```
GET
  FILE='C:\Users\Bahador\Desktop\SPSS-Analysis\Order\Order Time.sav.
DATASET NAME DataSet1 WINDOW=FRONT.
GLM Bar_Nom_Num_CarBar_Nom_Num_MovieBar_Num_Num_CarBar_Num_Num_MovieBar_Or
d Num Car
    Bar_Ord_Num_MovieLine_Nom_Num_CarLine_Nom_Num_MovieLine_Num_Num_CarLin
e_Num_Num_Movie
    Line_Ord_Num_CarLine_Ord_Num_MoviePie_Nom_Num_CarPie_Nom_Num_MoviePie_
Num_Num_Car
    Pie_Num_Num_MoviePie_Ord_Num_CarPie_Ord_Num_MovieScatter_Nom_Num_CarSc
atter_Nom_Num_Movie
    Scatter_Num_Num_CarScatter_Num_Num_MovieScatter_Ord_Num_CarScatter_Ord_
Num Movie
    Table_Nom_Num_CarTable_Nom_Num_MovieTable_Num_Num_CarTable_Num_Num_Movi
e Table_Ord_Num_Car
    Table Ord Num Movie
  /WSFACTOR=Visualizations 5 Polynomial Datasets 2 Polynomial Attributes 3 Pol
ynomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(OVERALL)
  /EMMEANS=TABLES(Visualizations)
  /EMMEANS=TABLES(Datasets)
  /EMMEANS=TABLES(Attributes)
  /EMMEANS=TABLES(Visualizations*Datasets)
  /EMMEANS=TABLES(Visualizations*Attributes)
  /EMMEANS=TABLES(Datasets*Attributes)
  /PRINT=DESCRIPTIVE ETASO OPOWER HOMOGENEITY
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=Visualizations Datasets Attributes Visualizations*Datasets Visuali
zations*Attributes
```

Datasets\*Attributes Visualizations\*Datasets\*Attributes.

#### **General Linear Model**

#### Notes

Output Created		24-MAR-2017 13:55:34
Comments		
Input	Data	C: \Users\Bahador\Desktop\S PSS- Analysis\Order\Order_Tim e.sav
	Active Dataset	DataSet1
	Filter	<none></none>
	Weight	<none></none>
	Split File	<none></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** GLM Bar\_Nom\_Num\_Car **Syntax** 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=Visualizatio ns 5 Polynomial Datasets 2 Polynomial Attributes 3 Polynomial /METHOD=SSTYPE(3) /EMMEANS=TABLES (OVERALL) /EMMEANS=TABLES (Visualizations) /EMMEANS=TABLES (Datasets) /EMMEANS=TABLES (Attributes) /EMMEANS=TABLES (Visualizations\*Datasets) /EMMEANS=TABLES (Visualizations\*Attributes) /EMMEANS=TABLES (Datasets\*Attributes) /PRINT=DESCRIPTIVE **ETASQ OPOWER HOMOGENEITY** 

Page 3

/CRITERIA=ALPHA(.05)

/WSDESIGN=Visualizatio ns Datasets Attributes Visualizations\*Datasets Visualizations\*Attributes Datasets\*Attributes Visualizations\*Datasets\*At

#### **Notes**

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

[DataSet1] C:\Users\Bahador\Desktop\SPSS-Analysis\Order\Order\_Time.sav

#### Warnings

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

#### **Within-Subjects Factors**

Visualizations	Datasets	Attributes	Dependent Variable
1	1		Bar_Nom_Nu m_Car
		2	Bar_Nom_Nu m_Movie
		3	Bar_Num_Nu m_Car
	2	1	Bar_Num_Nu m_Movie
		2	Bar_Ord_Nu m_Car
		3	Bar_Ord_Nu m_Movie
2	1	1	Line_Nom_Nu m_Car
		2	Line_Nom_Nu m_Movie
		3	Line_Num_Nu m_Car
	2	1	Line_Num_Nu m_Movie
		2	Line_Ord_Nu m_Car
		3	Line_Ord_Nu m_Movie

# Within-Subjects Factors

Visualizations	Datasets	Attributes	Dependent Variable
3	1	1	Pie_Nom_Nu m_Car
		2	Pie_Nom_Nu m_Movie
		3	Pie_Num_Nu m_Car
	2	1	Pie_Num_Nu m_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_N um_Car
		3	Table_Ord_N um_Movie

#### **Descriptive Statistics**

	Mean	Std. Deviation	N
Bar_Nom_Num_Car	1.1081	.30752	18
Bar_Nom_Num_Movie	1.3749	.14741	18
Bar_Num_Num_Car	1.4097	.19028	18
Bar_Num_Num_Movie	1.3154	.17574	18
Bar_Ord_Num_Car	1.2949	.20993	18
Bar_Ord_Num_Movie	1.2005	.15723	18
Line_Nom_Num_Car	1.3231	.21665	18
Line_Nom_Num_Movie	1.3837	.23660	18
Line_Num_Num_Car	1.4995	.26593	18
Line_Num_Num_Movie	1.3303	.24220	18
Line_Ord_Num_Car	1.1914	.36530	18
Line_Ord_Num_Movie	1.3364	.13588	18
Pie_Nom_Num_Car	1.4577	.24213	18
Pie_Nom_Num_Movie	1.4372	.19140	18
Pie_Num_Num_Car	1.4034	.36536	18
Pie_Num_Num_Movie	1.4033	.35340	18
Pie_Ord_Num_Car	1.4828	.19011	18
Pie_Ord_Num_Movie	1.5477	.24924	18
Scatter_Nom_Num_Car	1.3840	.28116	18
Scatter_Nom_Num_Movie	1.3078	.19241	18
Scatter_Num_Num_Car	1.5505	.23224	18
Scatter_Num_Num_Movie	1.4373	.41233	18
Scatter_Ord_Num_Car	1.2143	.18882	18
Scatter_Ord_Num_Movie	1.2613	.22517	18
Table_Nom_Num_Car	1.4478	.18755	18
Table_Nom_Num_Movie	1.4619	.23552	18
Table_Num_Num_Car	1.5073	.22781	18
Table_Num_Num_Movie	1.4112	.19245	18
Table_Ord_Num_Car	1.4061	.23180	18
Table_Ord_Num_Movie	1.3741	.16286	18

Effect		Value	F	Hypothesis df	Error df
Visualizations	Pillai's Trace	.730	9.449 <sup>b</sup>	4.000	14.000
	Wilks' Lambda	.270	9.449 <sup>b</sup>	4.000	14.000
	Hotelling's Trace	2.700	9.449 <sup>b</sup>	4.000	14.000
	Roy's Largest Root	2.700	9.449 <sup>b</sup>	4.000	14.000
Datasets	Pillai's Trace	.401	11.362 <sup>b</sup>	1.000	17.000
	Wilks' Lambda	.599	11.362 <sup>b</sup>	1.000	17.000
	Hotelling's Trace	.668	11.362 <sup>b</sup>	1.000	17.000
	Roy's Largest Root	.668	11.362 <sup>b</sup>	1.000	17.000
Attributes	Pillai's Trace	.177	1.721 <sup>b</sup>	2.000	16.000
	Wilks' Lambda	.823	1.721 <sup>b</sup>	2.000	16.000
	Hotelling's Trace	.215	1.721 <sup>b</sup>	2.000	16.000
	Roy's Largest Root	.215	1.721 <sup>b</sup>	2.000	16.000
Visualizations * Datasets	Pillai's Trace	.479	3.216 <sup>b</sup>	4.000	14.000
	Wilks' Lambda	.521	3.216 <sup>b</sup>	4.000	14.000
	Hotelling's Trace	.919	3.216 <sup>b</sup>	4.000	14.000
	Roy's Largest Root	.919	3.216 <sup>b</sup>	4.000	14.000
Visualizations * Attributes	Pillai's Trace	.690	2.789 <sup>b</sup>	8.000	10.000
	Wilks' Lambda	.310	2.789 <sup>b</sup>	8.000	10.000
	Hotelling's Trace	2.231	2.789 <sup>b</sup>	8.000	10.000
	Roy's Largest Root	2.231	2.789 <sup>b</sup>	8.000	10.000
Datasets * Attributes	Pillai's Trace	.244	2.576 <sup>b</sup>	2.000	16.000
	Wilks' Lambda	.756	2.576 <sup>b</sup>	2.000	16.000
	Hotelling's Trace	.322	2.576 <sup>b</sup>	2.000	16.000
	Roy's Largest Root	.322	2.576 <sup>b</sup>	2.000	16.000
Visualizations * Datasets *	Pillai's Trace	.577	1.706 <sup>b</sup>	8.000	10.000
Attributes	Wilks' Lambda	.423	1.706 <sup>b</sup>	8.000	10.000
	Hotelling's Trace	1.365	1.706 <sup>b</sup>	8.000	10.000
	Roy's Largest Root	1.365	1.706 <sup>b</sup>	8.000	10.000

