```
 GET
  FILE='C:\Users\Bahador\Desktop\SPSS-Analysis\EXtremum\Extremum_Time.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
GLM Bar_Nom_Num_Car Bar_Nom_Num_Movie Bar_Num_Num_Car Bar_Num_Num_Movie Bar_Or
d_Num_Car
    Bar_Ord_Num_Movie Line_Nom_Num_Car Line_Nom_Num_Movie Line_Num_Num_Car Lin
e_Num_Num_Movie
    Line_Ord_Num_Car Line_Ord_Num_Movie Pie_Nom_Num_Car Pie_Nom_Num_Movie Pie_
Num_Num_Car
    Pie_Num_Num_Movie Pie_Ord_Num_Car Pie_Ord_Num_Movie Scatter_Nom_Num_Car Sc
atter_Nom_Num_Movie
    Scatter_Num_Num_Car Scatter_Num_Num_Movie Scatter_Ord_Num_Car Scatter_Ord_
Num_Movie
    Table_Nom_Num_Car Table_Nom_Num_Movie Table_Num_Num_Car Table_Num_Num_Movi
e Table_Ord_Num_Car
    Table_Ord_Num_Movie
  /WSFACTOR=visualization 5 Polynomial Datasets 2 Polynomial Attributes 3 Poly
nomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(OVERALL)
  /EMMEANS=TABLES(visualization) COMPARE ADJ(BONFERRONI)
  /EMMEANS=TABLES(Datasets) COMPARE ADJ(BONFERRONI)
  /EMMEANS=TABLES(Attributes) COMPARE ADJ(BONFERRONI)
  /EMMEANS=TABLES(visualization*Datasets)
  /EMMEANS=TABLES(visualization*Attributes)
  /EMMEANS=TABLES(Datasets*Attributes)
  /PRINT=DESCRIPTIVE ETASQ OPOWER HOMOGENEITY
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=visualization Datasets Attributes visualization*Datasets visualiza
tion*Attributes
    Datasets*Attributes visualization*Datasets*Attributes.
```

General Linear Model

Notes

Output Created		24-MAR-2017 15:13:56
Comments		
Input	Data	C:\Users\Bahador\Desktop\SPSS-Analysis\EXtremum\Extremum_Time.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	18
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Notes

Syntax	GLM Bar_Nom_Num_Car Bar_Nom_Num_Movie Bar_Num_Num_Car Bar_Num_Num_Movie Bar_Ord_Num_Car Bar_Ord_Num_Movie Line_Nom_Num_Car Line_Nom_Num_Movie Line_Num_Num_Car Line_Num_Num_Movie Line_Ord_Num_Car Line_Ord_Num_Movie Pie_Nom_Num_Car Pie_Nom_Num_Movie Pie_Num_Num_Car Pie_Num_Num_Movie Pie_Ord_Num_Car Pie_Ord_Num_Movie Scatter_Nom_Num_Car Scatter_Nom_Num_Movie Scatter_Num_Num_Car Scatter_Num_Num_Movie Scatter_Ord_Num_Car Scatter_Ord_Num_Movie Table_Nom_Num_Car Table_Nom_Num_Movie Table_Num_Num_Car Table_Num_Num_Movie Table_Ord_Num_Car Table_Ord_Num_Movie /WSFACTOR=visualization 5 Polynomial Datasets 2 Polynomial Attributes 3 Polynomial /METHOD=SSTYPE(3) /EMMEANS=TABLES (OVERALL) /EMMEANS=TABLES (visualization) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES (Datasets) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES (Attributes) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES (visualization*Datasets) /EMMEANS=TABLES (visualization*Attributes) /EMMEANS=TABLES (Datasets*Attributes) /PRINT=DESCRIPTIVE ETASQ OPOWER HOMOGENEITY /CRITERIA=ALPHA(.05) /WSDESIGN=visualization Datasets Attributes visualization*Datasets

Notes

Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

[DataSet1] C:\Users\Bahador\Desktop\SPSS-Analysis\EXtremum\Extremum_Time.sav

Warnings

The HOMOGENEITY specification in the PRINT subcommand will be ignored because there are no between-subjects factors.

