```
GET
  FILE='C:\Users\Bahador\Desktop\SPSS-Analysis\Correlation\Correlation Time.sa
DATASET NAME DataSet1 WINDOW=FRONT.
GLM Bar_Num_Num_CarBar_Num_Num_MovieBar_Ord_Num_CarBar_Ord_Num_MovieLine_N
um_Num_Car
    Line_Num_Num_MovieLine_Ord_Num_CarLine_Ord_Num_MoviePie_Num_Num_CarPie
_Num_Num_Movie
    Pie_Ord_Num_Car Pie_Ord_Num_MovieScatter_Num_Num_CarScatter_Num_Num_Movi
e Scatter_Ord_Num_Car
    Scatter_Ord_Num_MovieTable_Num_Num_CarTable_Num_Num_MovieTable_Ord_Num_
Car Table Ord Num Movie
  /WSFACTOR=Visualizations 5 Polynomial Datasets 2 Polynomial Attributes 2 Pol
ynomial
  /METHOD=SSTYPE(3)
  /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
```

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

#### **General Linear Model**

zations\*Attributes

### Notes

Output Created		24-MAR-2017 13:31:48
Comments		
Input	Data	C: \Users\Bahador\Desktop\S PSS- Analysis\Correlation\Correl ation_Time.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**

	Notes
Syntax	GLM Bar_Num_Num_Car Bar_Num_Num_Movie Bar_Ord_Num_Car Bar_Ord_Num_Movie Line_Num_Num_Car Line_Num_Num_Car Line_Ord_Num_Movie Pie_Num_Num_Car Pie_Num_Num_Car Pie_Ord_Num_Car Pie_Ord_Num_Car Pie_Ord_Num_Car Pie_Ord_Num_Movie Scatter_Num_Num_Car Scatter_Num_Num_Car Scatter_Ord_Num_Car
	Scatter_Ord_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 2 Polynomial /METHOD=SSTYPE(3) /EMMEANS=TABLES (Visualizations) COMPARE ADJ (BONFERRONI) /EMMEANS=TABLES (Datasets) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES (Attributes) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES (Attributes) COMPARE ADJ(BONFERRONI) /EMMEANS=TABLES (Visualizations*Datasets) /EMMEANS=TABLES (Visualizations*Attributes) /EMMEANS=TABLES (Datasets*Attributes) /PRINT=DESCRIPTIVE ETASQ OPOWER HOMOGENEITY /CRITERIA=ALPHA(.05)
	/WSDESIGN=Visualizatio ns Datasets Attributes Visualizations*Datasets Visualizations*Attributes Datasets*Attributes Visualizations*Datasets*At

tributes.

#### **Notes**

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

[DataSet1] C:\Users\Bahador\Desktop\SPSS-Analysis\Correlation\Correlation\_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 1		Bar_Num_Nu m_Car
		2	Bar_Num_Nu m_Movie
	2	1	Bar_Ord_Nu m_Car
		2	Bar_Ord_Nu m_Movie
2	1	1	Line_Num_Nu m_Car
		2	Line_Num_Nu m_Movie
	2	1	Line_Ord_Nu m_Car
		2	Line_Ord_Nu m_Movie
3	1	1	Pie_Num_Nu m_Car
		2	Pie_Num_Nu m_Movie
	2	1	Pie_Ord_Num _Car
		2	Pie_Ord_Num _Movie

## Within-Subjects Factors

Measure: MEASURE\_1

Visualizations	Datasets	Attributes	Dependent Variable
4	1		Scatter_Num_ Num_Car
		2	Scatter_Num_ Num_Movie
	2	1	Scatter_Ord_ Num_Car
		2	Scatter_Ord_ Num_Movie
5	1	1	Table_Num_ Num_Car
		2	Table_Num_ Num_Movie
	2	1	Table_Ord_N um_Car
		2	Table_Ord_N um_Movie

## **Descriptive Statistics**

	Mean	Std. Deviation	N
Bar_Num_Num_Car	.7978	.39054	18
Bar_Num_Num_Movie	.8889	.30844	18
Bar_Ord_Num_Car	.8472	.32435	18
Bar_Ord_Num_Movie	.8718	.35319	18
Line_Num_Num_Car	.8660	.32942	18
Line_Num_Num_Movie	.8349	.27215	18
Line_Ord_Num_Car	.7104	.27104	18
Line_Ord_Num_Movie	.7249	.28448	18
Pie_Num_Num_Car	1.2039	.49859	18
Pie_Num_Num_Movie	1.0849	.44719	18
Pie_Ord_Num_Car	1.0299	.31486	18
Pie_Ord_Num_Movie	1.1127	.38983	18
Scatter_Num_Num_Car	.9563	.29336	18
Scatter_Num_Num_Movie	.9296	.38932	18
Scatter_Ord_Num_Car	.7908	.32577	18

