.04044	0.07254	-0.28560	0.91612	0.12328
R12	-0.13496	-0.53616	0.30558	0.69020	0.15725
R1	0.14658	-0.38847	-0.11258	0.32629	0.77226

Variance Explained by Each Factor

Factor1	Factor2	Factor3	Factor4	Factor5
3.707741	3.477250	2.807637	1.595051	1.592147

Final Commuality Estimates: Total = 13.179828

R1	R2	R3	R4	R5
0.887920	0.885190	0.832556	0.887522	0.803659
R6	R7	R8	R9	R10
0.942941	0.863550	0.906290	0.937976	0.810915
R11	R12	R13	R14	R15
0.900767	0.900165	0.814298	0.869954	0.936125

Scoring Coefficients Estimated by Regression
Standardized Scoring Coefficients

	Factor1	Factor2	Factor3	Factor4	Factor5
R15	0.27133	-0.03727	0.03555	0.04193	-0.06431
R9	0.26938	-0.12878	0.10708	-0.12331	0.05603
R8	0.16334	0.07685	-0.01761	0.05394	0.24149
R10	0.13762	0.04464	-0.11545	-0.07245	0.19775
R11	-0.31936	0.12574	0.07952	-0.13018	0.35068
R14	-0.07155	0.33657	0.03137	0.12706	0.15733
R7	0.03494	0.19611	0.05071	0.14179	-0.20512
R4	0.03544	0.15078	-0.11125	-0.01906	-0.22082
R13	0.14153	-0.36344	-0.16688	0.02352	-0.27437
R3	-0.09267	0.15820	0.36954	0.04314	0.16884
R5	0.08144	-0.08753	0.20040	0.17152	-0.34322
R2	-0.02738	-0.02775	-0.35587	0.10799	-0.22927
R6	0.01800	0.09182	-0.04221	0.64299	-0.12296
R12	0.04080	-0.09411	0.14527	0.45332	-0.04412
R1	0.01958	-0.01747	0.06809	0.05299	0.48280

/* Perform maximum likelihood factor analysis. Note that a communality exceeds one when more than 5 factors are requested. The first run with 6 factors illustrates how the iterations for finding mle's are terminated when a communality exceeds one. The second run with 6 factors illustrates the use of the Heywood option. The final run with 6 factors uses the ultraHeywood option.*/

```
PROC FACTOR data=ecorr(type=corr) score
method=ML N=5 rotate=varimax reorder res;
priors smc;
run;
```

The FACTOR Procedure
Initial Factor Method: Maximum Likelihood

Prior Communality Estimates: SMC

R1	R2	R3	R4	R5
0.834492	0.806201	0.684913	0.911223	0.720245
R6	R7	R8	R9	R10
0.754597	0.856020	0.918055	0.921964	0.858685
R11	R12	R13	R14	R15
0.896636	0.854632	0.672945	0.820409	0.953965

Preliminary Eigenvalues:
Total = 104.230926 Average = 6.94872841

	Eigenvalue	Difference	Proportion	Cumulative
1	55.0444690	33.8749979	0.5281	0.5281
2	21.1694712	4.7302555	0.2031	0.7312
3	16.4392157	10.5089359	0.1577	0.8889
4	5.9302798	1.5126224	0.0569	0.9458
5	4.4176574	2.6258823	0.0424	0.9882
6	1.7917750	0.5129747	0.0172	1.0054
7	1.2788003	0.7498580	0.0123	1.0177
8	0.5289424	0.3713547	0.0051	1.0227
9	0.1575877	0.1998026	0.0015	1.0242
10	-0.0422149	0.2696648	-0.0004	1.0238
11	-0.3118797	0.0227481	-0.0030	1.0208
12	-0.3346278	0.1382305	-0.0032	1.0176
13	-0.4728583	0.1872552	-0.0045	1.0131
14	-0.6601135	0.0454647	-0.0063	1.0068
15	-0.7055782		-0.0068	1.0000

5 factors will be retained by the NFACTOR criterion.

