

Your temporary usage period for IBM SPSS Statistics will expire in 10 days.

Your license will expire in 10 days.

GET

FILE='C:\Users\Bahador\Desktop\Analysis\Distribution\Distribution_Accuracy.sav'.

DATASET NAME DataSet1 WINDOW=FRONT.

GLM Bar_Num_Num_Car Bar_Num_Num_Movie Bar_Num_Num_Car Bar_Num_Num_Movie Bar_Ord_Num_Car

Bar_Ord_Num_Movie Line_Num_Num_Car Line_Num_Num_Movie Line_Num_Num_Car Line_Num_Num_Movie

Line_Ord_Num_Car Line_Ord_Num_Movie Pie_Num_Num_Car Pie_Num_Num_Movie Pie_Num_Num_Car

Pie_Num_Num_Movie Pie_Ord_Num_Car Pie_Ord_Num_Movie Scatter_Num_Num_Car Scatter_Num_Num_Movie

Scatter_Num_Num_Car Scatter_Num_Num_Movie Scatter_Ord_Num_Car Scatter_Ord_Num_Movie

Table_Num_Num_Car Table_Num_Num_Movie Table_Num_Num_Car Table_Num_Num_Movie Table_Ord_Num_Car

Table_Ord_Num_Movie

/WSFACTOR=Visualization 5 Polynomial DataAttributeTypes 3 Polynomial Datasets 2 Polynomial

/METHOD=SSTYPE(3)

/EMMEANS=TABLES(OVERALL)

/EMMEANS=TABLES(Visualization) COMPARE ADJ(BONFERRONI)

/EMMEANS=TABLES(DataAttributeTypes) COMPARE ADJ(BONFERRONI)

/EMMEANS=TABLES(Visualization*DataAttributeTypes)

/PRINT=DESCRIPTIVE ETASQ OPOWER HOMOGENEITY

/CRITERIA=ALPHA(.05)

/WSDESIGN=Visualization DataAttributeTypes Datasets Visualization*DataAttributeTypes

Visualization*Datasets DataAttributeTypes*Datasets Visualization*DataAttributeTypes*Datasets.

General Linear Model

Notes

Output Created		07-SEP-2016 09:56:44
Comments		
Input	Data	C: \Users\Bahador\Desktop\VA nalysis\Distribution\Distri bution_Accuracy.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
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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

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=Visualizatio
 n 5 Polynomial
 DataAttributeTypes 3
 Polynomial Datasets 2
 Polynomial
 /METHOD=SSTYPE(3)
 /EMMEANS=TABLES
 (OVERALL)
 /EMMEANS=TABLES
 (Visualization) COMPARE
 ADJ(BONFERRONI)
 /EMMEANS=TABLES
 (DataAttributeTypes)
 COMPARE ADJ
 (BONFERRONI)
 /EMMEANS=TABLES
 (Visualization*DataAttribut
 eTypes)
 /PRINT=DESCRIPTIVE
 ETASQ OPOWER
 HOMOGENEITY
 /CRITERIA=ALPHA(.05)

/WSDESIGN=Visualizatio
 n DataAttributeTypes
 Datasets
 Visualization*DataAttribute
 Types
 Visualization*Datasets
 DataAttributeTypes*Dat
 aTypes

Notes

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

[DataSet1] C:\Users\Bahador\Desktop\Analysis\Distribution\Distribution_Accuracy.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	DataAttributeTypes	Datasets	Dependent Variable
1	1	1	Bar_Nom_Nu m_Car
		2	Bar_Nom_Nu m_Movie
	2	1	Bar_Num_Nu m_Car
		2	Bar_Num_Nu m_Movie
	3	1	Bar_Ord_Nu m_Car
		2	Bar_Ord_Nu m_Movie
2	1	1	Line_Nom_Nu m_Car
		2	Line_Nom_Nu m_Movie
	2	1	Line_Num_Nu m_Car
		2	Line_Num_Nu m_Movie
	3	1	Line_Ord_Nu m_Car
		2	Line_Ord_Nu m_Movie

Within-Subjects Factors

Measure: MEASURE_1

Visualization	DataAttributeTypes	Datasets	Dependent Variable
3	1	1	Pie_Nom_Nu m_Car
		2	Pie_Nom_Nu m_Movie
	2	1	Pie_Num_Nu m_Car
		2	Pie_Num_Nu m_Movie
	3	1	Pie_Ord_Num _Car
		2	Pie_Ord_Num _Movie
4	1	1	Scatter_Nom_ Num_Car
		2	Scatter_Nom_ Num_Movie
	2	1	Scatter_Num_ Num_Car
		2	Scatter_Num_ Num_Movie
	3	1	Scatter_Ord_ Num_Car
		2	Scatter_Ord_ Num_Movie
5	1	1	Table_Nom_ Num_Car
		2	Table_Nom_ Num_Movie
	2	1	Table_Num_ Num_Car
		2	Table_Num_ Num_Movie
	3	1	Table_Ord_N um_Car
		2	Table_Ord_N um_Movie