Effect		Sig.	Partial Eta Squared	Noncent. Parameter
Visualizations	Pillai's Trace	.001	.730	37.796
	Wilks' Lambda	.001	.730	37.796
	Hotelling's Trace	.001	.730	37.796
	Roy's Largest Root	.001	.730	37.796
Datasets	Pillai's Trace	.004	.401	11.362
	Wilks' Lambda	.004	.401	11.362
	Hotelling's Trace	.004	.401	11.362
	Roy's Largest Root	.004	.401	11.362
Attributes	Pillai's Trace	.210	.177	3.442
	Wilks' Lambda	.210	.177	3.442
	Hotelling's Trace	.210	.177	3.442
	Roy's Largest Root	.210	.177	3.442
Visualizations * Datasets	Pillai's Trace	.045	.479	12.864
	Wilks' Lambda	.045	.479	12.864
	Hotelling's Trace	.045	.479	12.864
	Roy's Largest Root	.045	.479	12.864
Visualizations * Attributes	Pillai's Trace	.066	.690	22.309
	Wilks' Lambda	.066	.690	22.309
	Hotelling's Trace	.066	.690	22.309
	Roy's Largest Root	.066	.690	22.309
Datasets * Attributes	Pillai's Trace	.107	.244	5.153
	Wilks' Lambda	.107	.244	5.153
	Hotelling's Trace	.107	.244	5.153
	Roy's Largest Root	.107	.244	5.153
Visualizations * Datasets *	Pillai's Trace	.211	.577	13.646
Attributes	Wilks' Lambda	.211	.577	13.646
	Hotelling's Trace	.211	.577	13.646
	Roy's Largest Root	.211	.577	13.646

Effect		Observed Power <sup>c</sup>
Visualizations	Pillai's Trace	.993
	Wilks' Lambda	.993
	Hotelling's Trace	.993
	Roy's Largest Root	.993
Datasets	Pillai's Trace	.888
	Wilks' Lambda	.888
	Hotelling's Trace	.888
	Roy's Largest Root	.888
Attributes	Pillai's Trace	.308
	Wilks' Lambda	.308
	Hotelling's Trace	.308
	Roy's Largest Root	.308
Visualizations * Datasets	Pillai's Trace	.677
	Wilks' Lambda	.677
	Hotelling's Trace	.677
	Roy's Largest Root	.677
Visualizations * Attributes	Pillai's Trace	.664
	Wilks' Lambda	.664
	Hotelling's Trace	.664
	Roy's Largest Root	.664
Datasets * Attributes	Pillai's Trace	.440
	Wilks' Lambda	.440
	Hotelling's Trace	.440
	Roy's Largest Root	.440
Visualizations * Datasets *	Pillai's Trace	.430
Attributes	Wilks' Lambda	.430
	Hotelling's Trace	.430
	Roy's Largest Root	.430

a. Design: Intercept

Within Subjects Design: Visualizations + Datasets + Attributes + Visualizations \* Datasets + Visualizations \* Attributes + Datasets \* Attributes + Visualizations \* Datasets \* Attributes

b. Exact statistic

#### c. Computed using alpha = .05

#### Mauchly's Test of Sphericity<sup>a</sup>

Measure: MEASURE\_1

					Epsilon <sup>b</sup>
M*:1: 0 1:	Marralali da M	Approx. Chi-	-16	C:~	Greenhouse- Geisser
Within Subjects Effect	Mauchly's W	Square	df	Sig.	Geissei
Visualizations	.438	12.738	9	.177	.687
Datasets	1.000	.000	0		1.000
Attributes	.995	.076	2	.963	.995
Visualizations * Datasets	.646	6.737	9	.666	.831
Visualizations * Attributes	.057	40.473	35	.268	.615
Datasets * Attributes	.847	2.654	2	.265	.867
Visualizations * Datasets * Attributes	.058	40.257	35	.276	.681

# Mauchly's Test of Sphericity<sup>a</sup>

Measure: MEASURE\_1

Epsilon<sup>b</sup>

Within Subjects Effect	Huynh-Feldt	Lower-bound
Visualizations	.832	.250
Datasets	1.000	1.000
Attributes	1.000	.500
Visualizations * Datasets	1.000	.250
Visualizations * Attributes	.896	.125
Datasets * Attributes	.957	.500
Visualizations * Datasets * Attributes	1.000	.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: Visualizations + Datasets + Attributes + Visualizations \* Datasets + Visualizations \* Attributes + Datasets \* Attributes + Visualizations \* 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.

Source		Type III Sum of Squares	df	Mean Square	F
Visualizations	Sphericity Assumed	2.109	4	.527	9.380
	Greenhouse-Geisser	2.109	2.746	.768	9.380
	Huynh-Feldt	2.109	3.328	.634	9.380
	Lower-bound	2.109	1.000	2.109	9.380
Error(Visualizations)	Sphericity Assumed	3.823	68	.056	
	Greenhouse-Geisser	3.823	46.689	.082	
	Huynh-Feldt	3.823	56.575	.068	
	Lower-bound	3.823	17.000	.225	
Datasets	Sphericity Assumed	.433	1	.433	11.362
	Greenhouse-Geisser	.433	1.000	.433	11.362
	Huynh-Feldt	.433	1.000	.433	11.362
	Lower-bound	.433	1.000	.433	11.362
Error(Datasets)	Sphericity Assumed	.648	17	.038	
	Greenhouse-Geisser	.648	17.000	.038	
	Huynh-Feldt	.648	17.000	.038	
	Lower-bound	.648	17.000	.038	
Attributes	Sphericity Assumed	.308	2	.154	1.936
	Greenhouse-Geisser	.308	1.991	.155	1.936
	Huynh-Feldt	.308	2.000	.154	1.936
	Lower-bound	.308	1.000	.308	1.936
Error(Attributes)	Sphericity Assumed	2.705	34	.080.	
	Greenhouse-Geisser	2.705	33.839	.080.	
	Huynh-Feldt	2.705	34.000	.080.	
	Lower-bound	2.705	17.000	.159	
Visualizations * Datasets	Sphericity Assumed	.484	4	.121	3.851
	Greenhouse-Geisser	.484	3.322	.146	3.851
	Huynh-Feldt	.484	4.000	.121	3.851
	Lower-bound	.484	1.000	.484	3.851
Error	Sphericity Assumed	2.137	68	.031	
(Visualizations*Datasets)	Greenhouse-Geisser	2.137	56.478	.038	
	Huynh-Feldt	2.137	68.000	.031	
	Lower-bound	2.137	17.000	.126	
Visualizations * Attributes	Sphericity Assumed	.872	8	.109	2.448
	Greenhouse-Geisser	.872	4.922	.177	2.448

Source		Sig.	Partial Eta Squared	Noncent. Parameter
Visualizations	Sphericity Assumed	.000	.356	37.518
	Greenhouse-Geisser	.000	.356	25.760
	Huynh-Feldt	.000	.356	31.214
	Lower-bound	.007	.356	9.380
Error(Visualizations)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets	Sphericity Assumed	.004	.401	11.362
	Greenhouse-Geisser	.004	.401	11.362
	Huynh-Feldt	.004	.401	11.362
	Lower-bound	.004	.401	11.362
Error(Datasets)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Attributes	Sphericity Assumed	.160	.102	3.873
	Greenhouse-Geisser	.160	.102	3.854
	Huynh-Feldt	.160	.102	3.873
	Lower-bound	.182	.102	1.936
Error(Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Datasets	Sphericity Assumed	.007	.185	15.406
	Greenhouse-Geisser	.012	.185	12.796
	Huynh-Feldt	.007	.185	15.406
	Lower-bound	.066	.185	3.851
Error	Sphericity Assumed			
(Visualizations*Datasets)	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Attributes	Sphericity Assumed	.017	.126	19.586
	Greenhouse-Geisser	.041	.126	12.050

Source		Observed Power <sup>a</sup>
Visualizations	Sphericity Assumed	.999
	Greenhouse-Geisser	.992
	Huynh-Feldt	.997
	Lower-bound	.823
Error(Visualizations)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets	Sphericity Assumed	.888
	Greenhouse-Geisser	.888
	Huynh-Feldt	.888
	Lower-bound	.888
Error(Datasets)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Attributes	Sphericity Assumed	.373
	Greenhouse-Geisser	.372
	Huynh-Feldt	.373
	Lower-bound	.260
Error(Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Datasets	Sphericity Assumed	.876
	Greenhouse-Geisser	.823
	Huynh-Feldt	.876
	Lower-bound	.457
Error	Sphericity Assumed	
(Visualizations*Datasets)	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Attributes	Sphericity Assumed	.889
	Greenhouse-Geisser	.742