Iteration Criterion Ridge Change Communalities

1	2.214864	0.0000	0.1308	0.79653	0.84797	0.70093
				0.88495	0.58941	0.78475
				0.80295	0.94111	0.95630
				0.75162	0.92600	0.92041
				0.59422	0.79816	0.92187
2	2.187298	0.0000	0.0339	0.79687	0.84177	0.71116
				0.89045	0.56451	0.75081
				0.82004	0.92138	0.95034
				0.78453	0.94390	0.93794
				0.58376	0.78353	0.92691
3	2.181211	0.0000	0.0167	0.79170	0.83743	0.71039
				0.88533	0.57247	0.74232
				0.81678	0.93352	0.95354
				0.76780	0.94866	0.95348
				0.57842	0.78620	0.92359
11	2.177641	0.0000	0.0010	0.77541	0.83105	0.71339
				0.88201	0.56746	0.71513
				0.81772	0.94087	0.95302
				0.78248	0.95587	0.97634
				0.57470	0.77831	0.92260

Convergence criterion satisfied.

Significance Tests Based on 48 Observations

Test	DF	Chi-Square	Pr > ChiSq
H0: No common factors	105	678.8043	<.0001
HA: At least one common factor			
H0: 5 Factors are sufficient	40	82.3874	<.0001
HA: More factors are needed			
Chi-Square without Bartlett's Correction		102.34916	
Akaike's Information Criterion		22.34916	
Schwarz's Bayesian Criterion		-52.49888	
Tucker and Lewis's Reliability Coefficient		0.80609	

Eigenvalues of the Weighted Reduced Correlation Matrix: Total = 146.141303 Average = 9.74275354

	Eigenvalue	Difference	Proportion	Cumulative
1	71.2963670	29.9880436	0.4879	0.4879
2	41.3083233	24.4222844	0.2827	0.7705
3	16.8860390	6.8019719	0.1155	0.8861
4	10.0840670	3.5175424	0.0690	0.9551
5	6.5665247	5.4220672	0.0449	1.0000
6	1.1444575	0.2934936	0.0078	1.0078
7	0.8509639	0.4078810	0.0058	1.0137
8	0.4430829	0.2438292	0.0030	1.0167
9	0.1992538	0.1748548	0.0014	1.0180
10	0.0243990	0.3260598	0.0002	1.0182
11	-0.3016608	0.1265287	-0.0021	1.0162
12	-0.4281895	0.1089605	-0.0029	1.0132
13	-0.5371500	0.0945948	-0.0037	1.0095
14	-0.6317448	0.1316852	-0.0043	1.0052
15	-0.7634300		-0.0052	1.0000

Squared Canonical Correlations

Factor1	Factor2	Factor3	Factor4	Factor5
0.98616805	0.97636399	0.94409047	0.90978041	
0.86783893				

Initial Factor Method: Maximum Likelihood

Factor Pattern

	Factor1	Factor2	Factor3	Factor4	Factor5
R15	0.85737	0.42686	-0.03657	0.03191	0.05423
R4	0.71819	-0.44260	0.06845	0.39718	0.08887
R9	0.68128	0.57621	-0.29240	-0.26700	0.00797
R8	0.67866	0.35427	0.54301	-0.11036	0.21865
R10	0.65837	0.12712	0.54675	-0.18451	0.01606
R7	0.63234	-0.22281	-0.19023	0.52571	0.23586
R14	0.55468	-0.25672	0.31135	0.37750	0.40640
R13	-0.44069	0.24691	0.07527	-0.34766	-0.43920
R11	-0.79888	-0.40481	0.05658	-0.25272	0.29451
R12	-0.66505	0.70926	0.04743	0.16760	0.02548
R1	-0.22274	0.50175	0.49317	-0.45767	0.14547
R2	-0.11561	-0.37092	0.70872	0.10998	-0.40706
R6	-0.26896	0.28801	0.62522	0.40617	0.06124
R3	-0.05809	0.11409	-0.62284	0.16449	0.53107
R5	-0.06105	0.17776	-0.67385	0.20670	0.18779

Variance Explained by Each Factor

Factor	Weighted	Unweighted
Factor1	71.2963670	4.73369407
Factor2	41.3083233	2.21210858
Factor3	16.8860390	2.80796501
Factor4	10.0840670	1.36430073
Factor5	6.5665247	1.06796070