Descriptive Statistics

	Mean	Std. Deviation	N
Bar_Nom_Num_Car	83.3333	38.34825	18
Bar_Nom_Num_Movie	72.2222	46.08886	18
Bar_Num_Num_Car	72.2222	46.08886	18
Bar_Num_Num_Movie	44.4444	51.13100	18
Bar_Ord_Num_Car	94.4444	23.57023	18
Bar_Ord_Num_Movie	100.0000	.00000	18
Line_Nom_Num_Car	88.8889	32.33808	18
Line_Nom_Num_Movie	77.7778	42.77926	18
Line_Num_Num_Car	55.5556	51.13100	18
Line_Num_Num_Movie	55.5556	51.13100	18
Line_Ord_Num_Car	72.2222	46.08886	18
Line_Ord_Num_Movie	72.2222	46.08886	18
Pie_Nom_Num_Car	83.3333	38.34825	18
Pie_Nom_Num_Movie	77.7778	42.77926	18
Pie_Num_Num_Car	55.5556	51.13100	18
Pie_Num_Num_Movie	61.1111	50.16313	18
Pie_Ord_Num_Car	61.1111	50.16313	18
Pie_Ord_Num_Movie	61.1111	50.16313	18
Scatter_Nom_Num_Car	66.6667	48.50713	18
Scatter_Nom_Num_Movie	66.6667	48.50713	18
Scatter_Num_Num_Car	72.2222	46.08886	18
Scatter_Num_Num_Movie	72.2222	46.08886	18
Scatter_Ord_Num_Car	77.7778	42.77926	18
Scatter_Ord_Num_Movie	94.4444	23.57023	18
Table_Nom_Num_Car	72.2222	46.08886	18
Table_Nom_Num_Movie	61.1111	50.16313	18
Table_Num_Num_Car	66.6667	48.50713	18
Table_Num_Num_Movie	50.0000	51.44958	18
Table_Ord_Num_Car	72.2222	46.08886	18
Table_Ord_Num_Movie	77.7778	42.77926	18

Multivariate Tests^a

Effect		Value	F	Hypothesis df	Error df
Visualization	Pillai's Trace	.291	1.439 ^b	4.000	14.000
	Wilks' Lambda	.709	1.439 ^b	4.000	14.000
	Hotelling's Trace	.411	1.439 ^b	4.000	14.000
	Roy's Largest Root	.411	1.439 ^b	4.000	14.000
DataAttributeTypes	Pillai's Trace	.485	7.533 ^b	2.000	16.000
	Wilks' Lambda	.515	7.533 ^b	2.000	16.000
	Hotelling's Trace	.942	7.533 ^b	2.000	16.000
	Roy's Largest Root	.942	7.533 ^b	2.000	16.000
Datasets	Pillai's Trace	.048	.864 ^b	1.000	17.000
	Wilks' Lambda	.952	.864 ^b	1.000	17.000
	Hotelling's Trace	.051	.864 ^b	1.000	17.000
	Roy's Largest Root	.051	.864 ^b	1.000	17.000
Visualization * DataAttributeTypes	Pillai's Trace	.669	2.529 ^b	8.000	10.000
	Wilks' Lambda	.331	2.529 ^b	8.000	10.000
	Hotelling's Trace	2.023	2.529 ^b	8.000	10.000
	Roy's Largest Root	2.023	2.529 ^b	8.000	10.000
Visualization * Datasets	Pillai's Trace	.142	.578 ^b	4.000	14.000
	Wilks' Lambda	.858	.578 ^b	4.000	14.000
	Hotelling's Trace	.165	.578 ^b	4.000	14.000
	Roy's Largest Root	.165	.578 ^b	4.000	14.000
DataAttributeTypes * Datasets	Pillai's Trace	.102	.904 ^b	2.000	16.000
	Wilks' Lambda	.898	.904 ^b	2.000	16.000
	Hotelling's Trace	.113	.904 ^b	2.000	16.000
	Roy's Largest Root	.113	.904 ^b	2.000	16.000
Visualization * DataAttributeTypes * Datasets	Pillai's Trace	.117	.166 ^b	8.000	10.000
	Wilks' Lambda	.883	.166 ^b	8.000	10.000
	Hotelling's Trace	.132	.166 ^b	8.000	10.000
	Roy's Largest Root	.132	.166 ^b	8.000	10.000