## **Descriptive Statistics**

	Mean	Std. Deviation	N
Scatter_Ord_Num_Movie	.7216	.27488	18
Table_Num_Num_Car	1.2336	.27127	18
Table_Num_Num_Movie	1.2585	.37364	18
Table_Ord_Num_Car	1.0237	.30268	18
Table_Ord_Num_Movie	11.8333	7.77817	18

# **Multivariate Tests**<sup>a</sup>

Effect		Value	F	Hypothesis df	Error df
Visualizations	Pillai's Trace	.838	18.100 <sup>b</sup>	4.000	14.000
	Wilks' Lambda	.162	18.100 <sup>b</sup>	4.000	14.000
	Hotelling's Trace	5.171	18.100 <sup>b</sup>	4.000	14.000
	Roy's Largest Root	5.171	18.100 <sup>b</sup>	4.000	14.000
Datasets	Pillai's Trace	.620	27.707 <sup>b</sup>	1.000	17.000
	Wilks' Lambda	.380	27.707 <sup>b</sup>	1.000	17.000
	Hotelling's Trace	1.630	27.707 <sup>b</sup>	1.000	17.000
	Roy's Largest Root	1.630	27.707 <sup>b</sup>	1.000	17.000
Attributes	Pillai's Trace	.672	34.826 <sup>b</sup>	1.000	17.000
	Wilks' Lambda	.328	34.826 <sup>b</sup>	1.000	17.000
	Hotelling's Trace	2.049	34.826 <sup>b</sup>	1.000	17.000
	Roy's Largest Root	2.049	34.826 <sup>b</sup>	1.000	17.000
Visualizations * Datasets	Pillai's Trace	.724	9.162 <sup>b</sup>	4.000	14.000
	Wilks' Lambda	.276	9.162 <sup>b</sup>	4.000	14.000
	Hotelling's Trace	2.618	9.162 <sup>b</sup>	4.000	14.000
	Roy's Largest Root	2.618	9.162 <sup>b</sup>	4.000	14.000
Visualizations * Attributes	Pillai's Trace	.775	12.022 <sup>b</sup>	4.000	14.000
	Wilks' Lambda	.225	12.022 <sup>b</sup>	4.000	14.000
	Hotelling's Trace	3.435	12.022 <sup>b</sup>	4.000	14.000
	Roy's Largest Root	3.435	12.022 <sup>b</sup>	4.000	14.000
Datasets * Attributes	Pillai's Trace	.695	38.649 <sup>b</sup>	1.000	17.000
	Wilks' Lambda	.305	38.649 <sup>b</sup>	1.000	17.000
	Hotelling's Trace	2.273	38.649 <sup>b</sup>	1.000	17.000
	Roy's Largest Root	2.273	38.649 <sup>b</sup>	1.000	17.000

# **Multivariate Tests**<sup>a</sup>

Effect		Sig.	Partial Eta Squared	Noncent. Parameter
Visualizations	Pillai's Trace	.000	.838	72.400
	Wilks' Lambda	.000	.838	72.400
	Hotelling's Trace	.000	.838	72.400
	Roy's Largest Root	.000	.838	72.400
Datasets	Pillai's Trace	.000	.620	27.707
	Wilks' Lambda	.000	.620	27.707
	Hotelling's Trace	.000	.620	27.707
	Roy's Largest Root	.000	.620	27.707
Attributes	Pillai's Trace	.000	.672	34.826
	Wilks' Lambda	.000	.672	34.826
	Hotelling's Trace	.000	.672	34.826
	Roy's Largest Root	.000	.672	34.826
Visualizations * Datasets	Pillai's Trace	.001	.724	36.647
	Wilks' Lambda	.001	.724	36.647
	Hotelling's Trace	.001	.724	36.647
	Roy's Largest Root	.001	.724	36.647
Visualizations * Attributes	Pillai's Trace	.000	.775	48.088
	Wilks' Lambda	.000	.775	48.088
	Hotelling's Trace	.000	.775	48.088
	Roy's Largest Root	.000	.775	48.088
Datasets * Attributes	Pillai's Trace	.000	.695	38.649
	Wilks' Lambda	.000	.695	38.649
	Hotelling's Trace	.000	.695	38.649
	Roy's Largest Root	.000	.695	38.649