Final Communalities and Variable Weights

Total Communalities: Weighted = 146.14132

Unweighted = 12.186029

Variable	Communalities	Weight
R1	0.77520808	4.4524693
R2	0.83102292	5.9187993
R3	0.71342015	3.4890429
R4	0.88201848	8.4752949
R5	0.56738708	2.3119197
R6	0.71491527	3.5103286
R7	0.81769204	5.4859190
R8	0.94092225	16.9130603
R9	0.95301618	21.2838352
R10	0.78284314	4.5973647
R11	0.95588211	22.6616912
R12	0.97634058	42.2601139
R13	0.57459697	2.3512669
R14	0.77817536	4.5107343
R15	0.92258847	12.9194630

```

PROC FACTOR data=ecorr(type=corr) score
method=ML N=6 rotate=varimax reorder res;
priors smc;
run;

```

NOTE: 6 factors will be retained by the NFACTOR criterion.
 ERROR: Communality greater than 1.0.
 NOTE: The SAS System stopped processing this step because of errors.
 NOTE: PROCEDURE FACTOR used (Total process time):
 real time 0.01 seconds
 cpu time 0.02 seconds

Factor Analysis Household use of electricity

Initial Factor Method: Maximum Likelihood

Prior Communality Estimates: SMC

R1	R2	R3	R4	R5
0.834492	0.806201	0.684913	0.911223	0.720245
R6	R7	R8	R9	R10
0.754597	0.856020	0.918055	0.921964	0.858685
R11	R12	R13	R14	R15
0.896636	0.854632	0.672945	0.820409	0.953965

Preliminary Eigenvalues:
 Total = 104.230926 Average = 6.94872841

	Eigenvalue	Difference	Proportion	Cumulative
1	55.0444690	33.8749979	0.5281	0.5281
2	21.1694712	4.7302555	0.2031	0.7312
3	16.4392157	10.5089359	0.1577	0.8889
4	5.9302798	1.5126224	0.0569	0.9458
5	4.4176574	2.6258823	0.0424	0.9882
6	1.7917750	0.5129747	0.0172	1.0054
7	1.2788003	0.7498580	0.0123	1.0177
8	0.5289424	0.3713547	0.0051	1.0227
9	0.1575877	0.1998026	0.0015	1.0242
10	-0.0422149	0.2696648	-0.0004	1.0238
11	-0.3118797	0.0227481	-0.0030	1.0208
12	-0.3346278	0.1382305	-0.0032	1.0176
13	-0.4728583	0.1872552	-0.0045	1.0131
14	-0.6601135	0.0454647	-0.0063	1.0068
15	-0.7055782		-0.0068	1.0000

6 factors will be retained by the NFACTOR criterion.

Iteration Criterion Ridge Change Communalities

1 1.4717973 0.0000 0.1188 0.81967 0.86493
0.68706

0.91355 0.60148 0.80896
0.84822 0.91492 0.94308
0.83698 0.95201 0.89396

2 1.4127549 0.0000 0.0380 0.81766 0.86866
0.68674

0.90029 0.59605 0.78738
0.86456 0.90597 0.94015
0.85500 0.95385 0.91280
0.61397 0.79185 1.02679

ERROR: Communality greater than 1.0.

PROC FACTOR data=ecorr(type=corr) score
method=ML N=6 rotate=varimax reorder res
heywood;
priors smc;
run;

Factor Analysis
Household use of electricity

Initial Factor Method: Maximum Likelihood

Prior Communality Estimates: SMC

R1	R2	R3	R4	R5
0.834492	0.806201	0.684913	0.911223	0.720245
R6	R7	R8	R9	R10
0.754597	0.856020	0.918055	0.921964	0.858685
R11	R12	R13	R14	R15
0.896636	0.854632	0.672945	0.820409	0.953965

