```
 Your temporary usage period for IBM SPSS Statistics will expire in 11 days.

Your  license will expire in 11 days.
GET
  FILE='C:\Users\Bahador\Desktop\Analysis\Correlation\Correlation_Accuracy.sav
'.
DATASET NAME DataSet1 WINDOW=FRONT.
GLM Bar_Num_Num_Car Bar_Num_Num_Movie Bar_Ord_Num_Car Bar_Ord_Num_Movie Line_N
um_Num_Car
    Line_Num_Num_Movie Line_Ord_Num_Car Line_Ord_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_Movi
e 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=Visualization 5 Polynomial DataAttributeType 2 Polynomial Dataset
2 Polynomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(OVERALL)
  /EMMEANS=TABLES(Visualization) COMPARE ADJ(BONFERRONI)
  /EMMEANS=TABLES(DataAttributeType) COMPARE ADJ(BONFERRONI)
  /EMMEANS=TABLES(Visualization*DataAttributeType)
  /PRINT=DESCRIPTIVE ETASQ OPOWER HOMOGENEITY
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=Visualization DataAttributeType Dataset Visualization*DataAttribut
eType
    Visualization*Dataset DataAttributeType*Dataset Visualization*DataAttribut
eType*Dataset.
```

## General Linear Model

## Notes

| | | |
|---|---|---|
| Output Created | | 06-SEP-2016 12:25:13 |
| Comments | | |
| Input | Data | C:\Users\Bahador\Desktop\Analysis\Correlation\Correlation_Accuracy.sav |
| | Active Dataset | DataSet1 |
| | Filter | <none> |
| | Weight | <none> |
| | Split File | <none> |
| | N of Rows in Working Data File | 18 |
| Missing Value Handling | Definition of Missing | User-defined missing values are treated as missing. |
| | Cases Used | Statistics are based on all cases with valid data for all variables in the model. |

## Notes

| | |
|---|---|
| Syntax | GLM Bar_Num_Num_Car Bar_Num_Num_Movie Bar_Ord_Num_Car Bar_Ord_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_Ord_Num_Car Pie_Ord_Num_Movie Scatter_Num_Num_Car Scatter_Num_Num_Movie Scatter_Ord_Num_Car<br><br>Scatter_Ord_Num_Movie Table_Num_Num_Car Table_Num_Num_Movie Table_Ord_Num_Car Table_Ord_Num_Movie<br><br>/WSFACTOR=Visualization 5 Polynomial DataAttributeType 2 Polynomial Dataset 2 Polynomial<br>/METHOD=SSTYPE(3)<br>/EMMEANS=TABLES (OVERALL)<br>/EMMEANS=TABLES (Visualization) COMPARE ADJ(BONFERRONI)<br>/EMMEANS=TABLES (DataAttributeType) COMPARE ADJ (BONFERRONI)<br>/EMMEANS=TABLES (Visualization*DataAttributeType)<br>/PRINT=DESCRIPTIVE ETASQ OPOWER HOMOGENEITY<br>/CRITERIA=ALPHA(.05)<br><br>/WSDESIGN=Visualization DataAttributeType Dataset Visualization*DataAttributeType Visualization*Dataset DataAttributeType*Dataset Visualization*DataAttributeType*Dataset. |

## Notes

| | | |
|---|---|---|
| Resources | Processor Time | 00:00:00.02 |
| | Elapsed Time | 00:00:00.02 |

[DataSet1] C:\Users\Bahador\Desktop\Analysis\Correlation\Correlation_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 | DataAttributeType | Dataset | Dependent Variable |
|---|---|---|---|
| 1 | 1 | 1 | Bar_Num_Num_Car |
| | | 2 | Bar_Num_Num_Movie |
| | 2 | 1 | Bar_Ord_Num_Car |
| | | 2 | Bar_Ord_Num_Movie |
| 2 | 1 | 1 | Line_Num_Num_Car |
| | | 2 | Line_Num_Num_Movie |
| | 2 | 1 | Line_Ord_Num_Car |
| | | 2 | Line_Ord_Num_Movie |
| 3 | 1 | 1 | Pie_Num_Num_Car |
| | | 2 | Pie_Num_Num_Movie |
| | 2 | 1 | Pie_Ord_Num_Car |
| | | 2 | Pie_Ord_Num_Movie |

