

The GLM Procedure
Multivariate Analysis of Variance

Characteristic Roots and Vectors of: E Inverse * H, where H = Type III SSCP Matrix for label E = Error SSCP Matrix														
Characteristic Root	Percent	Characteristic Vector V'EV=1												
		PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13
3.43599736	76.52	0.02986267	0.00555358	0.00154651	0.00143240	0.00506198	0.01174908	0.00643017	-0.00207789	0.00043733	0.00041138	0.00485444	0.00707434	-0.00771508
1.05456043	23.48	-0.00231077	0.02766434	0.00172554	0.00467687	0.00309520	-0.00881475	0.00376809	-0.00411846	-0.00673217	0.00313950	0.00567218	-0.00868252	-0.00528778
0.00000000	0.00	0.00001845	-0.00103641	-0.00006734	-0.00017632	-0.00012593	0.00029987	-0.00015391	0.00015710	0.00024819	0.04128488	-0.00022085	0.00030547	0.00021304
0.00000000	0.00	-0.00033747	-0.00100576	0.02509556	-0.00017689	-0.00017424	0.00013258	-0.00021585	0.00016712	0.00021989	-0.00000000	-0.00025786	0.00019312	0.00028471
0.00000000	0.00	0.00025359	0.00157356	0.00000000	0.00027229	0.00023243	-0.00032975	0.00028637	0.03710491	-0.00036022	0.00000000	0.00036981	-0.00038192	-0.00038525
0.00000000	0.00	-0.00102050	-0.00161777	0.00000000	-0.00029230	0.03009399	0.00000033	-0.00043656	-0.00000000	0.00032552	-0.00000000	-0.00047329	0.00017174	0.00056276
0.00000000	0.00	-0.00063848	-0.00199617	-0.00000000	-0.00035057	0.00000000	0.00027710	-0.00042254	0.00000000	0.00043828	-0.00000000	0.04222512	0.00039239	0.00055821
0.00000000	0.00	0.00100705	0.00179553	-0.00000000	0.00032238	0.00000000	-0.00005635	0.00046103	-0.00000000	-0.00036870	-0.00000000	-0.00000000	-0.00022713	0.04678071
0.00000000	0.00	-0.00019360	-0.00243333	0.00000000	0.02766057	0.00000000	0.00059843	-0.00040568	-0.00000000	0.00056875	-0.00000000	0.00064832	0.00000000	0.00000000
0.00000000	0.00	-0.00124972	-0.00194576	-0.00000000	-0.00000000	-0.00000000	-0.00000955	0.03236728	-0.00000000	0.00039020	-0.00000000	-0.00000000	0.00020007	0.00000000
0.00000000	0.00	-0.00023443	0.00254782	-0.00000000	-0.00000000	-0.00000000	-0.00082145	0.00000000	-0.00000000	0.03742500	0.00000000	0.00000000	-0.000080592	0.00000000
0.00000000	0.00	-0.00124389	0.00252903	0.00000000	0.00000000	0.00000000	-0.00126615	0.00000000	0.00000000	0.00000000	-0.00000000	-0.00000000	0.04533488	0.00000000
0.00000000	0.00	-0.00295825	0.00367940	-0.00000000	-0.00000000	0.00000000	0.03052964	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

MANOVA Test Criteria and F Approximations for the Hypothesis of No Overall label Effect					
H = Type III SSCP Matrix for label					
E = Error SSCP Matrix					
S=2 M=5 N=491.5					
Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.10972101	152.97	26	1970	<.0001
Pillai's Trace	1.28784944	137.16	26	1972	<.0001
Hotelling-Lawley Trace	4.49055779	169.98	26	1719.4	<.0001
Roy's Greatest Root	3.43599736	260.61	13	986	<.0001
NOTE: F Statistic for Roy's Greatest Root is an upper bound.					
NOTE: F Statistic for Wilks' Lambda is exact.					