Preliminary Eigenvalues:
Total = 104.230926 Average = 6.94872841

	Eigenvalue	Difference	Proportion	Cumulative
1	55.0444690	33.8749979	0.5281	0.5281
2	21.1694712	4.7302555	0.2031	0.7312
3	16.4392157	10.5089359	0.1577	0.8889
4	5.9302798	1.5126224	0.0569	0.9458
5	4.4176574	2.6258823	0.0424	0.9882
6	1.7917750	0.5129747	0.0172	1.0054
7	1.2788003	0.7498580	0.0123	1.0177
8	0.5289424	0.3713547	0.0051	1.0227
9	0.1575877	0.1998026	0.0015	1.0242
10	-0.0422149	0.2696648	-0.0004	1.0238
11	-0.3118797	0.0227481	-0.0030	1.0208
12	-0.3346278	0.1382305	-0.0032	1.0176
13	-0.4728583	0.1872552	-0.0045	1.0131
14	-0.6601135	0.0454647	-0.0063	1.0068
15	-0.7055782		-0.0068	1.0000

6 factors will be retained by the NFACTOR criterion.

Iteration	Criterion	Ridge	Change	Communalities
1	1.471797	0.0000	0.1188	0.81967 0.86493 0.68706 0.91355 0.60148 0.80896 0.84822 0.91492 0.94308 0.83698 0.95201 0.89396 0.65199 0.79199 0.99910
2	1.468987	0.0000	0.0012	0.81961 0.86505 0.68705 0.91312 0.60130 0.80826 0.84875 0.91463 0.94299 0.83757 0.95207 0.89457 0.65076 0.79199 1.00000
3	1.452929	0.0000	0.0319	0.82113 0.86387 0.68721 0.91161 0.60695 0.78831 0.86647 0.90861 0.94517 0.86628 0.96054 0.90692 0.61887 0.79359 1.00000
10	1.447240	0.0000	0.0008	0.80127 0.86677 0.68291 0.90790 0.60158 0.77261 0.86723 0.92135 0.94260 0.86790 0.97199 0.92466 0.61061 0.78720 1.00000

Convergence criterion satisfied.

Significance Tests Based on 48 Observations

Test	DF	Chi-Square	Pr > ChiSq
H0: No common factors	105	678.8043	<.0001
HA: At least one common factor			
H0: 6 Factors are sufficient	30	53.7891	0.0049
HA: More factors are needed			

Chi-Square without Bartlett's Correction	68.020285
Akaike's Information Criterion	8.020285
Schwarz's Bayesian Criterion	-48.115745
Tucker and Lewis's Reliability Coefficient	0.854895

Squared Canonical Correlations

Factor1	Factor2	Factor3
1.0000000	0.9635486	0.9464925
Factor4	Factor5	Factor6
0.9134693	0.8878631	0.8253223

Eigenvalues of the Weighted Reduced Correlation Matrix:

Total = 67.321845 Average = 4.80870322

	Eigenvalue	Difference	Proportion	Cumulative
1	Infty	Infty		
2	26.4338032	8.7448398	0.3926	0.3926
3	17.6889633	7.1323759	0.2628	0.6554
4	10.5565874	2.6389162	0.1568	0.8122
5	7.9176712	3.1928429	0.1176	0.9298
6	4.7248283	3.6516073	0.0702	1.0000
7	1.0732211	0.4646892	0.0159	1.0159
8	0.6085319	0.2589920	0.0090	1.0250
9	0.3495399	0.2691588	0.0052	1.0302
10	0.0803811	0.2589875	0.0012	1.0314
11	-0.1786064	0.0834154	-0.0027	1.0287
12	-0.2620218	0.2113777	-0.0039	1.0248
13	-0.4733995	0.0285247	-0.0070	1.0178
14	-0.5019242	0.1938064	-0.0075	1.0103
15	-0.6957305		-0.0103	1.0000

Factor Pattern

	Factor1	Factor2	Factor3
R15	1.00000	-0.00000	-0.00000
R9	0.83736	0.30492	-0.17307
R8	0.72189	-0.05486	0.56123
R11	-0.85256	0.09550	0.01270
R12	-0.26384	0.78976	0.10293
R1	0.03219	0.61009	0.59348
R13	-0.27345	0.51483	0.19241
R14	0.41052	-0.61093	0.17592
R7	0.45157	-0.61705	-0.31087
R4	0.47123	-0.81221	-0.06324
R2	-0.29024	-0.39403	0.67608
R10	0.54439	-0.22658	0.59381
R6	-0.10397	0.13299	0.59341
R3	0.06096	0.15870	-0.66084
R5	0.10872	0.22045	-0.69309