## Within-Subjects Factors

Measure: MEASURE_1

| Visualization | DataAttributeType | Dataset | Dependent Variable |
|---|---|---|---|
| 4 | 1 | 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_Num_Car |
| | | 2 | Table_Ord_Num_Movie |

## Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Bar_Num_Num_Car | 72.2222 | 46.08886 | 18 |
| Bar_Num_Num_Movie | 66.6667 | 48.50713 | 18 |
| Bar_Ord_Num_Car | 83.3333 | 38.34825 | 18 |
| Bar_Ord_Num_Movie | 100.0000 | .00000 | 18 |
| Line_Num_Num_Car | 88.8889 | 32.33808 | 18 |
| Line_Num_Num_Movie | 88.8889 | 32.33808 | 18 |
| Line_Ord_Num_Car | 94.4444 | 23.57023 | 18 |
| Line_Ord_Num_Movie | 83.3333 | 38.34825 | 18 |
| Pie_Num_Num_Car | 61.1111 | 50.16313 | 18 |
| Pie_Num_Num_Movie | 61.1111 | 50.16313 | 18 |
| Pie_Ord_Num_Car | 77.7778 | 42.77926 | 18 |
| Pie_Ord_Num_Movie | 66.6667 | 48.50713 | 18 |
| Scatter_Num_Num_Car | 77.7778 | 42.77926 | 18 |
| Scatter_Num_Num_Movie | 83.3333 | 38.34825 | 18 |
| Scatter_Ord_Num_Car | 94.4444 | 23.57023 | 18 |

## Descriptive Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Scatter_Ord_Num_Movie | 88.8889 | 32.33808 | 18 |
| Table_Num_Num_Car | 27.7778 | 46.08886 | 18 |
| Table_Num_Num_Movie | 33.3333 | 48.50713 | 18 |
| Table_Ord_Num_Car | 88.8889 | 32.33808 | 18 |
| Table_Ord_Num_Movie | 61.1111 | 50.16313 | 18 |

## Multivariate Tests[a]

| Effect | | Value | F | Hypothesis df | Error df |
|---|---|---|---|---|---|
| Visualization | Pillai's Trace | .678 | 7.380[b] | 4.000 | 14.000 |
| | Wilks' Lambda | .322 | 7.380[b] | 4.000 | 14.000 |
| | Hotelling's Trace | 2.108 | 7.380[b] | 4.000 | 14.000 |
| | Roy's Largest Root | 2.108 | 7.380[b] | 4.000 | 14.000 |
| DataAttributeType | Pillai's Trace | .508 | 17.548[b] | 1.000 | 17.000 |
| | Wilks' Lambda | .492 | 17.548[b] | 1.000 | 17.000 |
| | Hotelling's Trace | 1.032 | 17.548[b] | 1.000 | 17.000 |
| | Roy's Largest Root | 1.032 | 17.548[b] | 1.000 | 17.000 |
| Dataset | Pillai's Trace | .033 | .586[b] | 1.000 | 17.000 |
| | Wilks' Lambda | .967 | .586[b] | 1.000 | 17.000 |
| | Hotelling's Trace | .034 | .586[b] | 1.000 | 17.000 |
| | Roy's Largest Root | .034 | .586[b] | 1.000 | 17.000 |
| Visualization * DataAttributeType | Pillai's Trace | .534 | 4.011[b] | 4.000 | 14.000 |
| | Wilks' Lambda | .466 | 4.011[b] | 4.000 | 14.000 |
| | Hotelling's Trace | 1.146 | 4.011[b] | 4.000 | 14.000 |
| | Roy's Largest Root | 1.146 | 4.011[b] | 4.000 | 14.000 |
| Visualization * Dataset | Pillai's Trace | .060 | .223[b] | 4.000 | 14.000 |
| | Wilks' Lambda | .940 | .223[b] | 4.000 | 14.000 |
| | Hotelling's Trace | .064 | .223[b] | 4.000 | 14.000 |
| | Roy's Largest Root | .064 | .223[b] | 4.000 | 14.000 |
| DataAttributeType * Dataset | Pillai's Trace | .099 | 1.863[b] | 1.000 | 17.000 |
| | Wilks' Lambda | .901 | 1.863[b] | 1.000 | 17.000 |
| | Hotelling's Trace | .110 | 1.863[b] | 1.000 | 17.000 |
| | Roy's Largest Root | .110 | 1.863[b] | 1.000 | 17.000 |