0		Type III Sum of	-14	Maan Causas	F
Source		Squares	df	Mean Square	
	Huynh-Feldt	.872	7.169	.122	2.448
	Lower-bound	.872	1.000	.872	2.448
Error	Sphericity Assumed	6.056	136	.045	
(Visualizations*Attributes)	Greenhouse-Geisser	6.056	83.670	.072	
	Huynh-Feldt	6.056	121.878	.050	
	Lower-bound	6.056	17.000	.356	
Datasets * Attributes	Sphericity Assumed	.639	2	.320	3.682
	Greenhouse-Geisser	.639	1.735	.368	3.682
	Huynh-Feldt	.639	1.915	.334	3.682
	Lower-bound	.639	1.000	.639	3.682
Error(Datasets*Attributes)	Sphericity Assumed	2.951	34	.087	
	Greenhouse-Geisser	2.951	29.493	.100	
	Huynh-Feldt	2.951	32.549	.091	
	Lower-bound	2.951	17.000	.174	
Visualizations * Datasets *	Sphericity Assumed	1.145	8	.143	3.219
Attributes	Greenhouse-Geisser	1.145	5.449	.210	3.219
	Huynh-Feldt	1.145	8.000	.143	3.219
	Lower-bound	1.145	1.000	1.145	3.219
Error	Sphericity Assumed	6.046	136	.044	
(Visualizations*Datasets*Att ributes)	Greenhouse-Geisser	6.046	92.635	.065	
110000)	Huynh-Feldt	6.046	136.000	.044	
	Lower-bound	6.046	17.000	.356	

Source		Sig.	Partial Eta Squared	Noncent. Parameter
	Huynh-Feldt	.021	.126	17.553
	Lower-bound	.136	.126	2.448
Error	Sphericity Assumed			
(Visualizations*Attributes)	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets * Attributes	Sphericity Assumed	.036	.178	7.364
	Greenhouse-Geisser	.043	.178	6.388
	Huynh-Feldt	.038	.178	7.050
	Lower-bound	.072	.178	3.682
Error(Datasets*Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Datasets *	Sphericity Assumed	.002	.159	25.752
Attributes	Greenhouse-Geisser	.008	.159	17.540
	Huynh-Feldt	.002	.159	25.752
	Lower-bound	.091	.159	3.219
Error	Sphericity Assumed			
(Visualizations*Datasets*Att ributes)	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			

Source		Observed Power <sup>a</sup>
	Huynh-Feldt	.860
	Lower-bound	.315
Error	Sphericity Assumed	
(Visualizations*Attributes)	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets * Attributes	Sphericity Assumed	.638
	Greenhouse-Geisser	.592
	Huynh-Feldt	.623
	Lower-bound	.441
Error(Datasets*Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Datasets *	Sphericity Assumed	.964
Attributes	Greenhouse-Geisser	.891
	Huynh-Feldt	.964
	Lower-bound	.395
Error	Sphericity Assumed	
(Visualizations*Datasets*Att ributes)	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	

a. Computed using alpha = .05

Measure: MEASURE_1				Time III Cine of	
Source	Visualizations	Datasets	Attributes	Type III Sum of Squares	df
Visualizations	Linear			1.084	1
	Quadratic			.241	1
	Cubic			.157	1
	Order 4			.628	1
Error(Visualizations)	Linear			.508	17
	Quadratic			.933	17
	Cubic			.982	17
	Order 4			1.400	17
Datasets		Linear		.433	1
Error(Datasets)		Linear		.648	17
Attributes			Linear	.201	1
			Quadratic	.107	1
Error(Attributes)			Linear	1.334	17
			Quadratic	1.372	17
Visualizations * Datasets	Linear	Linear		.022	1
	Quadratic	Linear		.009	1
	Cubic	Linear		.010	1
	Order 4	Linear		.443	1
Error	Linear	Linear		.323	17
(Visualizations*Datasets)	Quadratic	Linear		.511	17
	Cubic	Linear		.641	17
	Order 4	Linear		.662	17
Visualizations * Attributes	Linear		Linear	.122	1
			Quadratic	.114	1
	Quadratic		Linear	.001	1
			Quadratic	.233	1
	Cubic		Linear	.022	1
			Quadratic	.005	1
	Order 4		Linear	.000	1
			Quadratic	.375	1
Error	Linear		Linear	.581	17
(Visualizations*Attributes)			Quadratic	.487	17
	Quadratic		Linear	.788	17
			Quadratic	.690	17

		_			_
Source	Visualizations	Datasets	Attributes	Mean Square	F
Visualizations	Linear			1.084	36.267
	Quadratic			.241	4.388
	Cubic			.157	2.718
	Order 4			.628	7.622
Error(Visualizations)	Linear			.030	
	Quadratic			.055	
	Cubic			.058	
	Order 4			.082	
Datasets		Linear		.433	11.362
Error(Datasets)		Linear		.038	
Attributes			Linear	.201	2.559
			Quadratic	.107	1.331
Error(Attributes)			Linear	.078	
			Quadratic	.081	
Visualizations * Datasets	Linear	Linear		.022	1.140
	Quadratic	Linear		.009	.311
	Cubic	Linear		.010	.263
	Order 4	Linear		.443	11.383
Error	Linear	Linear		.019	
(Visualizations*Datasets)	Quadratic	Linear		.030	
	Cubic	Linear		.038	
	Order 4	Linear		.039	
Visualizations * Attributes	Linear		Linear	.122	3.566
			Quadratic	.114	3.969
	Quadratic		Linear	.001	.029
			Quadratic	.233	5.749
	Cubic		Linear	.022	.348
			Quadratic	.005	.097
	Order 4		Linear	.000	.004
	31401 4		Quadratic	.375	10.098
Error	Linear		Linear	.034	10.000
(Visualizations*Attributes)	Ellical		Quadratic	.034	
	Quadratic		Linear	.029	
	Quadratic				
			Quadratic	.041	

Source	Visualizations	Datasets	Attributes	Sig.	Partial Eta Squared
Visualizations	Linear			.000	.681
	Quadratic			.051	.205
	Cubic			.118	.138
	Order 4			.013	.310
Error(Visualizations)	Linear				
	Quadratic				
	Cubic				
	Order 4				
Datasets		Linear		.004	.401
Error(Datasets)		Linear			
Attributes			Linear	.128	.131
			Quadratic	.265	.073
Error(Attributes)			Linear		
			Quadratic		
Visualizations * Datasets	Linear	Linear		.301	.063
	Quadratic	Linear		.584	.018
	Cubic	Linear		.615	.015
	Order 4	Linear		.004	.401
Error	Linear	Linear			
(Visualizations*Datasets)	Quadratic	Linear			
	Cubic	Linear			
	Order 4	Linear			
Visualizations * Attributes	Linear		Linear	.076	.173
			Quadratic	.063	.189
	Quadratic		Linear	.866	.002
			Quadratic	.028	.253
	Cubic		Linear	.563	.020
			Quadratic	.759	.006
	Order 4		Linear	.949	.000
			Quadratic	.006	.373
Error	Linear		Linear		
(Visualizations*Attributes)			Quadratic		
	Quadratic		Linear		
			Quadratic		

Source	Visualizations	Datasets	Attributes	Noncent. Parameter	Observed Power <sup>a</sup>
Visualizations	Linear			36.267	1.000
	Quadratic			4.388	.506
	Cubic			2.718	.343
	Order 4			7.622	.740
Error(Visualizations)	Linear				
	Quadratic				
	Cubic				
	Order 4				
Datasets		Linear		11.362	.888
Error(Datasets)		Linear			
Attributes			Linear	2.559	.326
			Quadratic	1.331	.193
Error(Attributes)			Linear		
			Quadratic		
Visualizations * Datasets	Linear	Linear		1.140	.172
	Quadratic	Linear		.311	.082
	Cubic	Linear		.263	.077
	Order 4	Linear		11.383	.888
Error	Linear	Linear			
(Visualizations*Datasets)	Quadratic	Linear			
	Cubic	Linear			
	Order 4	Linear			
Visualizations * Attributes	Linear		Linear	3.566	.429
			Quadratic	3.969	.468
	Quadratic		Linear	.029	.053
			Quadratic	5.749	.618
	Cubic		Linear	.348	.086
			Quadratic	.097	.060
	Order 4		Linear	.004	.050
			Quadratic	10.098	.849
Error	Linear		Linear		
(Visualizations*Attributes)			Quadratic		
	Quadratic		Linear		
			Quadratic		

Source	Visualizations	Datasets	Attributes	Type III Sum of Squares	df
	Cubic		Linear	1.062	17
			Quadratic	.939	17
	Order 4		Linear	.878	17
			Quadratic	.631	17
Datasets * Attributes		Linear	Linear	.616	1
			Quadratic	.023	1
Error(Datasets*Attributes)		Linear	Linear	1.912	17
			Quadratic	1.038	17
Visualizations * Datasets *	Linear	Linear	Linear	.098	1
Attributes			Quadratic	.076	1
	Quadratic	Linear	Linear	.267	1
			Quadratic	5.459E-5	1
	Cubic	Linear	Linear	.199	1
			Quadratic	.017	1
	Order 4	Linear	Linear	.479	1
			Quadratic	.008	1
Error	Linear	Linear	Linear	.533	17
(Visualizations*Datasets*Att ributes)			Quadratic	.524	17
Tibutos)	Quadratic	Linear	Linear	1.399	17
			Quadratic	.680	17
	Cubic	Linear	Linear	.628	17
			Quadratic	.768	17
	Order 4	Linear	Linear	.778	17
			Quadratic	.735	17