Within-Subjects Factors

Measure: MEASURE_1

visualization	Datasets	Attributes	Dependent Variable
1	1	1	Bar_Nom_Num_Car
		2	Bar_Nom_Num_Movie
		3	Bar_Num_Num_Car
	2	1	Bar_Num_Num_Movie
		2	Bar_Ord_Num_Car
		3	Bar_Ord_Num_Movie
2	1	1	Line_Nom_Num_Car
		2	Line_Nom_Num_Movie
		3	Line_Num_Num_Car
	2	1	Line_Num_Num_Movie
		2	Line_Ord_Num_Car
		3	Line_Ord_Num_Movie

Within-Subjects Factors

Measure: MEASURE_1

visualization	Datasets	Attributes	Dependent Variable
3	1	1	Pie_Nom_Num_Car
		2	Pie_Nom_Num_Movie
		3	Pie_Num_Num_Car
	2	1	Pie_Num_Num_Movie
		2	Pie_Ord_Num_Car
		3	Pie_Ord_Num_Movie
4	1	1	Scatter_Nom_Num_Car
		2	Scatter_Nom_Num_Movie
		3	Scatter_Num_Num_Car
	2	1	Scatter_Num_Num_Movie
		2	Scatter_Ord_Num_Car
		3	Scatter_Ord_Num_Movie
5	1	1	Table_Nom_Num_Car
		2	Table_Nom_Num_Movie
		3	Table_Num_Num_Car
	2	1	Table_Num_Num_Movie
		2	Table_Ord_Num_Car
		3	Table_Ord_Num_Movie

Descriptive Statistics

	Mean	Std. Deviation	N
Bar_Nom_Num_Car	.8697	.20291	18
Bar_Nom_Num_Movie	1.0331	.16999	18
Bar_Num_Num_Car	1.2040	.20566	18
Bar_Num_Num_Movie	1.1346	.16920	18
Bar_Ord_Num_Car	.9845	.20341	18
Bar_Ord_Num_Movie	.9475	.18546	18
Line_Nom_Num_Car	1.0763	.27368	18
Line_Nom_Num_Movie	1.0360	.21710	18
Line_Num_Num_Car	1.0882	.23070	18
Line_Num_Num_Movie	1.0908	.24877	18
Line_Ord_Num_Car	1.1306	.29035	18
Line_Ord_Num_Movie	1.0260	.25876	18
Pie_Nom_Num_Car	1.0930	.15857	18
Pie_Nom_Num_Movie	1.1980	.26673	18
Pie_Num_Num_Car	1.2643	.34578	18
Pie_Num_Num_Movie	1.3067	.20690	18
Pie_Ord_Num_Car	1.0833	.25566	18
Pie_Ord_Num_Movie	1.0941	.19678	18
Scatter_Nom_Num_Car	1.0858	.28807	18
Scatter_Nom_Num_Movie	1.0035	.27633	18
Scatter_Num_Num_Car	1.0789	.26471	18
Scatter_Num_Num_Movie	1.1748	.23353	18
Scatter_Ord_Num_Car	1.0624	.24115	18
Scatter_Ord_Num_Movie	.9845	.19855	18
Table_Nom_Num_Car	1.0323	.20644	18
Table_Nom_Num_Movie	1.0364	.15750	18
Table_Num_Num_Car	1.3494	.17253	18
Table_Num_Num_Movie	1.3775	.19996	18
Table_Ord_Num_Car	1.1378	.24088	18
Table_Ord_Num_Movie	1.0783	.27976	18

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df
visualization	Pillai's Trace	.690	7.785[b]	4.000	14.000
	Wilks' Lambda	.310	7.785[b]	4.000	14.000
	Hotelling's Trace	2.224	7.785[b]	4.000	14.000
	Roy's Largest Root	2.224	7.785[b]	4.000	14.000
Datasets	Pillai's Trace	.052	.928[b]	1.000	17.000
	Wilks' Lambda	.948	.928[b]	1.000	17.000
	Hotelling's Trace	.055	.928[b]	1.000	17.000
	Roy's Largest Root	.055	.928[b]	1.000	17.000
Attributes	Pillai's Trace	.357	4.447[b]	2.000	16.000
	Wilks' Lambda	.643	4.447[b]	2.000	16.000
	Hotelling's Trace	.556	4.447[b]	2.000	16.000
	Roy's Largest Root	.556	4.447[b]	2.000	16.000
visualization * Datasets	Pillai's Trace	.209	.927[b]	4.000	14.000
	Wilks' Lambda	.791	.927[b]	4.000	14.000
	Hotelling's Trace	.265	.927[b]	4.000	14.000
	Roy's Largest Root	.265	.927[b]	4.000	14.000
visualization * Attributes	Pillai's Trace	.510	1.299[b]	8.000	10.000
	Wilks' Lambda	.490	1.299[b]	8.000	10.000
	Hotelling's Trace	1.039	1.299[b]	8.000	10.000
	Roy's Largest Root	1.039	1.299[b]	8.000	10.000
Datasets * Attributes	Pillai's Trace	.710	19.576[b]	2.000	16.000
	Wilks' Lambda	.290	19.576[b]	2.000	16.000
	Hotelling's Trace	2.447	19.576[b]	2.000	16.000
	Roy's Largest Root	2.447	19.576[b]	2.000	16.000
visualization * Datasets * Attributes	Pillai's Trace	.691	2.797[b]	8.000	10.000
	Wilks' Lambda	.309	2.797[b]	8.000	10.000
	Hotelling's Trace	2.237	2.797[b]	8.000	10.000
	Roy's Largest Root	2.237	2.797[b]	8.000	10.000