Multivariate Tests^a

Effect		Sig.	Partial Eta Squared	Noncent. Parameter
Visualization	Pillai's Trace	.273	.291	5.755
	Wilks' Lambda	.273	.291	5.755
	Hotelling's Trace	.273	.291	5.755
	Roy's Largest Root	.273	.291	5.755
DataAttributeTypes	Pillai's Trace	.005	.485	15.066
	Wilks' Lambda	.005	.485	15.066
	Hotelling's Trace	.005	.485	15.066
	Roy's Largest Root	.005	.485	15.066
Datasets	Pillai's Trace	.366	.048	.864
	Wilks' Lambda	.366	.048	.864
	Hotelling's Trace	.366	.048	.864
	Roy's Largest Root	.366	.048	.864
Visualization * DataAttributeTypes	Pillai's Trace	.085	.669	20.234
	Wilks' Lambda	.085	.669	20.234
	Hotelling's Trace	.085	.669	20.234
	Roy's Largest Root	.085	.669	20.234
Visualization * Datasets	Pillai's Trace	.684	.142	2.311
	Wilks' Lambda	.684	.142	2.311
	Hotelling's Trace	.684	.142	2.311
	Roy's Largest Root	.684	.142	2.311
DataAttributeTypes * Datasets	Pillai's Trace	.425	.102	1.808
	Wilks' Lambda	.425	.102	1.808
	Hotelling's Trace	.425	.102	1.808
	Roy's Largest Root	.425	.102	1.808
Visualization * DataAttributeTypes * Datasets	Pillai's Trace	.991	.117	1.325
	Wilks' Lambda	.991	.117	1.325
	Hotelling's Trace	.991	.117	1.325
	Roy's Largest Root	.991	.117	1.325

Multivariate Tests^a

Effect		Observed Power ^c
Visualization	Pillai's Trace	.334
	Wilks' Lambda	.334
	Hotelling's Trace	.334
	Roy's Largest Root	.334
DataAttributeTypes	Pillai's Trace	.894
	Wilks' Lambda	.894
	Hotelling's Trace	.894
	Roy's Largest Root	.894
Datasets	Pillai's Trace	.142
	Wilks' Lambda	.142
	Hotelling's Trace	.142
	Roy's Largest Root	.142
Visualization * DataAttributeTypes	Pillai's Trace	.614
	Wilks' Lambda	.614
	Hotelling's Trace	.614
	Roy's Largest Root	.614
Visualization * Datasets	Pillai's Trace	.150
	Wilks' Lambda	.150
	Hotelling's Trace	.150
	Roy's Largest Root	.150
DataAttributeTypes * Datasets	Pillai's Trace	.179
	Wilks' Lambda	.179
	Hotelling's Trace	.179
	Roy's Largest Root	.179
Visualization * DataAttributeTypes * Datasets	Pillai's Trace	.076
	Wilks' Lambda	.076
	Hotelling's Trace	.076
	Roy's Largest Root	.076

a. Design: Intercept
 Within Subjects Design: Visualization + DataAttributeTypes + Datasets + Visualization * DataAttributeTypes + Visualization * Datasets + DataAttributeTypes * Datasets + Visualization * ...

b. Exact statistic

c.

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	.409	13.784	9	.132	.721
DataAttributeTypes	.974	.427	2	.808	.974
Datasets	1.000	.000	0	.	1.000
Visualization * DataAttributeTypes	.062	39.366	35	.309	.618
Visualization * Datasets	.644	6.779	9	.662	.845
DataAttributeTypes * Datasets	.967	.538	2	.764	.968
Visualization * DataAttributeTypes * Datasets	.089	34.189	35	.537	.663

Mauchly's Test of Sphericity^a

Measure: MEASURE_1

Within Subjects Effect	Epsilon ^b	
	Huynh-Feldt	Lower-bound
Visualization	.884	.250
DataAttributeTypes	1.000	.500
Datasets	1.000	1.000
Visualization * DataAttributeTypes	.901	.125
Visualization * Datasets	1.000	.250
DataAttributeTypes * Datasets	1.000	.500
Visualization * DataAttributeTypes * Datasets	.998	.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 + DataAttributeTypes + Datasets + Visualization *

DataAttributeTypes + Visualization * Datasets + DataAttributeTypes * Datasets + Visualization * ...

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	10740.741	4	2685.185	1.281
	Greenhouse-Geisser	10740.741	2.884	3724.524	1.281
	Huynh-Feldt	10740.741	3.536	3037.949	1.281
	Lower-bound	10740.741	1.000	10740.741	1.281
Error(Visualization)	Sphericity Assumed	142592.593	68	2096.950	
	Greenhouse-Geisser	142592.593	49.024	2908.604	
	Huynh-Feldt	142592.593	60.104	2372.435	
	Lower-bound	142592.593	17.000	8387.800	
DataAttributeTypes	Sphericity Assumed	32148.148	2	16074.074	8.932
	Greenhouse-Geisser	32148.148	1.949	16497.391	8.932
	Huynh-Feldt	32148.148	2.000	16074.074	8.932
	Lower-bound	32148.148	1.000	32148.148	8.932
Error(DataAttributeTypes)	Sphericity Assumed	61185.185	34	1799.564	
	Greenhouse-Geisser	61185.185	33.128	1846.956	
	Huynh-Feldt	61185.185	34.000	1799.564	
	Lower-bound	61185.185	17.000	3599.129	
Datasets	Sphericity Assumed	1500.000	1	1500.000	.864
	Greenhouse-Geisser	1500.000	1.000	1500.000	.864
	Huynh-Feldt	1500.000	1.000	1500.000	.864
	Lower-bound	1500.000	1.000	1500.000	.864
Error(Datasets)	Sphericity Assumed	29500.000	17	1735.294	
	Greenhouse-Geisser	29500.000	17.000	1735.294	
	Huynh-Feldt	29500.000	17.000	1735.294	
	Lower-bound	29500.000	17.000	1735.294	
Visualization * DataAttributeTypes	Sphericity Assumed	31925.926	8	3990.741	2.131
	Greenhouse-Geisser	31925.926	4.940	6462.701	2.131