# **Multivariate Tests**<sup>a</sup>

Effect		Observed Power <sup>c</sup>
Visualizations	Pillai's Trace	1.000
	Wilks' Lambda	1.000
	Hotelling's Trace	1.000
	Roy's Largest Root	1.000
Datasets	Pillai's Trace	.999
	Wilks' Lambda	.999
	Hotelling's Trace	.999
	Roy's Largest Root	.999
Attributes	Pillai's Trace	1.000
	Wilks' Lambda	1.000
	Hotelling's Trace	1.000
	Roy's Largest Root	1.000
Visualizations * Datasets	Pillai's Trace	.991
	Wilks' Lambda	.991
	Hotelling's Trace	.991
	Roy's Largest Root	.991
Visualizations * Attributes	Pillai's Trace	.999
	Wilks' Lambda	.999
	Hotelling's Trace	.999
	Roy's Largest Root	.999
Datasets * Attributes	Pillai's Trace	1.000
	Wilks' Lambda	1.000
	Hotelling's Trace	1.000
	Roy's Largest Root	1.000

# **Multivariate Tests**<sup>a</sup>

Effect		Value	F	Hypothesis df	Error df
	D T				
Visualizations * Datasets *	Pillai's Trace	.728	9.351 <sup>b</sup>	4.000	14.000
Attributes	Wilks' Lambda	.272	9.351 <sup>b</sup>	4.000	14.000
	Hotelling's Trace	2.672	9.351 <sup>b</sup>	4.000	14.000
	Roy's Largest Root	2.672	9.351 <sup>b</sup>	4.000	14.000

## **Multivariate Tests**<sup>a</sup>

Effect		Sig.	Partial Eta Squared	Noncent. Parameter
Visualizations * Datasets * Attributes	Pillai's Trace	.001	.728	37.404
	Wilks' Lambda	.001	.728	37.404
	Hotelling's Trace	.001	.728	37.404
	Roy's Largest Root	.001	.728	37.404

# **Multivariate Tests**<sup>a</sup>

Effect		Observed Power <sup>c</sup>
Visualizations * Datasets *	Pillai's Trace	.992
Attributes	Wilks' Lambda	.992
	Hotelling's Trace	.992
	Roy's Largest Root	.992

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>
Within Subjects Effect	Mauchly's W	Approx. Chi- Square	df	Sig.	Greenhouse- Geisser
Visualizations	.000	165.417	9	.000	.260
Datasets	1.000	.000	0		1.000
Attributes	1.000	.000	0		1.000
Visualizations * Datasets	.000	178.386	9	.000	.255
Visualizations * Attributes	.000	191.258	9	.000	.254
Datasets * Attributes	1.000	.000	0		1.000
Visualizations * Datasets * Attributes	.000	170.817	9	.000	.256

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

Measure: MEASURE\_1

Epsilon<sup>b</sup>

Within Subjects Effect	Huynh-Feldt	Lower-bound
Visualizations	.262	.250
Datasets	1.000	1.000
Attributes	1.000	1.000
Visualizations * Datasets	.256	.250
Visualizations * Attributes	.255	.250
Datasets * Attributes	1.000	1.000
Visualizations * Datasets * Attributes	.257	.250