Characteristic Roots and Vectors of: E Inverse * H, where H = Type III SSCP Matrix for label E = Error SSCP Matrix														
Characteristic Root	Percent	Characteristic Vector V'EV=1												
		PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13
3.38021941	60.94	0.02928302	0.00817757	0.00017725	0.00078719	0.00171598	0.01415303	0.00527320	-0.00519779	0.00216237	0.00017163	0.00314719	0.00789213	-0.00413696
1.60022726	28.85	-0.00596861	0.02915340	-0.00678179	-0.00315828	-0.00517147	0.01026287	0.00967232	-0.01356040	0.00166327	-0.00023382	0.00369309	-0.00003763	-0.00481661
0.56656391	10.21	0.00195752	0.00954075	0.01189606	0.01003387	0.00886881	-0.02519008	-0.00706197	0.00549378	-0.00888741	0.00445718	0.00309497	-0.01604959	-0.00229267
0.00000000	0.00	0.00041499	0.00161364	0.00010691	0.00020419	0.00010704	-0.00009568	0.00026781	-0.00046877	-0.00016807	0.00013329	0.00030578	-0.00034334	0.04690608
0.00000000	0.00	-0.00017745	-0.00060839	-0.000083706	-0.00070141	-0.00062589	0.00174929	0.00050305	-0.00040263	0.00061603	0.04118920	-0.00020971	0.00110217	0.00000000
0.00000000	0.00	-0.00039215	-0.00157747	-0.00033571	-0.00038077	-0.00027350	0.00060066	-0.00008391	0.00028830	0.00032666	-0.00000000	0.04231608	0.00062452	0.00000000
0.00000000	0.00	0.00002091	0.00088056	0.00195498	0.00159749	0.00143873	-0.00426068	-0.00132592	0.00114741	0.03702454	0.00000000	0.00000000	-0.00258923	0.00000000
0.00000000	0.00	-0.00118907	-0.00005092	-0.00288880	-0.00226933	0.02919714	0.00564696	0.00203177	-0.00197996	0.00000000	-0.00000000	-0.00000000	0.00316187	0.00000000
0.00000000	0.00	-0.00015027	0.00357570	-0.00237273	-0.00159415	-0.00000000	0.00488929	0.00243783	0.03583576	0.00000000	-0.00000000	-0.00000000	0.00208695	0.00000000
0.00000000	0.00	-0.00004704	-0.00265295	0.00298113	0.00213918	-0.00000000	-0.00634956	0.03128015	-0.00000000	-0.00000000	0.00000000	0.00000000	-0.00310314	0.00000000
0.00000000	0.00	-0.00064866	0.00166345	0.00347046	0.00284233	0.00000000	-0.00791762	0.00000000	0.00000000	0.00000000	-0.00000000	-0.00000000	0.04351768	0.00000000
0.00000000	0.00	-0.00101017	-0.00089417	-0.00439072	0.02616951	0.00000000	0.00902741	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
0.00000000	0.00	-0.00175392	0.00031861	0.02156196	-0.00000000	0.00000000	0.01583548	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

MANOVA Test Criteria and F Approximations for the Hypothesis of No Overall label Effect					
H = Type III SSCP Matrix for label					
E = Error SSCP Matrix					
S=3 M=4.5 N=491					
Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.05604601	123.02	39	2914.6	<.0001
Pillai's Trace	1.74877943	106.01	39	2958	<.0001
Hotelling-Lawley Trace	5.54701058	139.79	39	2364.1	<.0001
Roy's Greatest Root	3.38021941	256.38	13	986	<.0001
NOTE: F Statistic for Roy's Greatest Root is an upper bound.					

The GLM Procedure
Multivariate Analysis of Variance

Characteristic Roots and Vectors of: E Inverse * H, where
 H = Type III SSCP Matrix for label
 E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector V'EV=1												
		PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13
4.48594837	63.69	0.03349596	0.00937816	0.00358686	0.00201978	-0.00195310	0.00850413	0.00387535	-0.00317451	0.00287700	0.00291479	0.00132578	0.00315155	-0.00089665
1.56318648	22.19	-0.00511865	0.02992950	-0.00555170	-0.00016900	-0.00191219	0.01078018	0.00779161	-0.01273519	0.00144090	0.00266250	0.00361877	0.00037410	-0.00306826
0.69846178	9.92	-0.00028125	0.00761995	0.01834927	0.01107477	-0.00641768	-0.02330578	-0.00756259	0.00754735	0.00182938	0.00101753	-0.00408921	-0.01925230	0.00261702
0.29569596	4.20	-0.00122231	-0.00135178	0.00773885	-0.00057688	-0.02153538	0.01506691	-0.00152872	0.00194224	0.01531587	-0.00983738	-0.01711037	0.00867343	0.00852450
0.00000000	0.00	0.00016861	0.00074389	-0.00183744	-0.00028325	0.00321081	-0.00105449	0.00068264	-0.00086588	-0.00218536	0.00144019	0.00266024	-0.00056981	0.04639429
0.00000000	0.00	-0.00054122	-0.00128823	0.00134522	-0.00028516	-0.00399717	0.00282965	-0.00045141	0.00065406	0.00285820	0.04034340	-0.00336493	0.00188737	0.00000000
0.00000000	0.00	-0.00035240	-0.00209620	0.00338108	0.00150936	-0.00160428	-0.00387822	0.03165757	0.00245560	0.00071343	0.00000000	-0.00169524	-0.00245162	0.00000000
0.00000000	0.00	-0.00004482	0.00360757	-0.00362122	-0.00144893	0.00166491	0.00409128	0.00000000	0.03573916	-0.00077722	-0.00000000	0.00199315	0.00225309	0.00000000
0.00000000	0.00	-0.00041683	-0.00164667	-0.00485589	0.02643674	0.00141676	0.00637531	-0.00000000	0.00000000	-0.00030565	-0.00000000	0.00090921	0.00512930	0.00000000
0.00000000	0.00	0.00005907	-0.00013911	-0.00356009	0.00000000	0.00814157	-0.00474443	0.00000000	-0.00000000	0.03499142	-0.00000000	0.00635576	-0.00243555	0.00000000
0.00000000	0.00	-0.00025756	0.00197615	0.00436271	0.00000000	0.00206397	-0.01044037	0.00000000	0.00000000	0.00000000	-0.00000000	0.00182373	0.04218387	0.00000000
0.00000000	0.00	-0.00051731	-0.00161232	0.00504069	0.00000000	-0.00987191	0.00431051	-0.00000000	0.00000000	-0.00000000	-0.00000000	0.03864438	0.00000000	0.00000000
0.00000000	0.00	-0.00115189	-0.00007954	0.01620265	-0.00000000	0.01817262	0.01479096	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