	Factor4	Factor5	Factor6
R15	0.00000	0.00000	0.00000
R9	-0.00358	-0.28418	-0.19424
R8	0.14402	0.00506	-0.24789
R11	0.47419	0.08161	0.06589
R12	-0.24873	0.39634	-0.04253
R1	0.27252	-0.00854	-0.03687
R13	-0.13686	-0.27823	0.37094
R14	0.19192	0.39528	-0.14639
R7	-0.11369	0.29168	-0.29646
R4	0.01126	0.13656	0.05750
R2	-0.21073	-0.04107	0.35226
R10	0.02562	-0.24175	-0.32975
R6	-0.22680	0.58208	-0.03919
R3	0.24209	0.31924	-0.23858
R5	0.01516	0.23977	0.05491

Variance Explained by Each Factor

Factor	Weighted	Unweighted
Factor1	53.6177845	4.09602364
Factor2	26.4338032	3.07784016
Factor3	17.6889633	2.95542140
Factor4	10.5565874	0.60570375
Factor5	7.9176712	1.14033914
Factor6	4.7248283	0.65120737

Final Communalities and Variable Weights

Total Communality: Weighted = 120.93964
Unweighted = 12.526535

Variable	Communality	Weight
R1	0.80117088	5.0319072
R2	0.86677431	7.5057725
R3	0.68304744	3.1536851
R4	0.90782600	10.8575972
R5	0.60153204	2.5099278
R6	0.77242606	4.3977972
R7	0.86720076	7.5320592
R8	0.92132747	12.7149739
R9	0.94259667	17.4224383
R10	0.86813880	7.5702175
R11	0.97199793	35.7026512
R12	0.92468768	13.2733141
R13	0.61059108	2.5681241
R14	0.78721835	4.6991644
R15	1.00000000	Infity

Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3
1	0.29729	0.90930	0.12036
2	-0.80405	0.18258	0.39314
3	-0.05639	0.05338	-0.77225
4	0.15212	-0.31843	0.26891
5	0.42099	-0.18678	0.32481
6	-0.24813	-0.02643	-0.23827
	4	5	6
1	-0.06020	0.17326	0.19147
2	0.31646	0.25585	0.00221
3	0.37716	0.50497	-0.01886
4	-0.37530	0.75366	0.30706
5	0.77729	-0.00662	0.27956
6	-0.09461	-0.28543	0.88912

Rotated Factor Pattern

	Factor1	Factor2	Factor3
R4	0.84165	0.24621	-0.18008
R14	0.83527	0.14006	-0.11174
R7	0.82698	0.27092	0.18664
R13	-0.73609	-0.05864	-0.19466
R15	0.29729	0.90930	0.12036
R9	-0.05845	0.86720	0.30732
R8	0.31262	0.63610	-0.26866
R10	0.29448	0.53105	-0.47518
R11	-0.24082	-0.92510	0.06345
R3	0.15821	-0.08128	0.80570
R5	-0.01623	0.05105	0.70387
R2	0.05565	-0.23431	-0.86589
R6	0.04898	-0.07405	-0.28107
R12	-0.57968	-0.08392	0.27122
R1	-0.46744	0.08813	-0.13529
	Factor4	Factor5	Factor6
R4	-0.21277	-0.16692	0.18239
R14	0.09737	0.18747	0.11322
R7	-0.04228	-0.23961	-0.12599
R13	0.05196	-0.02568	0.15515
R15	-0.06020	0.17326	0.19147
R9	-0.22035	0.19032	-0.08898
R8	0.12419	0.57371	-0.04725
R10	-0.04684	0.45124	-0.26037
R11	-0.03443	0.22116	0.06374
R3	-0.02283	-0.03410	-0.02406
R5	-0.02270	-0.28059	0.15489
R2	0.16160	-0.06879	0.16782
R6	0.81343	0.15206	0.02744
R12	0.71008	0.03038	-0.05411
R1	0.30954	0.67733	0.04482