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	501.980	4	125.495	42.344
Visualizations	Greenhouse-Geisser	501.980	1.039	483.137	42.344
	Huynh-Feldt	501.980	1.039	479.709	42.344
	Lower-bound	501.980	1.000	501.980	42.344
Error(Visualizations)	Sphericity Assumed	201.530	68	2.964	42.344
Litor(visualizations)	Greenhouse-Geisser	201.530	17.663	11.410	
	Huynh-Feldt	201.530	17.789	11.329	
	Lower-bound	201.530	17.709	11.855	
Datasets	Sphericity Assumed	83.153	17.000	83.153	27.707
Dalasels	Greenhouse-Geisser	83.153	1.000	83.153	27.707
			1.000		
	Huynh-Feldt	83.153		83.153	27.707
F(D-tt-)	Lower-bound	83.153	1.000	83.153	27.707
Error(Datasets)	Sphericity Assumed	51.020	17	3.001	
	Greenhouse-Geisser	51.020	17.000	3.001	
	Huynh-Feldt	51.020	17.000	3.001	
	Lower-bound	51.020	17.000	3.001	
Attributes	Sphericity Assumed	105.006	1	105.006	34.826
	Greenhouse-Geisser	105.006	1.000	105.006	34.826
	Huynh-Feldt	105.006	1.000	105.006	34.826
	Lower-bound	105.006	1.000	105.006	34.826
Error(Attributes)	Sphericity Assumed	51.258	17	3.015	
	Greenhouse-Geisser	51.258	17.000	3.015	
	Huynh-Feldt	51.258	17.000	3.015	
	Lower-bound	51.258	17.000	3.015	
Visualizations * Datasets	Sphericity Assumed	401.339	4	100.335	32.957
	Greenhouse-Geisser	401.339	1.021	392.931	32.957
	Huynh-Feldt	401.339	1.025	391.380	32.957
	Lower-bound	401.339	1.000	401.339	32.957
Error	Sphericity Assumed	207.021	68	3.044	
(Visualizations*Datasets)	Greenhouse-Geisser	207.021	17.364	11.923	
	Huynh-Feldt	207.021	17.433	11.875	
	Lower-bound	207.021	17.000	12.178	
Visualizations * Attributes	Sphericity Assumed	423.345	4	105.836	35.576
	Greenhouse-Geisser	423.345	1.017	416.114	35.576

Source		Sig.	Partial Eta Squared	Noncent. Parameter
Visualizations	Sphericity Assumed	.000	.714	169.378
	Greenhouse-Geisser	.000	.714	43.996
	Huynh-Feldt	.000	.714	44.310
	Lower-bound	.000	.714	42.344
Error(Visualizations)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets	Sphericity Assumed	.000	.620	27.707
	Greenhouse-Geisser	.000	.620	27.707
	Huynh-Feldt	.000	.620	27.707
	Lower-bound	.000	.620	27.707
Error(Datasets)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Attributes	Sphericity Assumed	.000	.672	34.826
	Greenhouse-Geisser	.000	.672	34.826
	Huynh-Feldt	.000	.672	34.826
	Lower-bound	.000	.672	34.826
Error(Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Datasets	Sphericity Assumed	.000	.660	131.828
	Greenhouse-Geisser	.000	.660	33.662
	Huynh-Feldt	.000	.660	33.796
	Lower-bound	.000	.660	32.957
Error	Sphericity Assumed			
(Visualizations*Datasets)	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Attributes	Sphericity Assumed	.000	.677	142.306
	Greenhouse-Geisser	.000	.677	36.195

Source		Observed Power <sup>a</sup>
Visualizations	Sphericity Assumed	1.000
	Greenhouse-Geisser	1.000
	Huynh-Feldt	1.000
	Lower-bound	1.000
Error(Visualizations)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets	Sphericity Assumed	.999
	Greenhouse-Geisser	.999
	Huynh-Feldt	.999
	Lower-bound	.999
Error(Datasets)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Attributes	Sphericity Assumed	1.000
Attributes	Greenhouse-Geisser	1.000
	Huynh-Feldt	1.000
	Lower-bound	1.000
Error(Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Datasets	Sphericity Assumed	1.000
	Greenhouse-Geisser	1.000
	Huynh-Feldt	1.000
	Lower-bound	1.000
Error	Sphericity Assumed	
(Visualizations*Datasets)	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Attributes	Sphericity Assumed	1.000
	Greenhouse-Geisser	1.000