Source	Visualizations	Datasets	Attributes	Mean Square	F
	Cubic		Linear	.062	
			Quadratic	.055	
	Order 4		Linear	.052	
			Quadratic	.037	
Datasets * Attributes		Linear	Linear	.616	5.475
			Quadratic	.023	.380
Error(Datasets*Attributes)		Linear	Linear	.112	
			Quadratic	.061	
Visualizations * Datasets *	Linear	Linear	Linear	.098	3.135
Attributes			Quadratic	.076	2.453
	Quadratic	Linear	Linear	.267	3.242
			Quadratic	5.459E-5	.001
	Cubic	Linear	Linear	.199	5.388
			Quadratic	.017	.382
	Order 4	Linear	Linear	.479	10.468
			Quadratic	.008	.195
Error	Linear	Linear	Linear	.031	
(Visualizations*Datasets*Att ributes)			Quadratic	.031	
nbutes)	Quadratic	Linear	Linear	.082	
			Quadratic	.040	
	Cubic	Linear	Linear	.037	
			Quadratic	.045	
	Order 4	Linear	Linear	.046	
			Quadratic	.043	

Source	Visualizations	Datasets	Attributes	Sig.	Partial Eta Squared
	Cubic		Linear		
			Quadratic		
	Order 4		Linear		
			Quadratic		
Datasets * Attributes		Linear	Linear	.032	.244
			Quadratic	.546	.022
Error(Datasets*Attributes)		Linear	Linear		
			Quadratic		
Visualizations * Datasets *	Linear	Linear	Linear	.095	.156
Attributes			Quadratic	.136	.126
	Quadratic	Linear	Linear	.090	.160
			Quadratic	.971	.000
	Cubic	Linear	Linear	.033	.241
			Quadratic	.545	.022
	Order 4	Linear	Linear	.005	.381
			Quadratic	.664	.011
Error	Linear	Linear	Linear		
(Visualizations*Datasets*Att ributes)			Quadratic		
noutes)	Quadratic	Linear	Linear		
			Quadratic		
	Cubic	Linear	Linear		
			Quadratic		
	Order 4	Linear	Linear		
			Quadratic		

Source	Visualizations	Datasets	Attributes	Noncent. Parameter	Observed Power <sup>a</sup>
	Cubic		Linear		
			Quadratic		
	Order 4		Linear		
			Quadratic		
Datasets * Attributes		Linear	Linear	5.475	.597
			Quadratic	.380	.090
Error(Datasets*Attributes)		Linear	Linear		
			Quadratic		
Visualizations * Datasets *	Linear	Linear	Linear	3.135	.386
Attributes			Quadratic	2.453	.315
	Quadratic	Linear	Linear	3.242	.397
			Quadratic	.001	.050
	Cubic	Linear	Linear	5.388	.591
			Quadratic	.382	.090
	Order 4	Linear	Linear	10.468	.862
			Quadratic	.195	.070
Error	Linear	Linear	Linear		
(Visualizations*Datasets*Att ributes)			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	1021.611	1	1021.611	2994.423	.000	.994
Error	5.800	17	.341			

#### **Tests of Between-Subjects Effects**

Measure: MEASURE\_1

Transformed Variable: Average

Source	Noncent. Parameter	Observed Power <sup>a</sup>
Intercept	2994.423	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	
1.375	.025	1.322	1.428	

#### 2. Visualizations

			95% Confidence Interval	
Visualizations	Mean	Std. Error	Lower Bound	Upper Bound
1	1.284	.029	1.223	1.345
2	1.344	.038	1.265	1.423
3	1.455	.039	1.374	1.537
4	1.359	.031	1.294	1.424
5	1.435	.024	1.384	1.485

#### 3. Datasets

Measure: MEASURE\_1

			95% Confidence Interval	
Datasets	Mean	Std. Error	Lower Bound	Upper Bound
1	1.404	.027	1.347	1.461
2	1.347	.026	1.292	1.402

#### 4. Attributes

Measure: MEASURE\_1

			95% Confidence Interval	
Attributes	Mean	Std. Error	Lower Bound	Upper Bound
1	1.362	.034	1.290	1.434
2	1.356	.030	1.292	1.419
3	1.409	.027	1.353	1.465

#### 5. Visualizations \* Datasets

				95% Confide	ence Interval
Visualizations	Datasets	Mean	Std. Error	Lower Bound	Upper Bound
1	1	1.298	.037	1.220	1.375
	2	1.270	.027	1.212	1.328
2	1	1.402	.035	1.328	1.476
	2	1.286	.047	1.186	1.386
3	1	1.433	.043	1.342	1.523
	2	1.478	.040	1.394	1.562
4	1	1.414	.034	1.343	1.485
	2	1.304	.042	1.215	1.394
5	1	1.472	.030	1.409	1.536
	2	1.397	.026	1.343	1.452

#### 6. Visualizations \* Attributes

Measure: MEASURE\_1

				95% Confide	ence Interval
Visualizations	Attributes	Mean	Std. Error	Lower Bound	Upper Bound
1	1	1.212	.046	1.114	1.309
	2	1.335	.031	1.270	1.400
	3	1.305	.032	1.237	1.374
2	1	1.327	.045	1.231	1.423
	2	1.288	.062	1.156	1.419
	3	1.418	.038	1.337	1.499
3	1	1.430	.059	1.306	1.555
	2	1.460	.036	1.384	1.536
	3	1.476	.056	1.357	1.594
4	1	1.411	.058	1.287	1.534
	2	1.261	.034	1.189	1.334
	3	1.406	.042	1.317	1.494
5	1	1.430	.034	1.358	1.501
	2	1.434	.041	1.347	1.521
	3	1.441	.037	1.363	1.519

#### 7. Datasets \* Attributes

Measure: MEASURE\_1

				95% Confidence Interval	
Datasets	Attributes	Mean	Std. Error	Lower Bound	Upper Bound
1	1	1.344	.042	1.256	1.432
	2	1.393	.033	1.323	1.464
	3	1.474	.037	1.397	1.552
2	1	1.379	.044	1.286	1.473
	2	1.318	.033	1.248	1.388
	3	1.344	.025	1.291	1.397

GLM Bar\_Nom\_Num\_CarBar\_Nom\_Num\_MovieBar\_Num\_Num\_CarBar\_Num\_Num\_MovieBar\_Ord\_Num\_Car

Bar\_Ord\_Num\_MovieLine\_Nom\_Num\_CarLine\_Nom\_Num\_MovieLine\_Num\_Num\_CarLine\_Num\_Num\_Movie

Line\_Ord\_Num\_CarLine\_Ord\_Num\_MoviePie\_Nom\_Num\_CarPie\_Nom\_Num\_MoviePie\_

```
Num Num Car
    Pie_Num_Num_MoviePie_Ord_Num_CarPie_Ord_Num_MovieScatter_Nom_Num_CarSc
atter_Nom_Num_Movie
    Scatter_Num_Num_CarScatter_Num_Num_MovieScatter_Ord_Num_CarScatter_Ord_
Num_Movie
    Table_Nom_Num_CarTable_Nom_Num_MovieTable_Num_Num_CarTable_Num_Num_Movi
e Table Ord Num Car
    Table_Ord_Num_Movie
  /WSFACTOR=Visualizations 5 Polynomial Datasets 2 Polynomial Attributes 3 Pol
ynomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(OVERALL)
  /EMMEANS=TABLES(Visualizations) COMPARE ADJ(BONFERRONI)
  /EMMEANS=TABLES(Datasets) COMPARE ADJ(BONFERRONI)
  /EMMEANS=TABLES(Attributes) COMPARE ADJ(BONFERRONI)
  /EMMEANS=TABLES(Visualizations*Datasets)
  /EMMEANS=TABLES(Visualizations*Attributes)
  /EMMEANS=TABLES(Datasets*Attributes)
  /PRINT=DESCRIPTIVE ETASO OPOWER HOMOGENEITY
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=Visualizations Datasets Attributes Visualizations*Datasets Visuali
zations*Attributes
```

Datasets\*Attributes Visualizations\*Datasets\*Attributes.