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Sig.	Partial Eta Squared	Noncent. Parameter
Visualization	Sphericity Assumed	.286	.070	5.122
	Greenhouse-Geisser	.291	.070	3.693
	Huynh-Feldt	.289	.070	4.527
	Lower-bound	.274	.070	1.281
Error(Visualization)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
DataAttributeTypes	Sphericity Assumed	.001	.344	17.864
	Greenhouse-Geisser	.001	.344	17.406
	Huynh-Feldt	.001	.344	17.864
	Lower-bound	.008	.344	8.932
Error(DataAttributeTypes)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Datasets	Sphericity Assumed	.366	.048	.864
	Greenhouse-Geisser	.366	.048	.864
	Huynh-Feldt	.366	.048	.864
	Lower-bound	.366	.048	.864
Error(Datasets)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualization * DataAttributeTypes	Sphericity Assumed	.037	.111	17.044
	Greenhouse-Geisser	.070	.111	10.525

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Observed Power ^a
Visualization	Sphericity Assumed	.380
	Greenhouse-Geisser	.315
	Huynh-Feldt	.353
	Lower-bound	.188
Error(Visualization)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
DataAttributeTypes	Sphericity Assumed	.960
	Greenhouse-Geisser	.957
	Huynh-Feldt	.960
	Lower-bound	.804
Error(DataAttributeTypes)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Datasets	Sphericity Assumed	.142
	Greenhouse-Geisser	.142
	Huynh-Feldt	.142
	Lower-bound	.142
Error(Datasets)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualization * DataAttributeTypes	Sphericity Assumed	.833
	Greenhouse-Geisser	.673

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F
	Huynh-Feldt	31925.926	7.207	4429.631	2.131
	Lower-bound	31925.926	1.000	31925.926	2.131
Error (Visualization*DataAttribute Types)	Sphericity Assumed	254740.741	136	1873.094	
	Greenhouse-Geisser	254740.741	83.980	3033.333	
	Huynh-Feldt	254740.741	122.525	2079.091	
	Lower-bound	254740.741	17.000	14984.749	
Visualization * Datasets	Sphericity Assumed	4518.519	4	1129.630	.578
	Greenhouse-Geisser	4518.519	3.380	1337.009	.578
	Huynh-Feldt	4518.519	4.000	1129.630	.578
	Lower-bound	4518.519	1.000	4518.519	.578
Error (Visualization*Datasets)	Sphericity Assumed	132814.815	68	1953.159	
	Greenhouse-Geisser	132814.815	57.453	2311.723	
	Huynh-Feldt	132814.815	68.000	1953.159	
	Lower-bound	132814.815	17.000	7812.636	
DataAttributeTypes * Datasets	Sphericity Assumed	5333.333	2	2666.667	1.097
	Greenhouse-Geisser	5333.333	1.936	2754.769	1.097
	Huynh-Feldt	5333.333	2.000	2666.667	1.097
	Lower-bound	5333.333	1.000	5333.333	1.097
Error (DataAttributeTypes*Datase ts)	Sphericity Assumed	82666.667	34	2431.373	
	Greenhouse-Geisser	82666.667	32.913	2511.701	
	Huynh-Feldt	82666.667	34.000	2431.373	
	Lower-bound	82666.667	17.000	4862.745	
Visualization * DataAttributeTypes * Datasets	Sphericity Assumed	5037.037	8	629.630	.313
	Greenhouse-Geisser	5037.037	5.301	950.139	.313
	Huynh-Feldt	5037.037	7.986	630.738	.313
	Lower-bound	5037.037	1.000	5037.037	.313
Error (Visualization*DataAttribute Types*Datasets)	Sphericity Assumed	273629.630	136	2011.983	
	Greenhouse-Geisser	273629.630	90.123	3036.172	
	Huynh-Feldt	273629.630	135.761	2015.524	
	Lower-bound	273629.630	17.000	16095.861	