		Type III Sum of			
Source		Squares	df	Mean Square	F
	Huynh-Feldt	423.345	1.021	414.777	35.576
	Lower-bound	423.345	1.000	423.345	35.576
Error	Sphericity Assumed	202.293	68	2.975	
(Visualizations*Attributes)	Greenhouse-Geisser	202.293	17.295	11.696	
	Huynh-Feldt	202.293	17.351	11.659	
	Lower-bound	202.293	17.000	11.900	
Datasets * Attributes	Sphericity Assumed	107.387	1	107.387	38.649
	Greenhouse-Geisser	107.387	1.000	107.387	38.649
	Huynh-Feldt	107.387	1.000	107.387	38.649
	Lower-bound	107.387	1.000	107.387	38.649
Error(Datasets*Attributes)	Sphericity Assumed	47.235	17	2.779	
	Greenhouse-Geisser	47.235	17.000	2.779	
	Huynh-Feldt	47.235	17.000	2.779	
	Lower-bound	47.235	17.000	2.779	
Visualizations * Datasets *	Sphericity Assumed	416.235	4	104.059	35.870
Attributes	Greenhouse-Geisser	416.235	1.025	406.199	35.870
	Huynh-Feldt	416.235	1.029	404.353	35.870
	Lower-bound	416.235	1.000	416.235	35.870
Error	Sphericity Assumed	197.268	68	2.901	
(Visualizations*Datasets*Att ributes)	Greenhouse-Geisser	197.268	17.420	11.324	
Tibutooj	Huynh-Feldt	197.268	17.500	11.273	
	Lower-bound	197.268	17.000	11.604	

Source		Sig.	Partial Eta Squared	Noncent. Parameter
	Huynh-Feldt	.000	.677	36.311
	Lower-bound	.000	.677	35.576
Error	Sphericity Assumed			
(Visualizations*Attributes)	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets * Attributes	Sphericity Assumed	.000	.695	38.649
	Greenhouse-Geisser	.000	.695	38.649
	Huynh-Feldt	.000	.695	38.649
	Lower-bound	.000	.695	38.649
Error(Datasets*Attributes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualizations * Datasets *	Sphericity Assumed	.000	.678	143.480
Attributes	Greenhouse-Geisser	.000	.678	36.756
	Huynh-Feldt	.000	.678	36.924
	Lower-bound	.000	.678	35.870
Error	Sphericity Assumed			
(Visualizations*Datasets*Att ributes)	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			

Source		Observed Power <sup>a</sup>
	Huynh-Feldt	1.000
	Lower-bound	1.000
Error	Sphericity Assumed	
(Visualizations*Attributes)	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets * Attributes	Sphericity Assumed	1.000
	Greenhouse-Geisser	1.000
	Huynh-Feldt	1.000
	Lower-bound	1.000
Error(Datasets*Attributes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualizations * Datasets *	Sphericity Assumed	1.000
Attributes	Greenhouse-Geisser	1.000
	Huynh-Feldt	1.000
	Lower-bound	1.000
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	262.432	1
Visualizations	Quadratic			157.159	1
	Cubic			58.679	1
	Order 4			23.710	1
Error(Visualizations)	Linear			98.307	17
Error (viodalizationo)	Quadratic			74.417	17
	Cubic			21.927	17
	Order 4			6.880	17
Datasets		Linear		83.153	1
Error(Datasets)		Linear		51.020	17
Attributes			Linear	105.006	1
Error(Attributes)			Linear	51.258	17
Visualizations * Datasets	Linear	Linear		190.176	1
	Quadratic	Linear		151.718	1
	Cubic	Linear		50.070	1
	Order 4	Linear		9.376	1
Error	Linear	Linear		102.382	17
(Visualizations*Datasets)	Quadratic	Linear		76.298	17
	Cubic	Linear		23.859	17
	Order 4	Linear		4.481	17
Visualizations * Attributes	Linear		Linear	205.281	1
	Quadratic		Linear	156.779	1
	Cubic		Linear	53.245	1
	Order 4		Linear	8.040	1
Error	Linear		Linear	101.756	17
(Visualizations*Attributes)	Quadratic		Linear	69.104	17
	Cubic		Linear	27.131	17
	Order 4		Linear	4.302	17
Datasets * Attributes		Linear	Linear	107.387	1
Error(Datasets*Attributes)		Linear	Linear	47.235	17
Visualizations * Datasets *	Linear	Linear	Linear	210.234	1
Attributes	Quadratic	Linear	Linear	142.151	1
	Cubic	Linear	Linear	54.721	1
	Order 4	Linear	Linear	9.129	1