Multivariate Tests[a]

Effect		Sig.	Partial Eta Squared	Noncent. Parameter
visualization	Pillai's Trace	.002	.690	31.138
	Wilks' Lambda	.002	.690	31.138
	Hotelling's Trace	.002	.690	31.138
	Roy's Largest Root	.002	.690	31.138
Datasets	Pillai's Trace	.349	.052	.928
	Wilks' Lambda	.349	.052	.928
	Hotelling's Trace	.349	.052	.928
	Roy's Largest Root	.349	.052	.928
Attributes	Pillai's Trace	.029	.357	8.894
	Wilks' Lambda	.029	.357	8.894
	Hotelling's Trace	.029	.357	8.894
	Roy's Largest Root	.029	.357	8.894
visualization * Datasets	Pillai's Trace	.476	.209	3.710
	Wilks' Lambda	.476	.209	3.710
	Hotelling's Trace	.476	.209	3.710
	Roy's Largest Root	.476	.209	3.710
visualization * Attributes	Pillai's Trace	.342	.510	10.392
	Wilks' Lambda	.342	.510	10.392
	Hotelling's Trace	.342	.510	10.392
	Roy's Largest Root	.342	.510	10.392
Datasets * Attributes	Pillai's Trace	.000	.710	39.152
	Wilks' Lambda	.000	.710	39.152
	Hotelling's Trace	.000	.710	39.152
	Roy's Largest Root	.000	.710	39.152
visualization * Datasets * Attributes	Pillai's Trace	.065	.691	22.372
	Wilks' Lambda	.065	.691	22.372
	Hotelling's Trace	.065	.691	22.372
	Roy's Largest Root	.065	.691	22.372

Multivariate Tests[a]

Effect		Observed Power[c]
visualization	Pillai's Trace	.978
	Wilks' Lambda	.978
	Hotelling's Trace	.978
	Roy's Largest Root	.978
Datasets	Pillai's Trace	.149
	Wilks' Lambda	.149
	Hotelling's Trace	.149
	Roy's Largest Root	.149
Attributes	Pillai's Trace	.678
	Wilks' Lambda	.678
	Hotelling's Trace	.678
	Roy's Largest Root	.678
visualization * Datasets	Pillai's Trace	.222
	Wilks' Lambda	.222
	Hotelling's Trace	.222
	Roy's Largest Root	.222
visualization * Attributes	Pillai's Trace	.329
	Wilks' Lambda	.329
	Hotelling's Trace	.329
	Roy's Largest Root	.329
Datasets * Attributes	Pillai's Trace	1.000
	Wilks' Lambda	1.000
	Hotelling's Trace	1.000
	Roy's Largest Root	1.000
visualization * Datasets * Attributes	Pillai's Trace	.665
	Wilks' Lambda	.665
	Hotelling's Trace	.665
	Roy's Largest Root	.665

a. Design: Intercept
Within Subjects Design: visualization + Datasets + Attributes + visualization * Datasets + visualization * Attributes + Datasets * Attributes + visualization * Datasets * Attributes

b. Exact statistic

c. Computed using alpha = .05

Mauchly's Test of Sphericity[a]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser
visualization	.581	8.370	9	.500	.819
Datasets	1.000	.000	0	.	1.000
Attributes	.931	1.145	2	.564	.935
visualization * Datasets	.264	20.557	9	.015	.678
visualization * Attributes	.048	42.866	35	.192	.571
Datasets * Attributes	.743	4.753	2	.093	.796
visualization * Datasets * Attributes	.089	34.236	35	.535	.655

Mauchly's Test of Sphericity[a]

Measure: MEASURE_1

Within Subjects Effect	Epsilon[b] Huynh-Feldt	Lower-bound
visualization	1.000	.250
Datasets	1.000	1.000
Attributes	1.000	.500
visualization * Datasets	.819	.250
visualization * Attributes	.807	.125
Datasets * Attributes	.864	.500
visualization * Datasets * Attributes	.980	.125

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept
Within Subjects Design: visualization + Datasets + Attributes + visualization * Datasets + visualization * Attributes + Datasets * Attributes + visualization * Datasets * Attributes