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Sig.	Partial Eta Squared	Noncent. Parameter
	Huynh-Feldt	.044	.111	15.356
	Lower-bound	.163	.111	2.131
Error (Visualization*DataAttribute Types)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualization * Datasets	Sphericity Assumed	.679	.033	2.313
	Greenhouse-Geisser	.651	.033	1.955
	Huynh-Feldt	.679	.033	2.313
	Lower-bound	.457	.033	.578
Error (Visualization*Datasets)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
DataAttributeTypes * Datasets	Sphericity Assumed	.345	.061	2.194
	Greenhouse-Geisser	.344	.061	2.123
	Huynh-Feldt	.345	.061	2.194
	Lower-bound	.310	.061	1.097
Error (DataAttributeTypes*Datase ts)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			
Visualization * DataAttributeTypes * Datasets	Sphericity Assumed	.960	.018	2.504
	Greenhouse-Geisser	.912	.018	1.659
	Huynh-Feldt	.960	.018	2.499
	Lower-bound	.583	.018	.313
Error (Visualization*DataAttribute Types*Datasets)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Observed Power ^a
	Huynh-Feldt	.800
	Lower-bound	.281
Error (Visualization*DataAttribute Types)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualization * Datasets	Sphericity Assumed	.183
	Greenhouse-Geisser	.170
	Huynh-Feldt	.183
	Lower-bound	.111
Error (Visualization*Datasets)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
DataAttributeTypes * Datasets	Sphericity Assumed	.226
	Greenhouse-Geisser	.223
	Huynh-Feldt	.226
	Lower-bound	.167
Error (DataAttributeTypes*Datase ts)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	
Visualization * DataAttributeTypes * Datasets	Sphericity Assumed	.149
	Greenhouse-Geisser	.127
	Huynh-Feldt	.149
	Lower-bound	.083
Error (Visualization*DataAttribute Types*Datasets)	Sphericity Assumed	
	Greenhouse-Geisser	
	Huynh-Feldt	
	Lower-bound	

a. Computed using alpha = .05

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Type III Sum of Squares	df
Visualization	Linear			3342.593	1
	Quadratic			800.265	1
	Cubic			4481.481	1
	Order 4			2116.402	1
Error(Visualization)	Linear			28490.741	17
	Quadratic			60033.069	17
	Cubic			41185.185	17
	Order 4			12883.598	17
DataAttributeTypes		Linear		1000.000	1
		Quadratic		31148.148	1
Error(DataAttributeTypes)		Linear		28000.000	17
		Quadratic		33185.185	17
Datasets			Linear	1500.000	1
Error(Datasets)			Linear	29500.000	17
Visualization * DataAttributeTypes	Linear	Linear		125.000	1
		Quadratic		6337.963	1
	Quadratic	Linear		9533.730	1
		Quadratic		1749.339	1
	Cubic	Linear		9388.889	1
		Quadratic		907.407	1
	Order 4	Linear		3841.270	1
		Quadratic		42.328	1
Error (Visualization*DataAttribute Types)	Linear	Linear		26125.000	17
		Quadratic		43078.704	17
	Quadratic	Linear		21359.127	17
		Quadratic		57595.899	17
	Cubic	Linear		20611.111	17
		Quadratic		38425.926	17
	Order 4	Linear		30015.873	17
		Quadratic		17529.101	17
Visualization * Datasets	Linear		Linear	750.000	1
	Quadratic		Linear	2916.667	1
	Cubic		Linear	592.593	1
	Order 4		Linear	259.259	1

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Mean Square	F
Visualization	Linear			3342.593	1.994
	Quadratic			800.265	.227
	Cubic			4481.481	1.850
	Order 4			2116.402	2.793
Error(Visualization)	Linear			1675.926	
	Quadratic			3531.357	
	Cubic			2422.658	
	Order 4			757.859	
DataAttributeTypes		Linear		1000.000	.607
		Quadratic		31148.148	15.956
Error(DataAttributeTypes)		Linear		1647.059	
		Quadratic		1952.070	
Datasets			Linear	1500.000	.864
Error(Datasets)			Linear	1735.294	
Visualization * DataAttributeTypes	Linear	Linear		125.000	.081
		Quadratic		6337.963	2.501
	Quadratic	Linear		9533.730	7.588
		Quadratic		1749.339	.516
	Cubic	Linear		9388.889	7.744
		Quadratic		907.407	.401
	Order 4	Linear		3841.270	2.176
		Quadratic		42.328	.041
Error (Visualization*DataAttribute Types)	Linear	Linear		1536.765	
		Quadratic		2534.041	
	Quadratic	Linear		1256.419	
		Quadratic		3387.994	
	Cubic	Linear		1212.418	
		Quadratic		2260.349	
	Order 4	Linear		1765.640	
		Quadratic		1031.124	
Visualization * Datasets	Linear		Linear	750.000	.393
	Quadratic		Linear	2916.667	1.414
	Cubic		Linear	592.593	.331
	Order 4		Linear	259.259	.126