MANOVA Test Criteria and F Approximations for the Hypothesis of No Overall label Effect

H = Type III SSCP Matrix for label

E = Error SSCP Matrix

S=4 M=4 N=490.5

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.03231537	104.45	52	3809.3	<.0001
Pillai's Trace	2.06702269	81.11	52	3944	<.0001
Hotelling-Lawley Trace	7.04329259	132.97	52	2935	<.0001
Roy's Greatest Root	4.48594837	340.24	13	986	<.0001

NOTE: F Statistic for Roy's Greatest Root is an upper bound.

The GLM Procedure
Multivariate Analysis of Variance

Characteristic Roots and Vectors of: E Inverse * H, where
 H = Type III SSCP Matrix for label
 E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector V'EV=1												
		PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13
4.93572907	59.45	0.03450253	0.01211580	0.00270102	0.00390592	-0.00299955	0.00737901	0.00210881	-0.00254660	0.00435726	0.00047622	0.00395700	0.00353957	-0.00397099
1.39100893	16.75	-0.00492716	0.02477526	-0.01657629	-0.00100930	-0.00131737	0.01197194	0.00720317	-0.01564836	0.00036593	-0.00508881	0.00088002	0.00526514	-0.00614771
0.98594676	11.88	-0.00207652	0.00517769	0.02328122	-0.01984909	-0.00335080	0.01098940	0.01079329	-0.00540366	0.00719520	0.01268732	0.01612014	0.00070383	0.00136032
0.69314281	8.35	0.00150770	-0.01312255	-0.01186468	-0.00941411	0.00680282	0.02573024	0.00965536	-0.00411093	0.00040027	-0.00320200	0.00180605	0.01621928	-0.00244123
0.29652239	3.57	0.00046666	0.00195967	-0.00002813	0.00001906	0.02735623	-0.00699382	0.00173487	-0.00056344	-0.01584401	0.00844912	0.01794052	0.00127972	-0.00678487
0.00000000	0.00	0.00035415	0.00128289	-0.00159330	0.00000302	0.00322619	0.00061761	0.00076503	-0.00101419	-0.00179554	0.00039055	0.00194510	0.00097960	0.04645367
0.00000000	0.00	-0.00055127	0.00133954	0.00322692	0.00220808	-0.00203442	-0.00265072	-0.00263590	0.00179266	0.00017305	0.00064537	-0.00106722	0.04396930	0.00000000
0.00000000	0.00	0.00000099	-0.00051401	-0.00527216	0.00266192	-0.00371462	0.00133643	-0.00115196	-0.00008727	0.00149740	0.03944197	-0.00545100	0.00000000	0.00000000
0.00000000	0.00	-0.00050513	0.00421652	-0.00227836	-0.00241534	0.00045121	0.00516345	0.00302271	0.03540298	0.00044990	-0.00000000	0.00188998	0.00000000	0.00000000
0.00000000	0.00	0.00014776	-0.00151503	0.00002271	0.00595182	-0.00217758	-0.00885277	0.03013773	0.00000000	-0.00068493	0.00000000	-0.00472052	0.00000000	0.00000000
0.00000000	0.00	-0.00030799	-0.00012984	-0.00219355	0.00209642	0.01033592	-0.00424751	0.00000000	-0.00000000	0.03456410	-0.00000000	0.00477737	0.00000000	0.00000000
0.00000000	0.00	-0.00028840	-0.00248071	-0.00489338	0.00569290	-0.01217832	-0.00166932	-0.00000000	0.00000000	-0.00000000	-0.00000000	0.03656647	0.00000000	0.00000000
0.00000000	0.00	-0.00171870	0.00063663	0.00921240	0.02080658	0.00391377	0.01667805	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

MANOVA Test Criteria and F Approximations for the Hypothesis of No Overall label Effect

H = Type III SSCP Matrix for label

E = Error SSCP Matrix

S=5 M=3.5 N=490

Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.01616231	99.60	65	4644.7	<.0001
Pillai's Trace	2.54784536	78.81	65	4930	<.0001
Hotelling-Lawley Trace	8.30234996	125.25	65	3443.9	<.0001
Roy's Greatest Root	4.93572907	374.36	13	986	<.0001

NOTE: F Statistic for Roy's Greatest Root is an upper bound.