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F
visualization	Sphericity Assumed	1.833	4	.458	10.480
	Greenhouse-Geisser	1.833	3.275	.560	10.480
	Huynh-Feldt	1.833	4.000	.458	10.480
	Lower-bound	1.833	1.000	1.833	10.480
Error(visualization)	Sphericity Assumed	2.974	68	.044	
	Greenhouse-Geisser	2.974	55.671	.053	
	Huynh-Feldt	2.974	68.000	.044	
	Lower-bound	2.974	17.000	.175	
Datasets	Sphericity Assumed	.016	1	.016	.928
	Greenhouse-Geisser	.016	1.000	.016	.928
	Huynh-Feldt	.016	1.000	.016	.928
	Lower-bound	.016	1.000	.016	.928
Error(Datasets)	Sphericity Assumed	.297	17	.017	
	Greenhouse-Geisser	.297	17.000	.017	
	Huynh-Feldt	.297	17.000	.017	
	Lower-bound	.297	17.000	.017	
Attributes	Sphericity Assumed	.283	2	.141	3.582
	Greenhouse-Geisser	.283	1.871	.151	3.582
	Huynh-Feldt	.283	2.000	.141	3.582
	Lower-bound	.283	1.000	.283	3.582
Error(Attributes)	Sphericity Assumed	1.342	34	.039	
	Greenhouse-Geisser	1.342	31.804	.042	
	Huynh-Feldt	1.342	34.000	.039	
	Lower-bound	1.342	17.000	.079	
visualization * Datasets	Sphericity Assumed	.111	4	.028	.581
	Greenhouse-Geisser	.111	2.710	.041	.581
	Huynh-Feldt	.111	3.274	.034	.581
	Lower-bound	.111	1.000	.111	.581
Error (visualization*Datasets)	Sphericity Assumed	3.259	68	.048	
	Greenhouse-Geisser	3.259	46.075	.071	
	Huynh-Feldt	3.259	55.658	.059	
	Lower-bound	3.259	17.000	.192	
visualization * Attributes	Sphericity Assumed	.509	8	.064	1.716
	Greenhouse-Geisser	.509	4.570	.111	1.716

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Sig.	Partial Eta Squared	Noncent. Parameter
visualization	Sphericity Assumed	.000	.381	41.921
	Greenhouse-Geisser	.000	.381	34.321
	Huynh-Feldt	.000	.381	41.921
	Lower-bound	.005	.381	10.480
Error(visualization)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets	Sphericity Assumed	.349	.052	.928
	Greenhouse-Geisser	.349	.052	.928
	Huynh-Feldt	.349	.052	.928
	Lower-bound	.349	.052	.928
Error(Datasets)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Attributes	Sphericity Assumed	.039	.174	7.164
	Greenhouse-Geisser	.042	.174	6.701
	Huynh-Feldt	.039	.174	7.164
	Lower-bound	.076	.174	3.582
Error(Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
visualization * Datasets	Sphericity Assumed	.678	.033	2.322
	Greenhouse-Geisser	.614	.033	1.573
	Huynh-Feldt	.645	.033	1.901
	Lower-bound	.457	.033	.581
Error (visualization*Datasets)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
visualization * Attributes	Sphericity Assumed	.100	.092	13.729
	Greenhouse-Geisser	.147	.092	7.842

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Observed Power[a]
visualization	Sphericity Assumed	1.000
	Greenhouse-Geisser	.999
	Huynh-Feldt	1.000
	Lower-bound	.862
Error(visualization)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets	Sphericity Assumed	.149
	Greenhouse-Geisser	.149
	Huynh-Feldt	.149
	Lower-bound	.149
Error(Datasets)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Attributes	Sphericity Assumed	.625
	Greenhouse-Geisser	.603
	Huynh-Feldt	.625
	Lower-bound	.431
Error(Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
visualization * Datasets	Sphericity Assumed	.183
	Greenhouse-Geisser	.155
	Huynh-Feldt	.168
	Lower-bound	.111
Error (visualization*Datasets)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
visualization * Attributes	Sphericity Assumed	.726
	Greenhouse-Geisser	.539