## Multivariate Tests[a]

| Effect | | Sig. | Partial Eta Squared | Noncent. Parameter |
|---|---|---|---|---|
| Visualization | Pillai's Trace | .002 | .678 | 29.519 |
| | Wilks' Lambda | .002 | .678 | 29.519 |
| | Hotelling's Trace | .002 | .678 | 29.519 |
| | Roy's Largest Root | .002 | .678 | 29.519 |
| DataAttributeType | Pillai's Trace | .001 | .508 | 17.548 |
| | Wilks' Lambda | .001 | .508 | 17.548 |
| | Hotelling's Trace | .001 | .508 | 17.548 |
| | Roy's Largest Root | .001 | .508 | 17.548 |
| Dataset | Pillai's Trace | .454 | .033 | .586 |
| | Wilks' Lambda | .454 | .033 | .586 |
| | Hotelling's Trace | .454 | .033 | .586 |
| | Roy's Largest Root | .454 | .033 | .586 |
| Visualization * DataAttributeType | Pillai's Trace | .023 | .534 | 16.044 |
| | Wilks' Lambda | .023 | .534 | 16.044 |
| | Hotelling's Trace | .023 | .534 | 16.044 |
| | Roy's Largest Root | .023 | .534 | 16.044 |
| Visualization * Dataset | Pillai's Trace | .921 | .060 | .891 |
| | Wilks' Lambda | .921 | .060 | .891 |
| | Hotelling's Trace | .921 | .060 | .891 |
| | Roy's Largest Root | .921 | .060 | .891 |
| DataAttributeType * Dataset | Pillai's Trace | .190 | .099 | 1.863 |
| | Wilks' Lambda | .190 | .099 | 1.863 |
| | Hotelling's Trace | .190 | .099 | 1.863 |
| | Roy's Largest Root | .190 | .099 | 1.863 |

**Multivariate Tests[a]**

| Effect | | Observed Power[c] |
|---|---|---|
| Visualization | Pillai's Trace | .971 |
| | Wilks' Lambda | .971 |
| | Hotelling's Trace | .971 |
| | Roy's Largest Root | .971 |
| DataAttributeType | Pillai's Trace | .976 |
| | Wilks' Lambda | .976 |
| | Hotelling's Trace | .976 |
| | Roy's Largest Root | .976 |
| Dataset | Pillai's Trace | .112 |
| | Wilks' Lambda | .112 |
| | Hotelling's Trace | .112 |
| | Roy's Largest Root | .112 |
| Visualization * DataAttributeType | Pillai's Trace | .783 |
| | Wilks' Lambda | .783 |
| | Hotelling's Trace | .783 |
| | Roy's Largest Root | .783 |
| Visualization * Dataset | Pillai's Trace | .085 |
| | Wilks' Lambda | .085 |
| | Hotelling's Trace | .085 |
| | Roy's Largest Root | .085 |
| DataAttributeType * Dataset | Pillai's Trace | .252 |
| | Wilks' Lambda | .252 |
| | Hotelling's Trace | .252 |
| | Roy's Largest Root | .252 |

**Multivariate Tests[a]**

| Effect | | Value | F | Hypothesis df | Error df |
|---|---|---|---|---|---|
| Visualization * DataAttributeType * Dataset | Pillai's Trace | .203 | .892[b] | 4.000 | 14.000 |
| | Wilks' Lambda | .797 | .892[b] | 4.000 | 14.000 |
| | Hotelling's Trace | .255 | .892[b] | 4.000 | 14.000 |
| | Roy's Largest Root | .255 | .892[b] | 4.000 | 14.000 |

## Multivariate Tests[a]

| Effect | | Sig. | Partial Eta Squared | Noncent. Parameter |
|---|---|---|---|---|
| Visualization * DataAttributeType * Dataset | Pillai's Trace | .494 | .203 | 3.568 |
| | Wilks' Lambda | .494 | .203 | 3.568 |
| | Hotelling's Trace | .494 | .203 | 3.568 |
| | Roy's Largest Root | .494 | .203 | 3.568 |