The GLM Procedure
Multivariate Analysis of Variance

Characteristic Roots and Vectors of: E Inverse * H, where
 H = Type III SSCP Matrix for label
 E = Error SSCP Matrix

Characteristic Root	Percent	Characteristic Vector V'EV=1												
		PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13
4.48594837	63.69	0.03349596	0.00937816	0.00358686	0.00201978	-0.00195310	0.00850413	0.00387535	-0.00317451	0.00287700	0.00291479	0.00132578	0.00315155	-0.00089665

Characteristic Root	Percent	Characteristic Roots and Vectors of: E Inverse * H, where H = Type III SSCP Matrix for label E = Error SSCP Matrix												
		PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13
5.07433435	56.83	0.03548851	0.00999173	0.00074118	0.00235652	-0.00345136	0.00453775	0.00195312	-0.00241498	0.00168987	0.00120636	0.00293570	0.00266356	-0.00484136
1.32270501	14.81	-0.00414453	0.02586842	0.00101065	-0.01532584	0.00143516	0.01188366	0.0097456	-0.01068625	0.00453641	0.0016911	0.00728835	0.00535367	-0.00403521
1.05934050	11.86	0.00147685	-0.00549568	0.02411026	-0.02537121	0.00075770	-0.00919264	-0.00103237	0.00847797	0.00527682	0.00561020	0.00361445	-0.00951517	0.00309269
0.69744342	7.81	-0.00174345	0.00582341	0.01632675	0.02166499	-0.01473395	-0.00584742	0.00568011	-0.00120099	0.00655122	0.01142311	0.01400968	-0.01124700	0.00122415
0.53252413	5.96	0.00000493	-0.00943259	0.00582583	0.00079381	-0.00032972	0.03242105	0.00970761	-0.00313295	0.00290495	0.00658671	0.00995770	0.00937146	-0.00089055
0.24295500	2.72	0.00034574	-0.00014293	-0.00011257	0.00353501	0.02400962	-0.00587255	0.00577036	-0.00106400	-0.01238965	0.01391260	0.02257394	-0.00404009	-0.00655757
0.00000000	0.00	0.00047178	0.00109016	-0.00092084	0.00036197	0.00291671	0.00064782	0.00112671	-0.00085518	-0.00144211	0.00132865	0.00267263	0.00038591	0.04652800
0.00000000	0.00	-0.00032167	0.00365154	-0.00199565	0.00153458	0.00039113	0.00422829	0.00224459	0.03594623	-0.00004023	0.00035482	0.00199457	0.00202899	0.00000000
0.00000000	0.00	-0.00021053	-0.00003276	0.00425404	0.00146888	-0.00040812	-0.00772987	-0.00083955	0.00000000	-0.00001848	0.00239631	0.00226874	0.04356775	0.00000000
0.00000000	0.00	0.00014929	-0.00123363	-0.00398152	0.00127595	0.00842539	-0.00276022	0.00004296	-0.00000000	0.03527974	0.00195694	0.00373396	0.00000000	0.00000000
0.00000000	0.00	0.00037640	-0.00284074	-0.00246601	-0.00147044	-0.00231213	-0.00771323	0.03010796	-0.00000000	0.00000000	-0.00475634	-0.00833433	0.00000000	0.00000000
0.00000000	0.00	-0.00003845	0.00000782	-0.00566193	-0.00355742	-0.00535237	-0.00069805	0.00000000	-0.00000000	0.00000000	0.03739983	-0.01222879	0.00000000	0.00000000
0.00000000	0.00	-0.00010820	0.00293236	0.00963636	0.00734715	0.01440512	0.00439164	0.00000000	-0.00000000	0.00000000	-0.03056560	0.00000000	0.00000000	0.00000000

MANOVA Test Criteria and F Approximations for the Hypothesis of No Overall label Effect					
H = Type III SSCP Matrix for label E = Error SSCP Matrix					
S=6 M=3 N=489.5					
Statistic	Value	F Value	Num DF	Den DF	Pr > F
Wilks' Lambda	0.01064440	88.82	78	5415	<.0001
Pillai's Trace	2.87307416	69.69	78	5916	<.0001
Hotelling-Lawley Trace	8.92930240	112.13	78	3900.1	<.0001
Roy's Greatest Root	5.07433435	384.87	13	986	<.0001
NOTE: F Statistic for Roy's Greatest Root is an upper bound.					