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F
	Huynh-Feldt	.509	6.456	.079	1.716
	Lower-bound	.509	1.000	.509	1.716
Error (visualization*Attributes)	Sphericity Assumed	5.044	136	.037	
	Greenhouse-Geisser	5.044	77.683	.065	
	Huynh-Feldt	5.044	109.755	.046	
	Lower-bound	5.044	17.000	.297	
Datasets * Attributes	Sphericity Assumed	2.861	2	1.431	27.601
	Greenhouse-Geisser	2.861	1.591	1.798	27.601
	Huynh-Feldt	2.861	1.729	1.655	27.601
	Lower-bound	2.861	1.000	2.861	27.601
Error(Datasets*Attributes)	Sphericity Assumed	1.762	34	.052	
	Greenhouse-Geisser	1.762	27.049	.065	
	Huynh-Feldt	1.762	29.391	.060	
	Lower-bound	1.762	17.000	.104	
visualization * Datasets * Attributes	Sphericity Assumed	1.173	8	.147	4.923
	Greenhouse-Geisser	1.173	5.236	.224	4.923
	Huynh-Feldt	1.173	7.842	.150	4.923
	Lower-bound	1.173	1.000	1.173	4.923
Error (visualization*Datasets*Attributes)	Sphericity Assumed	4.050	136	.030	
	Greenhouse-Geisser	4.050	89.016	.045	
	Huynh-Feldt	4.050	133.314	.030	
	Lower-bound	4.050	17.000	.238	

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Sig.	Partial Eta Squared	Noncent. Parameter
	Huynh-Feldt	.118	.092	11.080
	Lower-bound	.208	.092	1.716
Error (visualization*Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets * Attributes	Sphericity Assumed	.000	.619	55.201
	Greenhouse-Geisser	.000	.619	43.915
	Huynh-Feldt	.000	.619	47.718
	Lower-bound	.000	.619	27.601
Error(Datasets*Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
visualization * Datasets * Attributes	Sphericity Assumed	.000	.225	39.385
	Greenhouse-Geisser	.000	.225	25.779
	Huynh-Feldt	.000	.225	38.607
	Lower-bound	.040	.225	4.923
Error (visualization*Datasets*Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Observed Power[a]
	Huynh-Feldt	.652
	Lower-bound	.235
Error (visualization*Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets * Attributes	Sphericity Assumed	1.000
	Greenhouse-Geisser	1.000
	Huynh-Feldt	1.000
	Lower-bound	.999
Error(Datasets*Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
visualization * Datasets * Attributes	Sphericity Assumed	.998
	Greenhouse-Geisser	.980
	Huynh-Feldt	.998
	Lower-bound	.553
Error (visualization*Datasets*Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	

a. Computed using alpha = .05

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	visualization	Datasets	Attributes	Type III Sum of Squares	df
visualization	Linear			.786	1
	Quadratic			.064	1
	Cubic			.273	1
	Order 4			.710	1
Error(visualization)	Linear			.970	17
	Quadratic			.749	17
	Cubic			.511	17
	Order 4			.743	17
Datasets		Linear		.016	1
Error(Datasets)		Linear		.297	17
Attributes			Linear	.014	1
			Quadratic	.268	1
Error(Attributes)			Linear	.847	17
			Quadratic	.495	17
visualization * Datasets	Linear	Linear		.057	1
	Quadratic	Linear		.021	1
	Cubic	Linear		.012	1
	Order 4	Linear		.021	1
Error (visualization*Datasets)	Linear	Linear		.535	17
	Quadratic	Linear		1.241	17
	Cubic	Linear		.935	17
	Order 4	Linear		.549	17
visualization * Attributes	Linear		Linear	.073	1
			Quadratic	.144	1
	Quadratic		Linear	.141	1
			Quadratic	.051	1
	Cubic		Linear	.011	1
			Quadratic	.002	1
	Order 4		Linear	.054	1
			Quadratic	.032	1
Error (visualization*Attributes)	Linear		Linear	.504	17
			Quadratic	.749	17
	Quadratic		Linear	.552	17
			Quadratic	.321	17