Source	Visualizations	Datasets	Attributes	Mean Square	F
Visualizations	Linear			262.432	45.382
	Quadratic			157.159	35.902
	Cubic			58.679	45.495
	Order 4			23.710	58.589
Error(Visualizations)	Linear			5.783	
	Quadratic			4.377	
	Cubic			1.290	
	Order 4			.405	
Datasets		Linear		83.153	27.707
Error(Datasets)		Linear		3.001	
Attributes			Linear	105.006	34.826
Error(Attributes)			Linear	3.015	
Visualizations * Datasets	Linear	Linear		190.176	31.578
	Quadratic	Linear		151.718	33.804
	Cubic	Linear		50.070	35.675
	Order 4	Linear		9.376	35.568
Error	Linear	Linear		6.022	
(Visualizations*Datasets)	Quadratic	Linear		4.488	
	Cubic	Linear		1.403	
	Order 4	Linear		.264	
Visualizations * Attributes	Linear		Linear	205.281	34.296
	Quadratic		Linear	156.779	38.569
	Cubic		Linear	53.245	33.362
	Order 4		Linear	8.040	31.769
Error	Linear		Linear	5.986	
(Visualizations*Attributes)	Quadratic		Linear	4.065	
	Cubic		Linear	1.596	
	Order 4		Linear	.253	
Datasets * Attributes		Linear	Linear	107.387	38.649
Error(Datasets*Attributes)		Linear	Linear	2.779	
Visualizations * Datasets *	Linear	Linear	Linear	210.234	38.489
Attributes	Quadratic	Linear	Linear	142.151	34.346
	Cubic	Linear	Linear	54.721	31.852
	Order 4	Linear	Linear	9.129	32.023

Source	Visualizations	Datasets	Attributes	Sig.	Partial Eta Squared
Visualizations	Linear			.000	.727
	Quadratic			.000	.679
	Cubic			.000	.728
	Order 4			.000	.775
Error(Visualizations)	Linear				
	Quadratic				
	Cubic				
	Order 4				
Datasets		Linear		.000	.620
Error(Datasets)		Linear			
Attributes			Linear	.000	.672
Error(Attributes)			Linear		
Visualizations * Datasets	Linear	Linear		.000	.650
	Quadratic	Linear		.000	.665
	Cubic	Linear		.000	.677
	Order 4	Linear		.000	.677
Error	Linear	Linear			
(Visualizations*Datasets)	Quadratic	Linear			
	Cubic	Linear			
	Order 4	Linear			
Visualizations * Attributes	Linear		Linear	.000	.669
	Quadratic		Linear	.000	.694
	Cubic		Linear	.000	.662
	Order 4		Linear	.000	.651
Error	Linear		Linear		
(Visualizations*Attributes)	Quadratic		Linear		
	Cubic		Linear		
	Order 4		Linear		
Datasets * Attributes		Linear	Linear	.000	.695
Error(Datasets*Attributes)		Linear	Linear		
Visualizations * Datasets *	Linear	Linear	Linear	.000	.694
Attributes	Quadratic	Linear	Linear	.000	.669
	Cubic	Linear	Linear	.000	.652
	Order 4	Linear	Linear	.000	.653

Source	Visualizations	Datasets	Attributes	Noncent. Parameter	Observed Power <sup>a</sup>
Visualizations	Linear			45.382	1.000
	Quadratic			35.902	1.000
	Cubic			45.495	1.000
	Order 4			58.589	1.000
Error(Visualizations)	Linear				
	Quadratic				
	Cubic				
	Order 4				
Datasets		Linear		27.707	.999
Error(Datasets)		Linear			
Attributes			Linear	34.826	1.000
Error(Attributes)			Linear		
Visualizations * Datasets	Linear	Linear		31.578	1.000
	Quadratic	Linear		33.804	1.000
	Cubic	Linear		35.675	1.000
	Order 4	Linear		35.568	1.000
Error	Linear	Linear			
(Visualizations*Datasets)	Quadratic	Linear			
	Cubic	Linear			
	Order 4	Linear			
Visualizations * Attributes	Linear		Linear	34.296	1.000
	Quadratic		Linear	38.569	1.000
	Cubic		Linear	33.362	1.000
	Order 4		Linear	31.769	1.000
Error	Linear		Linear		
(Visualizations*Attributes)	Quadratic		Linear		
	Cubic		Linear		
	Order 4		Linear		
Datasets * Attributes		Linear	Linear	38.649	1.000
Error(Datasets*Attributes)		Linear	Linear		
Visualizations * Datasets *	Linear	Linear	Linear	38.489	1.000
Attributes	Quadratic	Linear	Linear	34.346	1.000
	Cubic	Linear	Linear	31.852	1.000
	Order 4	Linear	Linear	32.023	1.000