**General Linear Model** 

#### Notes

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Comments		
Input	Data	C: \Users\Bahador\Desktop\S PSS- Analysis\Order\Order_Tim e.sav
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	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** GLM Bar\_Nom\_Num\_Car Syntax 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\_Ord\_Num\_Car Pie\_Ord\_Num\_Movie Scatter\_Nom\_Num\_Car Scatter\_Ord\_Num\_Car Table\_Num\_Num\_Car Table\_Num\_Num\_Movie Table\_Ord\_Num\_Car Polynomial /EMMEANS=TABLES (OVERALL) /EMMEANS=TABLES (Visualizations) **COMPARE ADJ** (BONFERRONI) /EMMEANS=TABLES (Datasets) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES (Attributes) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES (Visualizations\*Datasets) /EMMEANS=TABLES (Visualizations\*Attributes) /EMMEANS=TABLES (Datasets\*Attributes)

Pie\_Num\_Num\_Movie Scatter\_Nom\_Num\_Movie Scatter\_Num\_Num\_Car Scatter\_Num\_Num\_Movie Scatter\_Ord\_Num\_Movie Table\_Nom\_Num\_Car Table\_Nom\_Num\_Movie Table\_Ord\_Num\_Movie /WSFACTOR=Visualizatio ns 5 Polynomial Datasets 2 Polynomial Attributes 3 /METHOD=SSTYPE(3)

/PRINT=DESCRIPTIVE **ETASQ OPOWER HOMOGENEITY** 

/CRITERIA=ALPHA(.05)

/WSDESIGN=Visualizatio ns Datasets Attributes

Page 30

#### **Notes**

Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.02

#### Warnings

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

#### **Within-Subjects Factors**

Visualizations	Datasets	Attributes	Dependent Variable
1	1	1	Bar_Nom_Nu m_Car
		2	Bar_Nom_Nu m_Movie
		3	Bar_Num_Nu m_Car
	2	1	Bar_Num_Nu m_Movie
		2	Bar_Ord_Nu m_Car
		3	Bar_Ord_Nu m_Movie
2	1	1	Line_Nom_Nu m_Car
		2	Line_Nom_Nu m_Movie
		3	Line_Num_Nu m_Car
	2	1	Line_Num_Nu m_Movie
		2	Line_Ord_Nu m_Car
		3	Line_Ord_Nu m_Movie

# Within-Subjects Factors

Visualizations	Datasets	Attributes	Dependent Variable
3	1	1	Pie_Nom_Nu m_Car
		2	Pie_Nom_Nu m_Movie
		3	Pie_Num_Nu m_Car
	2	1	Pie_Num_Nu m_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_N um_Car
		3	Table_Ord_N um_Movie

### **Descriptive Statistics**

	Mean	Std. Deviation	N
Bar_Nom_Num_Car	1.1081	.30752	18
Bar_Nom_Num_Movie	1.3749	.14741	18
Bar_Num_Num_Car	1.4097	.19028	18
Bar_Num_Num_Movie	1.3154	.17574	18
Bar_Ord_Num_Car	1.2949	.20993	18
Bar_Ord_Num_Movie	1.2005	.15723	18
Line_Nom_Num_Car	1.3231	.21665	18
Line_Nom_Num_Movie	1.3837	.23660	18
Line_Num_Num_Car	1.4995	.26593	18
Line_Num_Num_Movie	1.3303	.24220	18
Line_Ord_Num_Car	1.1914	.36530	18
Line_Ord_Num_Movie	1.3364	.13588	18
Pie_Nom_Num_Car	1.4577	.24213	18
Pie_Nom_Num_Movie	1.4372	.19140	18
Pie_Num_Num_Car	1.4034	.36536	18
Pie_Num_Num_Movie	1.4033	.35340	18
Pie_Ord_Num_Car	1.4828	.19011	18
Pie_Ord_Num_Movie	1.5477	.24924	18
Scatter_Nom_Num_Car	1.3840	.28116	18
Scatter_Nom_Num_Movie	1.3078	.19241	18
Scatter_Num_Num_Car	1.5505	.23224	18
Scatter_Num_Num_Movie	1.4373	.41233	18
Scatter_Ord_Num_Car	1.2143	.18882	18
Scatter_Ord_Num_Movie	1.2613	.22517	18
Table_Nom_Num_Car	1.4478	.18755	18
Table_Nom_Num_Movie	1.4619	.23552	18
Table_Num_Num_Car	1.5073	.22781	18
Table_Num_Num_Movie	1.4112	.19245	18
Table_Ord_Num_Car	1.4061	.23180	18
Table_Ord_Num_Movie	1.3741	.16286	18

Effect		Value	F	Hypothesis df	Error df
Visualizations	Pillai's Trace	.730	9.449 <sup>b</sup>	4.000	14.000
	Wilks' Lambda	.270	9.449 <sup>b</sup>	4.000	14.000
	Hotelling's Trace	2.700	9.449 <sup>b</sup>	4.000	14.000
	Roy's Largest Root	2.700	9.449 <sup>b</sup>	4.000	14.000
Datasets	Pillai's Trace	.401	11.362 <sup>b</sup>	1.000	17.000
	Wilks' Lambda	.599	11.362 <sup>b</sup>	1.000	17.000
	Hotelling's Trace	.668	11.362 <sup>b</sup>	1.000	17.000
	Roy's Largest Root	.668	11.362 <sup>b</sup>	1.000	17.000
Attributes	Pillai's Trace	.177	1.721 <sup>b</sup>	2.000	16.000
	Wilks' Lambda	.823	1.721 <sup>b</sup>	2.000	16.000
	Hotelling's Trace	.215	1.721 <sup>b</sup>	2.000	16.000
	Roy's Largest Root	.215	1.721 <sup>b</sup>	2.000	16.000
Visualizations * Datasets	Pillai's Trace	.479	3.216 <sup>b</sup>	4.000	14.000
	Wilks' Lambda	.521	3.216 <sup>b</sup>	4.000	14.000
	Hotelling's Trace	.919	3.216 <sup>b</sup>	4.000	14.000
	Roy's Largest Root	.919	3.216 <sup>b</sup>	4.000	14.000
Visualizations * Attributes	Pillai's Trace	.690	2.789 <sup>b</sup>	8.000	10.000
	Wilks' Lambda	.310	2.789 <sup>b</sup>	8.000	10.000
	Hotelling's Trace	2.231	2.789 <sup>b</sup>	8.000	10.000
	Roy's Largest Root	2.231	2.789 <sup>b</sup>	8.000	10.000
Datasets * Attributes	Pillai's Trace	.244	2.576 <sup>b</sup>	2.000	16.000
	Wilks' Lambda	.756	2.576 <sup>b</sup>	2.000	16.000
	Hotelling's Trace	.322	2.576 <sup>b</sup>	2.000	16.000
	Roy's Largest Root	.322	2.576 <sup>b</sup>	2.000	16.000
Visualizations * Datasets *	Pillai's Trace	.577	1.706 <sup>b</sup>	8.000	10.000
Attributes	Wilks' Lambda	.423	1.706 <sup>b</sup>	8.000	10.000
	Hotelling's Trace	1.365	1.706 <sup>b</sup>	8.000	10.000
	Roy's Largest Root	1.365	1.706 <sup>b</sup>	8.000	10.000

Effect		Sig.	Partial Eta Squared	Noncent. Parameter
Visualizations	Pillai's Trace	.001	.730	37.796
	Wilks' Lambda	.001	.730	37.796
	Hotelling's Trace	.001	.730	37.796
	Roy's Largest Root	.001	.730	37.796
Datasets	Pillai's Trace	.004	.401	11.362
	Wilks' Lambda	.004	.401	11.362
	Hotelling's Trace	.004	.401	11.362
	Roy's Largest Root	.004	.401	11.362
Attributes	Pillai's Trace	.210	.177	3.442
	Wilks' Lambda	.210	.177	3.442
	Hotelling's Trace	.210	.177	3.442
	Roy's Largest Root	.210	.177	3.442
Visualizations * Datasets	Pillai's Trace	.045	.479	12.864
	Wilks' Lambda	.045	.479	12.864
	Hotelling's Trace	.045	.479	12.864
	Roy's Largest Root	.045	.479	12.864
Visualizations * Attributes	Pillai's Trace	.066	.690	22.309
	Wilks' Lambda	.066	.690	22.309
	Hotelling's Trace	.066	.690	22.309
	Roy's Largest Root	.066	.690	22.309
Datasets * Attributes	Pillai's Trace	.107	.244	5.153
	Wilks' Lambda	.107	.244	5.153
	Hotelling's Trace	.107	.244	5.153
	Roy's Largest Root	.107	.244	5.153
Visualizations * Datasets *	Pillai's Trace	.211	.577	13.646
Attributes	Wilks' Lambda	.211	.577	13.646
	Hotelling's Trace	.211	.577	13.646
	Roy's Largest Root	.211	.577	13.646