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Sig.	Partial Eta Squared
Visualization	Linear			.176	.105
	Quadratic			.640	.013
	Cubic			.192	.098
	Order 4			.113	.141
Error(Visualization)	Linear				
	Quadratic				
	Cubic				
	Order 4				
DataAttributeTypes		Linear		.447	.034
		Quadratic		.001	.484
Error(DataAttributeTypes)		Linear			
		Quadratic			
Datasets			Linear	.366	.048
Error(Datasets)			Linear		
Visualization * DataAttributeTypes	Linear	Linear		.779	.005
		Quadratic		.132	.128
	Quadratic	Linear		.014	.309
		Quadratic		.482	.029
	Cubic	Linear		.013	.313
		Quadratic		.535	.023
	Order 4	Linear		.158	.113
		Quadratic		.842	.002
Error (Visualization*DataAttribute Types)	Linear	Linear			
		Quadratic			
	Quadratic	Linear			
		Quadratic			
	Cubic	Linear			
		Quadratic			
	Order 4	Linear			
		Quadratic			
Visualization * Datasets	Linear		Linear	.539	.023
	Quadratic		Linear	.251	.077
	Cubic		Linear	.572	.019
	Order 4		Linear	.727	.007

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Noncent. Parameter
Visualization	Linear			1.994
	Quadratic			.227
	Cubic			1.850
	Order 4			2.793
Error(Visualization)	Linear			
	Quadratic			
	Cubic			
	Order 4			
DataAttributeTypes		Linear		.607
		Quadratic		15.956
Error(DataAttributeTypes)		Linear		
		Quadratic		
Datasets			Linear	.864
Error(Datasets)			Linear	
Visualization * DataAttributeTypes	Linear	Linear		.081
		Quadratic		2.501
	Quadratic	Linear		7.588
		Quadratic		.516
	Cubic	Linear		7.744
		Quadratic		.401
	Order 4	Linear		2.176
		Quadratic		.041
Error (Visualization*DataAttribute Types)	Linear	Linear		
		Quadratic		
	Quadratic	Linear		
		Quadratic		
	Cubic	Linear		
		Quadratic		
	Order 4	Linear		
		Quadratic		
Visualization * Datasets	Linear		Linear	.393
	Quadratic		Linear	1.414
	Cubic		Linear	.331
	Order 4		Linear	.126

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Observed Power ^a
Visualization	Linear			.266
	Quadratic			.073
	Cubic			.250
	Order 4			.351
Error(Visualization)	Linear			
	Quadratic			
	Cubic			
	Order 4			
DataAttributeTypes		Linear		.114
		Quadratic		.964
Error(DataAttributeTypes)		Linear		
		Quadratic		
Datasets			Linear	.142
Error(Datasets)			Linear	
Visualization * DataAttributeTypes	Linear	Linear		.058
		Quadratic		.320
	Quadratic	Linear		.738
		Quadratic		.104
	Cubic	Linear		.746
		Quadratic		.092
	Order 4	Linear		.286
		Quadratic		.054
Error (Visualization*DataAttribute Types)	Linear	Linear		
		Quadratic		
	Quadratic	Linear		
		Quadratic		
	Cubic	Linear		
		Quadratic		
	Order 4	Linear		
		Quadratic		
Visualization * Datasets	Linear		Linear	.091
	Quadratic		Linear	.202
	Cubic		Linear	.084
	Order 4		Linear	.063

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Type III Sum of Squares	df
Error (Visualization*Datasets)	Linear		Linear	32416.667	17
	Quadratic		Linear	35059.524	17
	Cubic		Linear	30407.407	17
	Order 4		Linear	34931.217	17
DataAttributeTypes * Datasets		Linear	Linear	4000.000	1
		Quadratic	Linear	1333.333	1
Error (DataAttributeTypes*Datase ts)		Linear	Linear	41000.000	17
		Quadratic	Linear	41666.667	17
Visualization * DataAttributeTypes * Datasets	Linear	Linear	Linear	13.889	1
		Quadratic	Linear	41.667	1
	Quadratic	Linear	Linear	248.016	1
		Quadratic	Linear	3601.190	1
	Cubic	Linear	Linear	55.556	1
		Quadratic	Linear	907.407	1
	Order 4	Linear	Linear	126.984	1
		Quadratic	Linear	42.328	1
Error (Visualization*DataAttribute Types*Datasets)	Linear	Linear	Linear	20236.111	17
		Quadratic	Linear	44041.667	17
	Quadratic	Linear	Linear	30644.841	17
		Quadratic	Linear	37172.619	17
	Cubic	Linear	Linear	20944.444	17
		Quadratic	Linear	32092.593	17
	Order 4	Linear	Linear	42730.159	17
		Quadratic	Linear	45767.196	17