Variance Explained by Each Factor

Factor	Weighted	Unweighted
Factor1	27.2146713	3.55132983
Factor2	52.8450462	3.36279791
Factor3	15.5209498	2.59378311
Factor4	11.9409666	1.41906383
Factor5	11.6648930	1.33644136
Factor6	1.7531111	0.26311942

Final Communalities Estimates and Variable Weights

Total Communality: Weighted = 120.93964
Unweighted = 12.526535

Variable	Communality	Weight
R1	0.80117088	5.0319072
R2	0.86677431	7.5057725
R3	0.68304744	3.1536851
R4	0.90782600	10.8575972
R5	0.60153204	2.5099278
R6	0.77242606	4.3977972
R7	0.86720076	7.5320592
R8	0.92132747	12.7149739
R9	0.94259667	17.4224383
R10	0.86813880	7.5702175
R11	0.97199793	35.7026512
R12	0.92468768	13.2733141
R13	0.61059108	2.5681241
R14	0.78721835	4.6991644
R15	1.00000000	Infy

The FACTOR Procedure Rotation Method: Varimax Scoring Coefficients Estimated by Regression

Squared Multiple Correlations of the Variables with Each Factor

Factor1	Factor2	Factor3
0.94363264	0.98582398	0.93445088
Factor4	Factor5	Factor6
0.90723622	0.92058303	0.84496899

Standardized Scoring Coefficients

	Factor1	Factor2	Factor3
R4	0.30508108	-0.0979582	-0.06714
R14	0.21102308	-0.0773255	0.04197315
R7	0.332508	-0.0497291	0.18318105
R13	-0.1198898	0.03046272	-0.0753252
R15	0.02465747	0.4737201	0.37064356
R9	-0.2344822	0.14779076	0.15978435
R8	0.16266343	-0.0215126	-0.1287266
R10	0.06106116	0.0459356	-0.168573
R11	0.15712747	-0.5143928	0.43227943
R3	0.08181044	-0.0412713	0.17903981
R5	0.01196962	-0.0155756	0.09688054
R2	-0.0786027	0.0326412	-0.4101472
R6	0.09017516	-0.0139923	-0.0222504
R12	-0.0819936	0.05705749	0.23205306
R1	-0.0749239	-0.0070683	-0.0413385

	Factor4	Factor5	Factor6
R4	-0.0006354	-0.125053	0.14667772
R14	0.12754916	0.08729748	-0.025706
R7	0.1553336	-0.052756	-0.2986852
R13	-0.041385	-0.0442065	0.11582112
R15	0.03904568	0.45081328	2.30610856
R9	-0.3731673	0.13640493	-0.678984
R8	0.13418894	0.46283148	-0.4461075
R10	-0.0536278	0.24393617	-0.4445929
R11	-0.2862261	1.02866293	0.90637463
R3	0.03910935	0.03491335	-0.0628653
R5	0.02021703	-0.0466809	0.04308378
R2	0.04909259	-0.1252177	0.35358736
R6	0.31777889	0.01761263	0.02439399
R12	0.72357891	-0.0563861	-0.0110118
R1	0.05046674	0.20803401	0.00350474

PROC FACTOR data=ecorr(type=corr) score
method=ML N=6 rotate=varimax reorder res
ultraheywood;
priors smc;
run;

Iteration	Criterion	Ridge	Change	Communalities
1	1.471797	0.0000	0.1188	0.81967 0.86493 0.68706 0.91355 0.60148 0.80896 0.84822 0.91492 0.94308 0.83698 0.95201 0.89396 0.65199 0.79199 0.99910
2	1.412755	0.0000	0.0380	0.81766 0.86866 0.68674 0.90029 0.59605 0.78738 0.86456 0.90597 0.94015 0.85500 0.95385 0.91280 0.61397 0.79185 1.02679
.				
.				
9	1.391812	0.0000	0.0008	0.79920 0.87725 0.68243 0.88638 0.59264 0.77680 0.86683 0.91247 0.93097 0.83310 0.96376 0.93477 0.60170 0.79005 1.07618

Convergence criterion satisfied.