Effect		Observed Power <sup>c</sup>
Visualizations	Pillai's Trace	.993
	Wilks' Lambda	.993
	Hotelling's Trace	.993
	Roy's Largest Root	.993
Datasets	Pillai's Trace	.888
	Wilks' Lambda	.888
	Hotelling's Trace	.888
	Roy's Largest Root	.888
Attributes	Pillai's Trace	.308
	Wilks' Lambda	.308
	Hotelling's Trace	.308
	Roy's Largest Root	.308
Visualizations * Datasets	Pillai's Trace	.677
	Wilks' Lambda	.677
	Hotelling's Trace	.677
	Roy's Largest Root	.677
Visualizations * Attributes	Pillai's Trace	.664
	Wilks' Lambda	.664
	Hotelling's Trace	.664
	Roy's Largest Root	.664
Datasets * Attributes	Pillai's Trace	.440
	Wilks' Lambda	.440
	Hotelling's Trace	.440
	Roy's Largest Root	.440
Visualizations * Datasets *	Pillai's Trace	.430
Attributes	Wilks' Lambda	.430
	Hotelling's Trace	.430
	Roy's Largest Root	.430

a. Design: Intercept

Within Subjects Design: Visualizations + Datasets + Attributes + Visualizations \* Datasets + Visualizations \* Attributes + Datasets \* Attributes + Visualizations \* Datasets \* Attributes

b. Exact statistic

#### c. Computed using alpha = .05

### Mauchly's Test of Sphericity<sup>a</sup>

Measure: MEASURE\_1

Within Subjects Effect	Mauchly's W	Approx. Chi- Square	df	Sig.	Epsilon <sup>b</sup> Greenhouse- Geisser
Visualizations	.438	12.738	9	.177	.687
Datasets	1.000	.000	0		1.000
Attributes	.995	.076	2	.963	.995
Visualizations * Datasets	.646	6.737	9	.666	.831
Visualizations * Attributes	.057	40.473	35	.268	.615
Datasets * Attributes	.847	2.654	2	.265	.867
Visualizations * Datasets * Attributes	.058	40.257	35	.276	.681

## Mauchly's Test of Sphericity<sup>a</sup>

Measure: MEASURE\_1

Epsilon<sup>b</sup>

Within Subjects Effect	Huynh-Feldt	Lower-bound
Visualizations	.832	.250
Datasets	1.000	1.000
Attributes	1.000	.500
Visualizations * Datasets	1.000	.250
Visualizations * Attributes	.896	.125
Datasets * Attributes	.957	.500
Visualizations * Datasets * Attributes	1.000	.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: Visualizations + Datasets + Attributes + Visualizations \* Datasets + Visualizations \* Attributes + Datasets \* Attributes + Visualizations \* 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.

Source		Type III Sum of Squares	df	Mean Square	F
Visualizations	Sphericity Assumed	2.109	4	.527	9.380
Visualizations	Greenhouse-Geisser	2.109	2.746	.768	9.380
	Huynh-Feldt	2.109	3.328	.634	9.380
	Lower-bound	2.109	1.000	2.109	9.380
Frrar(\/iouglizations)		3.823	68	.056	9.360
Error(Visualizations)	Sphericity Assumed Greenhouse-Geisser	3.823	46.689	.036	
	Huynh-Feldt	3.823	56.575	.068	
Detecto	Lower-bound	3.823	17.000	.225	44.000
Datasets	Sphericity Assumed	.433	1 222	.433	11.362
	Greenhouse-Geisser	.433	1.000	.433	11.362
	Huynh-Feldt	.433	1.000	.433	11.362
	Lower-bound	.433	1.000	.433	11.362
Error(Datasets)	Sphericity Assumed	.648	17	.038	
	Greenhouse-Geisser	.648	17.000	.038	
	Huynh-Feldt	.648	17.000	.038	
	Lower-bound	.648	17.000	.038	
Attributes	Sphericity Assumed	.308	2	.154	1.936
	Greenhouse-Geisser	.308	1.991	.155	1.936
	Huynh-Feldt	.308	2.000	.154	1.936
	Lower-bound	.308	1.000	.308	1.936
Error(Attributes)	Sphericity Assumed	2.705	34	.080	
	Greenhouse-Geisser	2.705	33.839	.080.	
	Huynh-Feldt	2.705	34.000	.080.	
	Lower-bound	2.705	17.000	.159	
Visualizations * Datasets	Sphericity Assumed	.484	4	.121	3.851
	Greenhouse-Geisser	.484	3.322	.146	3.851
	Huynh-Feldt	.484	4.000	.121	3.851
	Lower-bound	.484	1.000	.484	3.851
Error	Sphericity Assumed	2.137	68	.031	
(Visualizations*Datasets)	Greenhouse-Geisser	2.137	56.478	.038	
	Huynh-Feldt	2.137	68.000	.031	
	Lower-bound	2.137	17.000	.126	
Visualizations * Attributes	Sphericity Assumed	.872	8	.109	2.448
	Greenhouse-Geisser	.872	4.922	.177	2.448

Source		Sig.	Partial Eta Squared	Noncent. Parameter
Visualizations	Sphericity Assumed	.000	.356	37.518
	Greenhouse-Geisser	.000	.356	25.760
	Huynh-Feldt	.000	.356	31.214
	Lower-bound	.007	.356	9.380
Error(Visualizations)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets	Sphericity Assumed	.004	.401	11.362
	Greenhouse-Geisser	.004	.401	11.362
	Huynh-Feldt	.004	.401	11.362
	Lower-bound	.004	.401	11.362
Error(Datasets)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Attributes	Sphericity Assumed	.160	.102	3.873
	Greenhouse-Geisser	.160	.102	3.854
	Huynh-Feldt	.160	.102	3.873
	Lower-bound	.182	.102	1.936
Error(Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Datasets	Sphericity Assumed	.007	.185	15.406
	Greenhouse-Geisser	.012	.185	12.796
	Huynh-Feldt	.007	.185	15.406
	Lower-bound	.066	.185	3.851
Error	Sphericity Assumed			
(Visualizations*Datasets)	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Attributes	Sphericity Assumed	.017	.126	19.586
	Greenhouse-Geisser	.041	.126	12.050

Source		Observed Power <sup>a</sup>
Visualizations	Sphericity Assumed	.999
	Greenhouse-Geisser	.992
	Huynh-Feldt	.997
	Lower-bound	.823
Error(Visualizations)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets	Sphericity Assumed	.888
	Greenhouse-Geisser	.888
	Huynh-Feldt	.888
	Lower-bound	.888
Error(Datasets)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Attributes	Sphericity Assumed	.373
	Greenhouse-Geisser	.372
	Huynh-Feldt	.373
	Lower-bound	.260
Error(Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Datasets	Sphericity Assumed	.876
	Greenhouse-Geisser	.823
	Huynh-Feldt	.876
	Lower-bound	.457
Error	Sphericity Assumed	
(Visualizations*Datasets)	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Attributes	Sphericity Assumed	.889
	Greenhouse-Geisser	.742

0		Type III Sum of	-14	Maan Causas	F
Source		Squares	df	Mean Square	
	Huynh-Feldt	.872	7.169	.122	2.448
	Lower-bound	.872	1.000	.872	2.448
Error	Sphericity Assumed	6.056	136	.045	
(Visualizations*Attributes)	Greenhouse-Geisser	6.056	83.670	.072	
	Huynh-Feldt	6.056	121.878	.050	
	Lower-bound	6.056	17.000	.356	
Datasets * Attributes	Sphericity Assumed	.639	2	.320	3.682
	Greenhouse-Geisser	.639	1.735	.368	3.682
	Huynh-Feldt	.639	1.915	.334	3.682
	Lower-bound	.639	1.000	.639	3.682
Error(Datasets*Attributes)	Sphericity Assumed	2.951	34	.087	
Enor(Datasets Attributes)	Greenhouse-Geisser	2.951	29.493	.100	
	Huynh-Feldt	2.951	32.549	.091	
	Lower-bound	2.951	17.000	.174	
Visualizations * Datasets *	Sphericity Assumed	1.145	8	.143	3.219
Attributes	Greenhouse-Geisser	1.145	5.449	.210	3.219
	Huynh-Feldt	1.145	8.000	.143	3.219
	Lower-bound	1.145	1.000	1.145	3.219
Error	Sphericity Assumed	6.046	136	.044	
(Visualizations*Datasets*Att ributes)	Greenhouse-Geisser	6.046	92.635	.065	
110000)	Huynh-Feldt	6.046	136.000	.044	
	Lower-bound	6.046	17.000	.356	

Source		Sig.	Partial Eta Squared	Noncent. Parameter
	Huynh-Feldt	.021	.126	17.553
	Lower-bound	.136	.126	2.448
Error	Sphericity Assumed			
(Visualizations*Attributes)	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets * Attributes	Sphericity Assumed	.036	.178	7.364
	Greenhouse-Geisser	.043	.178	6.388
	Huynh-Feldt	.038	.178	7.050
	Lower-bound	.072	.178	3.682
Error(Datasets*Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Datasets *	Sphericity Assumed	.002	.159	25.752
Attributes	Greenhouse-Geisser	.008	.159	17.540
	Huynh-Feldt	.002	.159	25.752
	Lower-bound	.091	.159	3.219
Error	Sphericity Assumed			
(Visualizations*Datasets*Att ributes)	Greenhouse-Geisser			
· · · · · · · · · · · · · · · · · · ·	Huynh-Feldt			
	Lower-bound			