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Mean Square	F
Error (Visualization*Datasets)	Linear		Linear	1906.863	
	Quadratic		Linear	2062.325	
	Cubic		Linear	1788.671	
	Order 4		Linear	2054.777	
DataAttributeTypes * Datasets		Linear	Linear	4000.000	1.659
		Quadratic	Linear	1333.333	.544
Error (DataAttributeTypes*Datase ts)		Linear	Linear	2411.765	
		Quadratic	Linear	2450.980	
Visualization * DataAttributeTypes * Datasets	Linear	Linear	Linear	13.889	.012
		Quadratic	Linear	41.667	.016
	Quadratic	Linear	Linear	248.016	.138
		Quadratic	Linear	3601.190	1.647
	Cubic	Linear	Linear	55.556	.045
		Quadratic	Linear	907.407	.481
	Order 4	Linear	Linear	126.984	.051
		Quadratic	Linear	42.328	.016
Error (Visualization*DataAttribute Types*Datasets)	Linear	Linear	Linear	1190.359	
		Quadratic	Linear	2590.686	
	Quadratic	Linear	Linear	1802.638	
		Quadratic	Linear	2186.625	
	Cubic	Linear	Linear	1232.026	
		Quadratic	Linear	1887.800	
	Order 4	Linear	Linear	2513.539	
		Quadratic	Linear	2692.188	

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Sig.	Partial Eta Squared
Error (Visualization*Datasets)	Linear		Linear		
	Quadratic		Linear		
	Cubic		Linear		
	Order 4		Linear		
DataAttributeTypes * Datasets		Linear	Linear	.215	.089
		Quadratic	Linear	.471	.031
Error (DataAttributeTypes*Dataset s)		Linear	Linear		
		Quadratic	Linear		
Visualization * DataAttributeTypes * Datasets	Linear	Linear	Linear	.915	.001
		Quadratic	Linear	.901	.001
	Quadratic	Linear	Linear	.715	.008
		Quadratic	Linear	.217	.088
	Cubic	Linear	Linear	.834	.003
		Quadratic	Linear	.497	.027
	Order 4	Linear	Linear	.825	.003
		Quadratic	Linear	.902	.001
Error (Visualization*DataAttribute Types*Datasets)	Linear	Linear	Linear		
		Quadratic	Linear		
	Quadratic	Linear	Linear		
		Quadratic	Linear		
	Cubic	Linear	Linear		
		Quadratic	Linear		
	Order 4	Linear	Linear		
		Quadratic	Linear		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Noncent. Parameter
Error (Visualization*Datasets)	Linear		Linear	
	Quadratic		Linear	
	Cubic		Linear	
	Order 4		Linear	
DataAttributeTypes * Datasets		Linear	Linear	1.659
		Quadratic	Linear	.544
Error (DataAttributeTypes*Dataset s)		Linear	Linear	
		Quadratic	Linear	
Visualization * DataAttributeTypes * Datasets	Linear	Linear	Linear	.012
		Quadratic	Linear	.016
	Quadratic	Linear	Linear	.138
		Quadratic	Linear	1.647
	Cubic	Linear	Linear	.045
		Quadratic	Linear	.481
	Order 4	Linear	Linear	.051
		Quadratic	Linear	.016
Error (Visualization*DataAttribute Types*Datasets)	Linear	Linear	Linear	
		Quadratic	Linear	
	Quadratic	Linear	Linear	
		Quadratic	Linear	
	Cubic	Linear	Linear	
		Quadratic	Linear	
	Order 4	Linear	Linear	
		Quadratic	Linear	

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	Visualization	DataAttributeTypes	Datasets	Observed Power ^a
Error (Visualization*Datasets)	Linear		Linear	
	Quadratic		Linear	
	Cubic		Linear	
	Order 4		Linear	
DataAttributeTypes * Datasets		Linear	Linear	.229
		Quadratic	Linear	.107
Error (DataAttributeTypes*Dataset s)		Linear	Linear	
		Quadratic	Linear	
Visualization * DataAttributeTypes * Datasets	Linear	Linear	Linear	.051
		Quadratic	Linear	.052
	Quadratic	Linear	Linear	.064
		Quadratic	Linear	.228
	Cubic	Linear	Linear	.055
		Quadratic	Linear	.100
	Order 4	Linear	Linear	.055
		Quadratic	Linear	.052
Error (Visualization*DataAttribute Types*Datasets)	Linear	Linear	Linear	
		Quadratic	Linear	
	Quadratic	Linear	Linear	
		Quadratic	Linear	
	Cubic	Linear	Linear	
		Quadratic	Linear	
	Order 4	Linear	Linear	
		Quadratic	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	2744907.407	1	2744907.407	1269.433	.000	.987
Error	36759.259	17	2162.309			

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Noncent. Parameter	Observed Power ^a
Intercept	1269.433	1.000
Error		

a. Computed using alpha = .05

Estimated Marginal Means

1. Grand Mean

Measure: MEASURE_1

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
71.296	2.001	67.074	75.518

2. Visualization

Estimates

Measure: MEASURE_1

Visualization	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	77.778	3.565	70.256	85.299
2	70.370	3.941	62.055	78.686
3	66.667	5.042	56.030	77.303
4	75.000	4.314	65.899	84.101
5	66.667	5.042	56.030	77.303