8,145

8,146

Factor Analysis
Household use of electricity

Initial Factor Method: Maximum Likelihood

Significance Tests Based on 48 Observations

Test	DF	Chi-Square	Pr > ChiSq
H0: No common factors	105	678.8043	<.0001
HA: At least one common factor			
H0: 6 Factors are sufficient	30	51.7290	0.0081
HA: More factors are needed			

Chi-Square without Bartlett's Correction	65.415152
Akaike's Information Criterion	5.415152
Schwarz's Bayesian Criterion	-50.720879
Tucker and Lewis's Reliability Coefficient	0.867461

Squared Canonical Correlations

Factor1	Factor2	Factor3
1.7714457	0.9763440	0.9570529
Factor4	Factor5	Factor6
0.9441528	0.8952156	0.8715173

Eigenvalues of the Weighted Reduced Correlation Matrix:
Total = 95.7896323 Average = 6.84211659

	Eigenvalue	Difference	Proportion	Cumulative
1	Infty	Infty		
2	41.2726619	18.9882067	0.4309	0.4309
3	22.2844552	5.3784653	0.2326	0.6635
4	16.9059899	8.3625856	0.1765	0.8400
5	8.5434042	1.7602563	0.0892	0.9292
6	6.7831479	5.8225428	0.0708	1.0000
7	0.9606051	0.3399403	0.0100	1.0100
8	0.6206649	0.3253598	0.0065	1.0165
9	0.2953051	0.1385636	0.0031	1.0196
10	0.1567415	0.2398012	0.0016	1.0212
11	-0.0830597	0.2145427	-0.0009	1.0204
12	-0.2976024	0.1590182	-0.0031	1.0173
13	-0.4566206	0.0302146	-0.0048	1.0125
14	-0.4868352	0.2223903	-0.0051	1.0074
15	-0.7092255		-0.0074	1.0000

Factor Pattern

	Factor1	Factor2	Factor3
R15	0.53341	0.80356	0.36451
R4	0.14150	0.73850	-0.53993
R7	-0.04643	0.70565	-0.31262
R10	-0.05665	0.65281	0.12718
R8	0.12609	0.64513	0.28093
R9	0.17458	0.61627	0.61494
R14	0.14037	0.56827	-0.40745
R13	0.02949	-0.47715	0.33862
R11	-0.10080	-0.85616	-0.38197
R12	-0.02431	-0.59325	0.64292
R2	-0.05003	-0.06713	-0.40580
R6	0.03677	-0.17666	0.14875
R1	0.13856	-0.30409	0.51103
R3	0.06162	-0.07720	0.07184
R5	0.18560	-0.07403	0.14772

	Factor4	Factor5	Factor6
R15	-0.02805	-0.05312	0.09743
R4	-0.01936	0.15622	0.06837
R7	-0.29246	0.31732	0.28774
R10	0.55239	-0.25604	0.12995
R8	0.51876	-0.17111	0.32105
R9	-0.23506	-0.29269	0.04038
R14	0.20544	0.19066	0.45042
R13	0.18231	-0.13574	-0.45474
R11	0.03225	-0.19533	0.18840
R12	0.07340	0.38774	0.11481
R2	0.73464	0.16389	-0.37283
R6	0.60523	0.54821	0.23500
R1	0.54521	-0.28226	0.22235
R3	-0.68066	0.07639	0.44545
R5	-0.69767	0.18466	0.10039

Variance Explained by Each Factor

Factor	Weighted	Unweighted
Factor1	1.4387992	0.44891177
Factor2	49.7491464	4.68634209
Factor3	24.0286744	2.31023793
Factor4	16.9163187	2.95136231
Factor5	8.5804423	0.99869952
Factor6	6.9077628	1.12906231