Source		Observed Power <sup>a</sup>
	Huynh-Feldt	.860
	Lower-bound	.315
Error	Sphericity Assumed	
(Visualizations*Attributes)	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets * Attributes	Sphericity Assumed	.638
	Greenhouse-Geisser	.592
	Huynh-Feldt	.623
	Lower-bound	.441
Error(Datasets*Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Datasets *	Sphericity Assumed	.964
Attributes	Greenhouse-Geisser	.891
	Huynh-Feldt	.964
	Lower-bound	.395
Error	Sphericity Assumed	
(Visualizations*Datasets*Att ributes)	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	

a. Computed using alpha = .05

Source	Visualizations	Datasets	Attributes	Type III Sum of Squares	df
Visualizations	Linear	Datasets	Attributes	1.084	1
VIOGANZANONO	Quadratic			.241	1
	Cubic			.157	1
	Order 4			.628	1
Error(Visualizations)	Linear			.508	17
,	Quadratic			.933	17
	Cubic			.982	17
	Order 4			1.400	17
Datasets		Linear		.433	1
Error(Datasets)		Linear		.648	17
Attributes			Linear	.201	1
			Quadratic	.107	1
Error(Attributes)			Linear	1.334	17
			Quadratic	1.372	17
Visualizations * Datasets	Linear	Linear		.022	1
	Quadratic	Linear		.009	1
	Cubic	Linear		.010	1
	Order 4	Linear		.443	1
Error	Linear	Linear		.323	17
(Visualizations*Datasets)	Quadratic	Linear		.511	17
	Cubic	Linear		.641	17
	Order 4	Linear		.662	17
Visualizations * Attributes	Linear		Linear	.122	1
			Quadratic	.114	1
	Quadratic		Linear	.001	1
			Quadratic	.233	1
	Cubic		Linear	.022	1
			Quadratic	.005	1
	Order 4		Linear	.000	1
			Quadratic	.375	1
Error	Linear		Linear	.581	17
(Visualizations*Attributes)			Quadratic	.487	17
	Quadratic		Linear	.788	17
			Quadratic	.690	17

Source	Visualizations	Datasets	Attributes	Mean Square	F
Visualizations	Linear	Dalasels	Attributes	1.084	36.267
Visualizations	Quadratic			.241	4.388
	Cubic			.157	2.718
	Order 4			.628	7.622
Error(Visualizations)	Linear			.030	7.022
Error (vioudii Zationo)	Quadratic			.055	
	Cubic			.058	
	Order 4			.082	
Datasets	0.00.	Linear		.433	11.362
Error(Datasets)		Linear		.038	
Attributes			Linear	.201	2.559
			Quadratic	.107	1.331
Error(Attributes)			Linear	.078	
(,			Quadratic	.081	
Visualizations * Datasets	Linear	Linear		.022	1.140
	Quadratic	Linear		.009	.311
	Cubic	Linear		.010	.263
	Order 4	Linear		.443	11.383
Error	Linear	Linear		.019	
(Visualizations*Datasets)	Quadratic	Linear		.030	
	Cubic	Linear		.038	
	Order 4	Linear		.039	
Visualizations * Attributes	Linear		Linear	.122	3.566
			Quadratic	.114	3.969
	Quadratic		Linear	.001	.029
			Quadratic	.233	5.749
	Cubic		Linear	.022	.348
			Quadratic	.005	.097
	Order 4		Linear	.000	.004
			Quadratic	.375	10.098
Error	Linear		Linear	.034	
(Visualizations*Attributes)			Quadratic	.029	
	Quadratic		Linear	.046	
			Quadratic	.041	

Source	Visualizations	Datasets	Attributes	Sig.	Partial Eta Squared
Visualizations	Linear			.000	.681
	Quadratic			.051	.205
	Cubic			.118	.138
	Order 4			.013	.310
Error(Visualizations)	Linear				
	Quadratic				
	Cubic				
	Order 4				
Datasets		Linear		.004	.401
Error(Datasets)		Linear			
Attributes			Linear	.128	.131
			Quadratic	.265	.073
Error(Attributes)			Linear		
			Quadratic		
Visualizations * Datasets	Linear	Linear		.301	.063
	Quadratic	Linear		.584	.018
	Cubic	Linear		.615	.015
	Order 4	Linear		.004	.401
Error	Linear	Linear			
(Visualizations*Datasets)	Quadratic	Linear			
	Cubic	Linear			
	Order 4	Linear			
Visualizations * Attributes	Linear		Linear	.076	.173
			Quadratic	.063	.189
	Quadratic		Linear	.866	.002
			Quadratic	.028	.253
	Cubic		Linear	.563	.020
			Quadratic	.759	.006
	Order 4		Linear	.949	.000
			Quadratic	.006	.373
Error	Linear		Linear		
(Visualizations*Attributes)			Quadratic		
	Quadratic		Linear		
			Quadratic		

Source	Visualizations	Datasets	Attributes	Noncent. Parameter	Observed Power <sup>a</sup>
Visualizations	Linear			36.267	1.000
	Quadratic			4.388	.506
	Cubic			2.718	.343
	Order 4			7.622	.740
Error(Visualizations)	Linear				
	Quadratic				
	Cubic				
	Order 4				
Datasets		Linear		11.362	.888
Error(Datasets)		Linear			
Attributes			Linear	2.559	.326
			Quadratic	1.331	.193
Error(Attributes)			Linear		
			Quadratic		
Visualizations * Datasets	Linear	Linear		1.140	.172
	Quadratic	Linear		.311	.082
	Cubic	Linear		.263	.077
	Order 4	Linear		11.383	.888
Error	Linear	Linear			
(Visualizations*Datasets)	Quadratic	Linear			
	Cubic	Linear			
	Order 4	Linear			
Visualizations * Attributes	Linear		Linear	3.566	.429
			Quadratic	3.969	.468
	Quadratic		Linear	.029	.053
			Quadratic	5.749	.618
	Cubic		Linear	.348	.086
			Quadratic	.097	.060
	Order 4		Linear	.004	.050
			Quadratic	10.098	.849
Error	Linear		Linear		
(Visualizations*Attributes)			Quadratic		
	Quadratic		Linear		
			Quadratic		

				Type III Sum of	
Source	Visualizations	Datasets	Attributes	Squares	df
	Cubic		Linear	1.062	17
			Quadratic	.939	17
	Order 4		Linear	.878	17
			Quadratic	.631	17
Datasets * Attributes		Linear	Linear	.616	1
			Quadratic	.023	1
Error(Datasets*Attributes)		Linear	Linear	1.912	17
			Quadratic	1.038	17
Visualizations * Datasets *	Linear	Linear	Linear	.098	1
Attributes			Quadratic	.076	1
	Quadratic	Linear	Linear	.267	1
			Quadratic	5.459E-5	1
	Cubic	Linear	Linear	.199	1
			Quadratic	.017	1
	Order 4	Linear	Linear	.479	1
			Quadratic	.008	1
Error	Linear	Linear	Linear	.533	17
(Visualizations*Datasets*Att ributes)			Quadratic	.524	17
115 4100)	Quadratic	Linear	Linear	1.399	17
			Quadratic	.680	17
	Cubic	Linear	Linear	.628	17
			Quadratic	.768	17
	Order 4	Linear	Linear	.778	17
			Quadratic	.735	17

Source	Visualizations	Datasets	Attributes	Mean Square	F
	Cubic		Linear	.062	
			Quadratic	.055	
	Order 4		Linear	.052	
			Quadratic	.037	
Datasets * Attributes		Linear	Linear	.616	5.475
			Quadratic	.023	.380
Error(Datasets*Attributes)		Linear	Linear	.112	
			Quadratic	.061	
Visualizations * Datasets *	Linear	Linear	Linear	.098	3.135
Attributes			Quadratic	.076	2.453
	Quadratic	Linear	Linear	.267	3.242
			Quadratic	5.459E-5	.001
	Cubic	Linear	Linear	.199	5.388
			Quadratic	.017	.382
	Order 4	Linear	Linear	.479	10.468
			Quadratic	.008	.195
Error	Linear	Linear	Linear	.031	
(Visualizations*Datasets*Att ributes)			Quadratic	.031	
nbutes)	Quadratic	Linear	Linear	.082	
			Quadratic	.040	
	Cubic	Linear	Linear	.037	
			Quadratic	.045	
	Order 4	Linear	Linear	.046	
			Quadratic	.043	

Source	Visualizations	Datasets	Attributes	Sig.	Partial Eta Squared
	Cubic		Linear		
			Quadratic		
	Order 4		Linear		
			Quadratic		
Datasets * Attributes		Linear	Linear	.032	.244
			Quadratic	.546	.022
Error(Datasets*Attributes)		Linear	Linear		
			Quadratic		
Visualizations * Datasets *	Linear	Linear	Linear	.095	.156
Attributes			Quadratic	.136	.126
	Quadratic	Linear	Linear	.090	.160
			Quadratic	.971	.000
	Cubic	Linear	Linear	.033	.241
			Quadratic	.545	.022
	Order 4	Linear	Linear	.005	.381
			Quadratic	.664	.011
Error	Linear	Linear	Linear		
(Visualizations*Datasets*Att ributes)			Quadratic		
The disco	Quadratic	Linear	Linear		
			Quadratic		
	Cubic	Linear	Linear		
			Quadratic		
	Order 4	Linear	Linear		
			Quadratic		