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	visualization	Datasets	Attributes	Mean Square	F	Sig.
visualization	Linear			.786	13.770	.002
	Quadratic			.064	1.454	.244
	Cubic			.273	9.087	.008
	Order 4			.710	16.247	.001
Error(visualization)	Linear			.057		
	Quadratic			.044		
	Cubic			.030		
	Order 4			.044		
Datasets		Linear		.016	.928	.349
Error(Datasets)		Linear		.017		
Attributes			Linear	.014	.287	.599
			Quadratic	.268	9.218	.007
Error(Attributes)			Linear	.050		
			Quadratic	.029		
visualization * Datasets	Linear	Linear		.057	1.826	.194
	Quadratic	Linear		.021	.287	.599
	Cubic	Linear		.012	.224	.642
	Order 4	Linear		.021	.636	.436
Error (visualization*Datasets)	Linear	Linear		.031		
	Quadratic	Linear		.073		
	Cubic	Linear		.055		
	Order 4	Linear		.032		
visualization * Attributes	Linear		Linear	.073	2.464	.135
			Quadratic	.144	3.275	.088
	Quadratic		Linear	.141	4.353	.052
			Quadratic	.051	2.685	.120
	Cubic		Linear	.011	.260	.617
			Quadratic	.002	.033	.858
	Order 4		Linear	.054	1.283	.273
			Quadratic	.032	1.586	.225
Error (visualization*Attributes)	Linear		Linear	.030		
			Quadratic	.044		
	Quadratic		Linear	.032		
			Quadratic	.019		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	visualization	Datasets	Attributes	Partial Eta Squared	Noncent. Parameter
visualization	Linear			.448	13.770
	Quadratic			.079	1.454
	Cubic			.348	9.087
	Order 4			.489	16.247
Error(visualization)	Linear				
	Quadratic				
	Cubic				
	Order 4				
Datasets		Linear		.052	.928
Error(Datasets)		Linear			
Attributes			Linear	.017	.287
			Quadratic	.352	9.218
Error(Attributes)			Linear		
			Quadratic		
visualization * Datasets	Linear	Linear		.097	1.826
	Quadratic	Linear		.017	.287
	Cubic	Linear		.013	.224
	Order 4	Linear		.036	.636
Error (visualization*Datasets)	Linear	Linear			
	Quadratic	Linear			
	Cubic	Linear			
	Order 4	Linear			
visualization * Attributes	Linear		Linear	.127	2.464
			Quadratic	.162	3.275
	Quadratic		Linear	.204	4.353
			Quadratic	.136	2.685
	Cubic		Linear	.015	.260
			Quadratic	.002	.033
	Order 4		Linear	.070	1.283
			Quadratic	.085	1.586
Error (visualization*Attributes)	Linear		Linear		
			Quadratic		
	Quadratic		Linear		
			Quadratic		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	visualization	Datasets	Attributes	Observed Power[a]
visualization	Linear			.938
	Quadratic			.207
	Cubic			.811
	Order 4			.967
Error(visualization)	Linear			
	Quadratic			
	Cubic			
	Order 4			
Datasets		Linear		.149
Error(Datasets)		Linear		
Attributes			Linear	.080
			Quadratic	.816
Error(Attributes)			Linear	
			Quadratic	
visualization * Datasets	Linear	Linear		.248
	Quadratic	Linear		.080
	Cubic	Linear		.073
	Order 4	Linear		.117
Error (visualization*Datasets)	Linear	Linear		
	Quadratic	Linear		
	Cubic	Linear		
	Order 4	Linear		
visualization * Attributes	Linear		Linear	.316
			Quadratic	.400
	Quadratic		Linear	.503
			Quadratic	.340
	Cubic		Linear	.077
			Quadratic	.053
	Order 4		Linear	.188
			Quadratic	.221
Error (visualization*Attributes)	Linear		Linear	
			Quadratic	
	Quadratic		Linear	
			Quadratic	

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	visualization	Datasets	Attributes	Type III Sum of Squares	df
	Cubic		Linear	.746	17
			Quadratic	1.111	17
	Order 4		Linear	.718	17
			Quadratic	.343	17
Datasets * Attributes		Linear	Linear	2.858	1
			Quadratic	.004	1
Error(Datasets*Attributes)		Linear	Linear	1.284	17
			Quadratic	.479	17
visualization * Datasets * Attributes	Linear	Linear	Linear	.040	1
			Quadratic	.019	1
	Quadratic	Linear	Linear	.500	1
			Quadratic	.006	1
	Cubic	Linear	Linear	.006	1
			Quadratic	.032	1
	Order 4	Linear	Linear	.370	1
			Quadratic	.200	1
Error (visualization*Datasets*Attributes)	Linear	Linear	Linear	.387	17
			Quadratic	.410	17
	Quadratic	Linear	Linear	.552	17
			Quadratic	.451	17
	Cubic	Linear	Linear	.810	17
			Quadratic	.280	17
	Order 4	Linear	Linear	.569	17
			Quadratic	.590	17