Measure: MEASURE\_1

Source	Visualizations	Datasets	Attributes	Type III Sum of Squares	df
Error	Linear	Linear	Linear	92.857	17
(Visualizations*Datasets*Att ributes)	Quadratic	Linear	Linear	70.359	17
induces)	Cubic	Linear	Linear	29.206	17
	Order 4	Linear	Linear	4.846	17

### **Tests of Within-Subjects Contrasts**

Measure: MEASURE\_1

Source	Visualizations	Datasets	Attributes	Mean Square	F
Error	Linear	Linear	Linear	5.462	
(Visualizations*Datasets*Att ributes)	Quadratic	Linear	Linear	4.139	
	Cubic	Linear	Linear	1.718	
	Order 4	Linear	Linear	.285	

### **Tests of Within-Subjects Contrasts**

Measure: MEASURE\_1

Source	Visualizations	Datasets	Attributes	Sig.	Partial Eta Squared
Error	Linear	Linear	Linear		
(Visualizations*Datasets*Att ributes)	Quadratic	Linear	Linear		
noutes)	Cubic	Linear	Linear		
	Order 4	Linear	Linear		

### **Tests of Within-Subjects Contrasts**

Measure: MEASURE\_1

Source	Visualizations	Datasets	Attributes	Noncent. Parameter	Observed Power <sup>a</sup>
Error	Linear	Linear	Linear		
(Visualizations*Datasets*Att ributes)	Quadratic	Linear	Linear		
	Cubic	Linear	Linear		
	Order 4	Linear	Linear		

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	794.978	1	794.978	124.069	.000	.879
Error	108.929	17	6.408			

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

Measure: MEASURE\_1

Transformed Variable: Average

Source	Noncent. Parameter	Observed Power <sup>a</sup>
Intercept	124.069	1.000
Error		

a. Computed using alpha = .05

## **Estimated Marginal Means**

### 1. Visualizations

#### **Estimates**

			95% Confidence Interval		
Visualizations	Mean	Std. Error	Lower Bound	Upper Bound	
1	.851	.070	.704	.999	
2	.784	.053	.672	.896	
3	1.108	.086	.927	1.289	
4	.850	.057	.728	.971	
5	3.837	.485	2.814	4.861	

## **Pairwise Comparisons**

Measure. MEAS		Mean			95% Confidence <sup>b</sup>
(I) Visualizations	(J) Visualizations	Difference (I-J)	Std. Error	Sig. <sup>b</sup>	Lower Bound
1	2	.067	.042	1.000	067
	3	256 <sup>*</sup>	.046	.000	406
	4	.002	.036	1.000	114
	5	-2.986 <sup>*</sup>	.442	.000	-4.411
2	1	067	.042	1.000	201
	3	324*	.061	.001	522
	4	066	.027	.288	154
	5	-3.053 <sup>*</sup>	.459	.000	-4.533
3	1	.256*	.046	.000	.107
	2	.324*	.061	.001	.126
	4	.258*	.059	.004	.069
	5	-2.729 <sup>*</sup>	.450	.000	-4.181
4	1	002	.036	1.000	118
	2	.066	.027	.288	023
	3	258 <sup>*</sup>	.059	.004	447
	5	-2.988 <sup>*</sup>	.448	.000	-4.431
5	1	2.986*	.442	.000	1.560
	2	3.053*	.459	.000	1.573
	3	2.729*	.450	.000	1.278
	4	2.988*	.448	.000	1.544

## **Pairwise Comparisons**

Measure: MEASURE\_1

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

(I) Visualizations	(J) Visualizations	Upper Bound
1	2	.201
	3	107
	4	.118
	5	-1.560
2	1	.067
	3	126
	4	.023
	5	-1.573
3	1	.406
	2	.522
	4	.447
	5	-1.278
4	1	.114
	2	.154
	3	069
	5	-1.544
5	1	4.411
	2	4.533
	3	4.181
	4	4.431

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	.838	18.100 <sup>a</sup>	4.000	14.000	.000	.838
Wilks' lambda	.162	18.100 <sup>a</sup>	4.000	14.000	.000	.838
Hotelling's trace	5.171	18.100 <sup>a</sup>	4.000	14.000	.000	.838
Roy's largest root	5.171	18.100 <sup>a</sup>	4.000	14.000	.000	.838

#### **Multivariate Tests**

	Noncent. Parameter	Observed Power <sup>b</sup>
Pillai's trace	72.400	1.000
Wilks' lambda	72.400	1.000
Hotelling's trace	72.400	1.000
Roy's largest root	72.400	1.000