Source	Visualizations	Datasets	Attributes	Noncent. Parameter	Observed Power <sup>a</sup>
	Cubic		Linear		
			Quadratic		
	Order 4		Linear		
			Quadratic		
Datasets * Attributes		Linear	Linear	5.475	.597
			Quadratic	.380	.090
Error(Datasets*Attributes)		Linear	Linear		
			Quadratic		
Visualizations * Datasets *	Linear	Linear	Linear	3.135	.386
Attributes			Quadratic	2.453	.315
	Quadratic	Linear	Linear	3.242	.397
			Quadratic	.001	.050
	Cubic	Linear	Linear	5.388	.591
			Quadratic	.382	.090
	Order 4	Linear	Linear	10.468	.862
			Quadratic	.195	.070
Error	Linear	Linear	Linear		
(Visualizations*Datasets*Att ributes)			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	1021.611	1	1021.611	2994.423	.000	.994
Error	5.800	17	.341			

### **Tests of Between-Subjects Effects**

Measure: MEASURE\_1

Transformed Variable: Average

Source	Noncent. Parameter	Observed Power <sup>a</sup>
Intercept	2994.423	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	
1.375	.025	1.322	1.428	

### 2. Visualizations

### **Estimates**

			95% Confidence Interval		
Visualizations	Mean	Std. Error	Lower Bound	Upper Bound	
1	1.284	.029	1.223	1.345	
2	1.344	.038	1.265	1.423	
3	1.455	.039	1.374	1.537	
4	1.359	.031	1.294	1.424	
5	1.435	.024	1.384	1.485	

## **Pairwise Comparisons**

ivieasure. IVILAS	SILE_1				95% Confidence <sup>b</sup>
(I) Visualizations	(J) Visualizations	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	Lower Bound
1	2	060	.030	.635	158
	3	171 <sup>*</sup>	.035	.001	285
	4	075	.027	.120	162
	5	151 <sup>*</sup>	.025	.000	231
2	1	.060	.030	.635	037
	3	111	.046	.271	260
	4	015	.032	1.000	117
	5	091*	.028	.043	179
3	1	.171*	.035	.001	.058
	2	.111	.046	.271	037
	4	.096*	.030	.046	.001
	5	.021	.035	1.000	093
4	1	.075	.027	.120	011
	2	.015	.032	1.000	087
	3	096 <sup>*</sup>	.030	.046	191
	5	076	.030	.230	173
5	1	.151*	.025	.000	.071
	2	.091*	.028	.043	.002
	3	021	.035	1.000	134
	4	.076	.030	.230	022

### **Pairwise Comparisons**

Measure: MEASURE\_1

95% Confidence Interval for <sup>b</sup>...

(I) Visualizations	(J) Visualizations	Upper Bound
1	2	.037
	3	058
	4	.011
	5	071
2	1	.158
	3	.037
	4	.087
	5	002
3	1	.285
	2	.260
	4	.191
	5	.134
4	1	.162
	2	.117
	3	001
	5	.022
5	1	.231
	2	.179
	3	.093
	4	.173

Based on estimated marginal means

b. Adjustment for multiple comparisons: Bonferroni.

 $<sup>^{\</sup>star}.$  The mean difference is significant at the .05 level.

### **Multivariate Tests**

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.730	9.449 <sup>a</sup>	4.000	14.000	.001	.730
Wilks' lambda	.270	9.449 <sup>a</sup>	4.000	14.000	.001	.730
Hotelling's trace	2.700	9.449 <sup>a</sup>	4.000	14.000	.001	.730
Roy's largest root	2.700	9.449 <sup>a</sup>	4.000	14.000	.001	.730

### **Multivariate Tests**

	Noncent. Parameter	Observed Power <sup>b</sup>
Pillai's trace	37.796	.993
Wilks' lambda	37.796	.993
Hotelling's trace	37.796	.993
Roy's largest root	37.796	.993

Each F tests the multivariate effect of Visualizations. 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**

			95% Confidence Interval		
Datasets	Mean	Std. Error	Lower Bound	Upper Bound	
1	1.404	.027	1.347	1.461	
2	1.347	.026	1.292	1.402	

### **Pairwise Comparisons**

Measure: MEASURE\_1

					95% Confidence Interval for Difference <sup>b</sup>	
(I) Datasets	(J) Datasets	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	Lower Bound	Upper Bound
1	2	.057*	.017	.004	.021	.092
2	1	057 <sup>*</sup>	.017	.004	092	021

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	.401	11.362 <sup>a</sup>	1.000	17.000	.004	.401
Wilks' lambda	.599	11.362 <sup>a</sup>	1.000	17.000	.004	.401
Hotelling's trace	.668	11.362 <sup>a</sup>	1.000	17.000	.004	.401
Roy's largest root	.668	11.362 <sup>a</sup>	1.000	17.000	.004	.401

#### **Multivariate Tests**

	Noncent. Parameter	Observed Power <sup>b</sup>
Pillai's trace	11.362	.888
Wilks' lambda	11.362	.888
Hotelling's trace	11.362	.888
Roy's largest root	11.362	.888

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

			95% Confidence Interval		
Attributes	Mean	Std. Error	Lower Bound	Upper Bound	
1	1.362	.034	1.290	1.434	
2	1.356	.030	1.292	1.419	
3	1.409	.027	1.353	1.465	

### **Pairwise Comparisons**

Measure: MEASURE\_1

		Mean			95% Confidence Interval for Difference <sup>a</sup>	
(I) Attributes	(J) Attributes	Difference (I-J)	Std. Error	Sig. <sup>a</sup>	Lower Bound	Upper Bound
1	2	.006	.029	1.000	071	.083
	3	047	.030	.384	126	.031
2	1	006	.029	1.000	083	.071
	3	054	.031	.298	135	.028
3	1	.047	.030	.384	031	.126
	2	.054	.031	.298	028	.135

Based on estimated marginal means

### **Multivariate Tests**

	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's trace	.177	1.721 <sup>a</sup>	2.000	16.000	.210	.177
Wilks' lambda	.823	1.721 <sup>a</sup>	2.000	16.000	.210	.177
Hotelling's trace	.215	1.721 <sup>a</sup>	2.000	16.000	.210	.177
Roy's largest root	.215	1.721 <sup>a</sup>	2.000	16.000	.210	.177

### **Multivariate Tests**

	Noncent. Parameter	Observed Power <sup>b</sup>
Pillai's trace	3.442	.308
Wilks' lambda	3.442	.308
Hotelling's trace	3.442	.308
Roy's largest root	3.442	.308

a. Adjustment for multiple comparisons: Bonferroni.

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. Visualizations \* Datasets

				95% Confidence Interval	
Visualizations	Datasets	Mean	Std. Error	Lower Bound	Upper Bound
1	1	1.298	.037	1.220	1.375
	2	1.270	.027	1.212	1.328
2	1	1.402	.035	1.328	1.476
	2	1.286	.047	1.186	1.386
3	1	1.433	.043	1.342	1.523
	2	1.478	.040	1.394	1.562
4	1	1.414	.034	1.343	1.485
	2	1.304	.042	1.215	1.394
5	1	1.472	.030	1.409	1.536
	2	1.397	.026	1.343	1.452

### 6. Visualizations \* Attributes

Measure: MEASURE\_1

				95% Confidence Interval	
Visualizations	Attributes	Mean	Std. Error	Lower Bound	Upper Bound
1	1	1.212	.046	1.114	1.309
	2	1.335	.031	1.270	1.400
	3	1.305	.032	1.237	1.374
2	1	1.327	.045	1.231	1.423
	2	1.288	.062	1.156	1.419
	3	1.418	.038	1.337	1.499
3	1	1.430	.059	1.306	1.555
	2	1.460	.036	1.384	1.536
	3	1.476	.056	1.357	1.594
4	1	1.411	.058	1.287	1.534
	2	1.261	.034	1.189	1.334
	3	1.406	.042	1.317	1.494
5	1	1.430	.034	1.358	1.501
	2	1.434	.041	1.347	1.521
	3	1.441	.037	1.363	1.519

### 7. Datasets \* Attributes

				95% Confidence Interval	
Datasets	Attributes	Mean	Std. Error	Lower Bound	Upper Bound
1	1	1.344	.042	1.256	1.432
	2	1.393	.033	1.323	1.464
	3	1.474	.037	1.397	1.552
2	1	1.379	.044	1.286	1.473
	2	1.318	.033	1.248	1.388
	3	1.344	.025	1.291	1.397