Pairwise Comparisons

Measure: MEASURE_1

(I) Visualization	(J) Visualization	Mean Difference (I-J)	Std. Error	Sig. ^a	95% Confidence a...
					Lower Bound
1	2	7.407	5.592	1.000	-10.612
	3	11.111	6.601	1.000	-10.160
	4	2.778	6.211	1.000	-17.238
	5	11.111	6.462	1.000	-9.712
2	1	-7.407	5.592	1.000	-25.427
	3	3.704	4.580	1.000	-11.056
	4	-4.630	5.843	1.000	-23.459
	5	3.704	5.482	1.000	-13.963
3	1	-11.111	6.601	1.000	-32.382
	2	-3.704	4.580	1.000	-18.464
	4	-8.333	4.905	1.000	-24.138
	5	.000	7.971	1.000	-25.688
4	1	-2.778	6.211	1.000	-22.793
	2	4.630	5.843	1.000	-14.200
	3	8.333	4.905	1.000	-7.472
	5	8.333	7.770	1.000	-16.704
5	1	-11.111	6.462	1.000	-31.935
	2	-3.704	5.482	1.000	-21.371
	3	.000	7.971	1.000	-25.688
	4	-8.333	7.770	1.000	-33.370

Pairwise Comparisons

Measure: MEASURE_1

		95% Confidence Interval for ^a ...
(I) Visualization	(J) Visualization	Upper Bound
1	2	25.427
	3	32.382
	4	22.793
	5	31.935
2	1	10.612
	3	18.464
	4	14.200
	5	21.371
3	1	10.160
	2	11.056
	4	7.472
	5	25.688
4	1	17.238
	2	23.459
	3	24.138
	5	33.370
5	1	9.712
	2	13.963
	3	25.688
	4	16.704

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	.291	1.439 ^a	4.000	14.000	.273	.291
Wilks' lambda	.709	1.439 ^a	4.000	14.000	.273	.291
Hotelling's trace	.411	1.439 ^a	4.000	14.000	.273	.291
Roy's largest root	.411	1.439 ^a	4.000	14.000	.273	.291

Multivariate Tests

	Noncent. Parameter	Observed Power ^b
Pillai's trace	5.755	.334
Wilks' lambda	5.755	.334
Hotelling's trace	5.755	.334
Roy's largest root	5.755	.334

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. DataAttributeTypes

Estimates

Measure: MEASURE_1

DataAttributeTypes	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	75.000	2.830	69.030	80.970
2	60.556	3.379	53.426	67.685
3	78.333	3.547	70.850	85.817

Pairwise Comparisons

Measure: MEASURE_1

(I) DataAttributeTypes	(J) DataAttributeTypes	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence ^b ...
					Lower Bound
1	2	14.444 [*]	4.295	.011	3.042
	3	-3.333	4.278	1.000	-14.691
2	1	-14.444 [*]	4.295	.011	-25.847
	3	-17.778 [*]	4.821	.005	-30.577
3	1	3.333	4.278	1.000	-8.025
	2	17.778 [*]	4.821	.005	4.979

Pairwise Comparisons

Measure: MEASURE_1

(I) DataAttributeTypes	(J) DataAttributeTypes	95% Confidence Interval for ^b ...
		Upper Bound
1	2	25.847
	3	8.025
2	1	-3.042
	3	-4.979
3	1	14.691
	2	30.577

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	.485	7.533 ^a	2.000	16.000	.005	.485
Wilks' lambda	.515	7.533 ^a	2.000	16.000	.005	.485
Hotelling's trace	.942	7.533 ^a	2.000	16.000	.005	.485
Roy's largest root	.942	7.533 ^a	2.000	16.000	.005	.485

Multivariate Tests

	Noncent. Parameter	Observed Power ^b
Pillai's trace	15.066	.894
Wilks' lambda	15.066	.894
Hotelling's trace	15.066	.894
Roy's largest root	15.066	.894

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

a. Exact statistic

b. Computed using alpha = .05

4. Visualization * DataAttributeTypes

Measure: MEASURE_1

Visualization	DataAttributeTypes	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
1	1	77.778	6.026	65.064	90.491
	2	58.333	8.333	40.752	75.915
	3	97.222	2.778	91.362	103.083
2	1	83.333	7.001	68.562	98.105
	2	55.556	8.938	36.699	74.413
	3	72.222	6.026	59.509	84.936
3	1	80.556	5.912	68.083	93.028
	2	58.333	7.287	42.958	73.708
	3	61.111	8.628	42.908	79.314
4	1	66.667	7.001	51.895	81.438
	2	72.222	7.256	56.913	87.531
	3	86.111	6.771	71.826	100.396
5	1	66.667	9.039	47.597	85.737
	2	58.333	9.262	38.792	77.874
	3	75.000	7.287	59.625	90.375

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