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	visualization	Datasets	Attributes	Mean Square	F	Sig.
	Cubic		Linear	.044		
			Quadratic	.065		
	Order 4		Linear	.042		
			Quadratic	.020		
Datasets * Attributes		Linear	Linear	2.858	37.841	.000
			Quadratic	.004	.130	.723
Error(Datasets*Attributes)		Linear	Linear	.076		
			Quadratic	.028		
visualization * Datasets * Attributes	Linear	Linear	Linear	.040	1.736	.205
			Quadratic	.019	.785	.388
	Quadratic	Linear	Linear	.500	15.409	.001
			Quadratic	.006	.218	.647
	Cubic	Linear	Linear	.006	.133	.720
			Quadratic	.032	1.941	.182
	Order 4	Linear	Linear	.370	11.060	.004
			Quadratic	.200	5.759	.028
Error (visualization*Datasets*Attributes)	Linear	Linear	Linear	.023		
			Quadratic	.024		
	Quadratic	Linear	Linear	.032		
			Quadratic	.027		
	Cubic	Linear	Linear	.048		
			Quadratic	.016		
	Order 4	Linear	Linear	.033		
			Quadratic	.035		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	visualization	Datasets	Attributes	Partial Eta Squared	Noncent. Parameter
	Cubic		Linear		
			Quadratic		
	Order 4		Linear		
			Quadratic		
Datasets * Attributes		Linear	Linear	.690	37.841
			Quadratic	.008	.130
Error(Datasets*Attributes)		Linear	Linear		
			Quadratic		
visualization * Datasets * Attributes	Linear	Linear	Linear	.093	1.736
			Quadratic	.044	.785
	Quadratic	Linear	Linear	.475	15.409
			Quadratic	.013	.218
	Cubic	Linear	Linear	.008	.133
			Quadratic	.102	1.941
	Order 4	Linear	Linear	.394	11.060
			Quadratic	.253	5.759
Error (visualization*Datasets*Attributes)	Linear	Linear	Linear		
			Quadratic		
	Quadratic	Linear	Linear		
			Quadratic		
	Cubic	Linear	Linear		
			Quadratic		
	Order 4	Linear	Linear		
			Quadratic		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	visualization	Datasets	Attributes	Observed Power[a]
	Cubic		Linear	
			Quadratic	
	Order 4		Linear	
			Quadratic	
Datasets * Attributes		Linear	Linear	1.000
			Quadratic	.063
Error(Datasets*Attributes)		Linear	Linear	
			Quadratic	
visualization * Datasets * Attributes	Linear	Linear	Linear	.238
			Quadratic	.133
	Quadratic	Linear	Linear	.959
			Quadratic	.073
	Cubic	Linear	Linear	.064
			Quadratic	.260
	Order 4	Linear	Linear	.880
			Quadratic	.619
Error (visualization*Datasets*Attributes)	Linear	Linear	Linear	
			Quadratic	
	Quadratic	Linear	Linear	
			Quadratic	
	Cubic	Linear	Linear	
			Quadratic	
	Order 4	Linear	Linear	
			Quadratic	

a. Computed using alpha = .05

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	655.873	1	655.873	1258.415	.000	.987
Error	8.860	17	.521			

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Noncent. Parameter	Observed Power[a]
Intercept	1258.415	1.000
Error		

a. Computed using alpha = .05

Estimated Marginal Means

1. Grand Mean

Measure: MEASURE_1

		95% Confidence Interval	
Mean	Std. Error	Lower Bound	Upper Bound
1.102	.031	1.037	1.168

2. visualization

Estimates

Measure: MEASURE_1

			95% Confidence Interval	
visualization	Mean	Std. Error	Lower Bound	Upper Bound
1	1.029	.030	.966	1.092
2	1.075	.035	1.001	1.148
3	1.173	.042	1.084	1.263
4	1.065	.039	.982	1.148
5	1.169	.032	1.102	1.235

Pairwise Comparisons

Measure: MEASURE_1

(I) visualization	(J) visualization	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence [b]... Lower Bound
1	2	-.046	.021	.439	-.114
	3	-.144*	.032	.004	-.249
	4	-.036	.035	1.000	-.150
	5	-.140*	.029	.001	-.232
2	1	.046	.021	.439	-.022
	3	-.099*	.025	.010	-.178
	4	.010	.028	1.000	-.081
	5	-.094*	.024	.011	-.171
3	1	.144*	.032	.004	.040
	2	.099*	.025	.010	.019
	4	.108*	.033	.040	.003
	5	.005	.027	1.000	-.081
4	1	.036	.035	1.000	-.078
	2	-.010	.028	1.000	-.100
	3	-.108*	.033	.040	-.213
	5	-.104*	.028	.018	-.194
5	1	.140*	.029	.001	.047
	2	.094*	.024	.011	.017
	3	-.005	.027	1.000	-.090
	4	.104*	.028	.018	.013

Pairwise Comparisons

Measure: MEASURE_1

(I) visualization	(J) visualization	95% Confidence Interval for [b]... Upper Bound
1	2	.022
	3	-.040
	4	.078
	5	-.047
2	1	.114
	3	-.019
	4	.100
	5	-.017
3	1	.249
	2	.178
	4	.213
	5	.090
4	1	.150
	2	.081
	3	-.003
	5	-.013
5	1	.232
	2	.171
	3	.081
	4	.194