Final Communalities Estimates and Variable Weights

Total Communality: Weighted = 107.62114

Unweighted = 12.524616

Variable	Communality	Weight
R1	0.79919048	4.9799691
R2	0.87723337	8.1466744
R3	0.68248104	3.1488895
R4	0.88637815	8.8013545
R5	0.59267736	2.4548070
R6	0.77675686	4.4802030
R7	0.86684257	7.5093562
R8	0.91246946	11.4247154
R9	0.93097122	14.4854669
R10	0.83312006	5.9914794
R11	0.96376103	27.5926284
R12	0.93478220	15.3315243
R13	0.60165665	2.5106952
R14	0.79008600	4.7629270
R15	1.07620948	Infy

Rotation Method: Varimax

Orthogonal Transformation Matrix

	1	2	3
1	0.00752	0.24642	0.12010
2	0.59875	0.73820	-0.13902
3	-0.59898	0.59398	0.29171
4	-0.03095	-0.00183	-0.79320
5	0.27396	0.01544	0.01621
6	0.45458	-0.20317	0.50173

	4	5	6
1	0.03511	0.06074	0.95910
2	0.01033	-0.22476	-0.16310
3	0.20661	0.33919	-0.21348
4	0.47022	0.38121	0.05868
5	-0.57447	0.77016	-0.03589
6	0.63628	0.30377	-0.05672

Rotated Factor Pattern

	Factor1	Factor2	Factor3
R4	0.84113	0.24788	-0.19098
R7	0.83620	0.27076	0.18662
R14	0.83599	0.12313	-0.11487
R13	-0.73785	-0.05387	-0.20631
R15	0.29742	0.92058	0.12895
R9	-0.05260	0.85092	0.31664
R11	-0.25346	-0.92510	0.06127
R3	0.15569	-0.08722	0.80372
R5	-0.01359	0.06255	0.68243
R2	0.05518	-0.22599	-0.88216
R1	-0.48026	0.06267	-0.11749
R8	0.30196	0.60535	-0.24576
R10	0.28609	0.51212	-0.43756
R6	0.04368	-0.07338	-0.28091
R12	-0.58434	-0.07952	0.27276

	Factor4	Factor5	Factor6
R4	-0.15430	-0.20683	0.11990
R7	-0.19565	-0.04715	-0.13775
R14	0.20028	0.10458	0.10859
R13	-0.05957	0.05071	0.07518
R15	0.18167	-0.04657	0.29745
R9	0.22286	-0.22209	-0.06993
R11	0.15594	-0.02417	0.12272
R3	-0.06430	-0.01987	-0.01159
R5	-0.33399	-0.01523	0.10529
R2	-0.07222	0.16743	0.10797
R1	0.66731	0.30810	0.10290
R8	0.61565	0.12145	-0.02589
R10	0.52055	-0.05416	-0.15372
R6	0.14939	0.81671	0.03484
R12	0.01067	0.71141	-0.07993

Rotation Method: Varimax

Final Communality Estimates and Variable Weights
Total Communality: Weighted = 107.62114
Unweighted = 12.524616

Variable	Communality	Weight
R11	0.96376103	27.5926284
R12	0.93478220	15.3315243
R13	0.60165665	2.5106952
R14	0.79008600	4.7629270
R15	1.07620948	Infity

Squared Multiple Correlations of the Variables with Each Factor

Factor1	Factor2	Factor3
Factor1	Factor2	Factor3
0.9416860	1.0134720	0.9395074
Factor4	Factor5	Factor6
0.9001705	0.9145856	1.7063067

Variance Explained by Each Factor

Factor	Weighted	Unweighted
Factor1	26.0118671	3.58000698
Factor2	41.6212964	3.28710593
Factor3	15.2254935	2.55657201
Factor4	10.6897459	1.45136028
Factor5	12.8190027	1.42497628
Factor6	1.2537383	0.22459447

Final Communality Estimates and Variable Weights
Total Communality: Weighted = 107.62114
Unweighted = 12.524616

Variable	Communality	Weight
R1	0.79919048	4.9799691
R2	0.87723337	8.1466744
R3	0.68248104	3.1488895
R4	0.88637815	8.8013545
R5	0.59267736	2.4548070
R6	0.77675686	4.4802030
R7	0.86684257	7.5093562
R8	0.91246946	11.4247154
R9	0.93097122	14.4854669
R10	0.83312006	5.9914794