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

#### 2. Datasets

#### **Estimates**

				95% Confidence Interval		
	Datasets	Mean	Std. Error	Lower Bound	Upper Bound	
Ī	1	1.005	.063	.873	1.137	
	2	1.967	.220	1.503	2.431	

### **Pairwise Comparisons**

Measure: MEASURE\_1

					95% Confidence Interval for Difference <sup>b</sup>	
		Mean				
(I) Datasets	(J) Datasets	Difference (I-J)	Std. Error	Sig. <sup>b</sup>	Lower Bound	Upper Bound
1	2	961 <sup>*</sup>	.183	.000	-1.346	576
2	1	.961 <sup>*</sup>	.183	.000	.576	1.346

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	.620	27.707 <sup>a</sup>	1.000	17.000	.000	.620
Wilks' lambda	.380	27.707 <sup>a</sup>	1.000	17.000	.000	.620
Hotelling's trace	1.630	27.707 <sup>a</sup>	1.000	17.000	.000	.620
Roy's largest root	1.630	27.707 <sup>a</sup>	1.000	17.000	.000	.620

#### **Multivariate Tests**

	Noncent. Parameter	Observed Power <sup>b</sup>
Pillai's trace	27.707	.999
Wilks' lambda	27.707	.999
Hotelling's trace	27.707	.999
Roy's largest root	27.707	.999

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

#### 3. Attributes

#### **Estimates**

Measure: MEASURE\_1

			95% Confidence Interval		
Attributes	Mean	Std. Error	Lower Bound	Upper Bound	
1	.946	.059	.822	1.070	
2	2.026	.221	1.560	2.493	

#### **Pairwise Comparisons**

Measure: MEASURE\_1

					95% Confidence Interval for Difference <sup>b</sup>	
/I) Attributes	(I) Attributes	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	Lower Bound	Upper Bound
(I) Attributes	(J) Attributes	Dillefelice (I-3)	Stu. Elloi	Sig.	Lower Boaria	оррег война
1	2	-1.080 <sup>*</sup>	.183	.000	-1.466	694
2	1	1.080*	.183	.000	.694	1.466

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	.672	34.826 <sup>a</sup>	1.000	17.000	.000	.672
Wilks' lambda	.328	34.826 <sup>a</sup>	1.000	17.000	.000	.672
Hotelling's trace	2.049	34.826 <sup>a</sup>	1.000	17.000	.000	.672
Roy's largest root	2.049	34.826 <sup>a</sup>	1.000	17.000	.000	.672

#### **Multivariate Tests**

	Noncent. Parameter	Observed Power <sup>b</sup>
Pillai's trace	34.826	1.000
Wilks' lambda	34.826	1.000
Hotelling's trace	34.826	1.000
Roy's largest root	34.826	1.000

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

### 4. Visualizations \* Datasets

Measure: MEASURE\_1

				95% Confidence Interval	
Visualizations	Datasets	Mean	Std. Error	Lower Bound	Upper Bound
1	1	.843	.074	.688	.999
	2	.859	.076	.698	1.020
2	1	.850	.060	.724	.977
	2	.718	.055	.602	.834
3	1	1.144	.103	.926	1.363
	2	1.071	.076	.910	1.232
4	1	.943	.065	.806	1.080
	2	.756	.061	.628	.884
5	1	1.246	.056	1.127	1.365
	2	6.429	.940	4.445	8.412

### 5. Visualizations \* Attributes

Measure: MEASURE_I							
				95% Confide	ence Interval		
Visualizations	Attributes	Mean	Std. Error	Lower Bound	Upper Bound		
1	1	.822	.074	.666	.979		
	2	.880	.071	.731	1.029		
2	1	.788	.053	.675	.901		
	2	.780	.060	.653	.906		
3	1	1.117	.089	.929	1.304		
	2	1.099	.092	.904	1.293		
4	1	.874	.066	.734	1.013		
	2	.826	.065	.688	.963		
5	1	1.129	.055	1.012	1.245		
	2	6.546	.936	4.571	8.521		

### 6. Datasets \* Attributes

				95% Confidence Interval	
Datasets	Attributes	Mean	Std. Error	Lower Bound	Upper Bound
1	1	1.012	.066	.873	1.150
	2	.999	.070	.851	1.147
2	1	.880	.058	.759	1.002
	2	3.053	.395	2.219	3.887