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.690	7.785[a]	4.000	14.000	.002	.690
Wilks' lambda	.310	7.785[a]	4.000	14.000	.002	.690
Hotelling's trace	2.224	7.785[a]	4.000	14.000	.002	.690
Roy's largest root	2.224	7.785[a]	4.000	14.000	.002	.690

Multivariate Tests

	Noncent. Parameter	Observed Power[b]
Pillai's trace	31.138	.978
Wilks' lambda	31.138	.978
Hotelling's trace	31.138	.978
Roy's largest root	31.138	.978

Each F tests the multivariate effect of visualization. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

b. Computed using alpha = .05

3. Datasets

Estimates

Measure: MEASURE_1

Datasets	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	1.097	.031	1.031	1.162
2	1.108	.032	1.040	1.175

Pairwise Comparisons

Measure: MEASURE_1

(I) Datasets	(J) Datasets	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
1	2	-.011	.011	.349	-.035	.013
2	1	.011	.011	.349	-.013	.035

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.052	.928[a]	1.000	17.000	.349	.052
Wilks' lambda	.948	.928[a]	1.000	17.000	.349	.052
Hotelling's trace	.055	.928[a]	1.000	17.000	.349	.052
Roy's largest root	.055	.928[a]	1.000	17.000	.349	.052

Multivariate Tests

	Noncent. Parameter	Observed Power[b]
Pillai's trace	.928	.149
Wilks' lambda	.928	.149
Hotelling's trace	.928	.149
Roy's largest root	.928	.149

Each F tests the multivariate effect of Datasets. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

b. Computed using alpha = .05

4. Attributes

Estimates

Measure: MEASURE_1

Attributes	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	1.124	.028	1.066	1.182
2	1.071	.035	.997	1.144
3	1.112	.037	1.034	1.189

Pairwise Comparisons

Measure: MEASURE_1

(I) Attributes	(J) Attributes	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	.054*	.020	.043	.001	.106
	3	.013	.024	1.000	-.050	.075
2	1	-.054*	.020	.043	-.106	-.001
	3	-.041	.019	.148	-.092	.010
3	1	-.013	.024	1.000	-.075	.050
	2	.041	.019	.148	-.010	.092

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.357	4.447[a]	2.000	16.000	.029	.357
Wilks' lambda	.643	4.447[a]	2.000	16.000	.029	.357
Hotelling's trace	.556	4.447[a]	2.000	16.000	.029	.357
Roy's largest root	.556	4.447[a]	2.000	16.000	.029	.357

Multivariate Tests

	Noncent. Parameter	Observed Power[b]
Pillai's trace	8.894	.678
Wilks' lambda	8.894	.678
Hotelling's trace	8.894	.678
Roy's largest root	8.894	.678

Each F tests the multivariate effect of Attributes. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

b. Computed using alpha = .05

5. visualization * Datasets

Measure: MEASURE_1

				95% Confidence Interval	
visualization	Datasets	Mean	Std. Error	Lower Bound	Upper Bound
1	1	1.036	.032	.969	1.102
	2	1.022	.031	.957	1.088
2	1	1.067	.039	.985	1.149
	2	1.082	.046	.985	1.180
3	1	1.185	.051	1.078	1.292
	2	1.161	.043	1.070	1.253
4	1	1.056	.046	.959	1.153
	2	1.074	.039	.991	1.157
5	1	1.139	.032	1.072	1.207
	2	1.198	.045	1.103	1.293

6. visualization * Attributes

Measure: MEASURE_1

visualization	Attributes	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	1	1.002	.036	.926	1.078
	2	1.009	.038	.928	1.089
	3	1.076	.040	.992	1.160
2	1	1.084	.037	1.006	1.161
	2	1.083	.050	.979	1.188
	3	1.057	.050	.952	1.162
3	1	1.200	.038	1.119	1.280
	2	1.141	.055	1.024	1.258
	3	1.179	.052	1.069	1.289
4	1	1.130	.056	1.013	1.247
	2	1.033	.051	.925	1.141
	3	1.032	.048	.931	1.133
5	1	1.205	.037	1.127	1.283
	2	1.087	.032	1.019	1.155
	3	1.214	.038	1.133	1.295

7. Datasets * Attributes

Measure: MEASURE_1

Datasets	Attributes	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	1	1.031	.030	.969	1.094
	2	1.061	.037	.984	1.139
	3	1.197	.041	1.111	1.283
2	1	1.217	.035	1.143	1.290
	2	1.080	.038	1.000	1.160
	3	1.026	.039	.945	1.108