## Multivariate Tests[a]

| Effect | | Observed Power[c] |
|---|---|---|
| Visualization * DataAttributeType * Dataset | Pillai's Trace | .215 |
| | Wilks' Lambda | .215 |
| | Hotelling's Trace | .215 |
| | Roy's Largest Root | .215 |

a. Design: Intercept
Within Subjects Design: Visualization + DataAttributeType + Dataset + Visualization * DataAttributeType + Visualization * Dataset + DataAttributeType * Dataset + Visualization * DataAttributeType * Dataset

b. Exact statistic

c. Computed using alpha = .05

## Mauchly's Test of Sphericity[a]

Measure: MEASURE_1

| Within Subjects Effect | Mauchly's W | Approx. Chi-Square | df | Sig. | Epsilon[b] Greenhouse-Geisser |
|---|---|---|---|---|---|
| Visualization | .412 | 13.681 | 9 | .136 | .664 |
| DataAttributeType | 1.000 | .000 | 0 | . | 1.000 |
| Dataset | 1.000 | .000 | 0 | . | 1.000 |
| Visualization * DataAttributeType | .658 | 6.453 | 9 | .696 | .829 |
| Visualization * Dataset | .428 | 13.077 | 9 | .161 | .743 |
| DataAttributeType * Dataset | 1.000 | .000 | 0 | . | 1.000 |
| Visualization * DataAttributeType * Dataset | .510 | 10.383 | 9 | .323 | .775 |

## Mauchly's Test of Sphericity[a]

Measure: MEASURE_1

| Within Subjects Effect | Epsilon[b] Huynh-Feldt | Lower-bound |
|---|---|---|
| Visualization | .798 | .250 |
| DataAttributeType | 1.000 | 1.000 |
| Dataset | 1.000 | 1.000 |
| Visualization * DataAttributeType | 1.000 | .250 |
| Visualization * Dataset | .918 | .250 |
| DataAttributeType * Dataset | 1.000 | 1.000 |
| Visualization * DataAttributeType * Dataset | .967 | .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: Visualization + DataAttributeType + Dataset + Visualization * DataAttributeType + Visualization * Dataset + DataAttributeType * Dataset + Visualization * DataAttributeType * Dataset

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 | 65555.556 | 4 | 16388.889 | 12.187 |
| | Greenhouse-Geisser | 65555.556 | 2.656 | 24682.841 | 12.187 |
| | Huynh-Feldt | 65555.556 | 3.193 | 20528.409 | 12.187 |
| | Lower-bound | 65555.556 | 1.000 | 65555.556 | 12.187 |
| Error(Visualization) | Sphericity Assumed | 91444.444 | 68 | 1344.771 | |
| | Greenhouse-Geisser | 91444.444 | 45.151 | 2025.322 | |
| | Huynh-Feldt | 91444.444 | 54.288 | 1684.435 | |
| | Lower-bound | 91444.444 | 17.000 | 5379.085 | |
| DataAttributeType | Sphericity Assumed | 28444.444 | 1 | 28444.444 | 17.548 |
| | Greenhouse-Geisser | 28444.444 | 1.000 | 28444.444 | 17.548 |
| | Huynh-Feldt | 28444.444 | 1.000 | 28444.444 | 17.548 |
| | Lower-bound | 28444.444 | 1.000 | 28444.444 | 17.548 |
| Error(DataAttributeType) | Sphericity Assumed | 27555.556 | 17 | 1620.915 | |
| | Greenhouse-Geisser | 27555.556 | 17.000 | 1620.915 | |
| | Huynh-Feldt | 27555.556 | 17.000 | 1620.915 | |
| | Lower-bound | 27555.556 | 17.000 | 1620.915 | |
| Dataset | Sphericity Assumed | 1000.000 | 1 | 1000.000 | .586 |
| | Greenhouse-Geisser | 1000.000 | 1.000 | 1000.000 | .586 |
| | Huynh-Feldt | 1000.000 | 1.000 | 1000.000 | .586 |
| | Lower-bound | 1000.000 | 1.000 | 1000.000 | .586 |
| Error(Dataset) | Sphericity Assumed | 29000.000 | 17 | 1705.882 | |
| | Greenhouse-Geisser | 29000.000 | 17.000 | 1705.882 | |
| | Huynh-Feldt | 29000.000 | 17.000 | 1705.882 | |
| | Lower-bound | 29000.000 | 17.000 | 1705.882 | |
| Visualization * DataAttributeType | Sphericity Assumed | 20444.444 | 4 | 5111.111 | 3.526 |
| | Greenhouse-Geisser | 20444.444 | 3.316 | 6166.226 | 3.526 |
| | Huynh-Feldt | 20444.444 | 4.000 | 5111.111 | 3.526 |
| | Lower-bound | 20444.444 | 1.000 | 20444.444 | 3.526 |
| Error (Visualization*DataAttributeType) | Sphericity Assumed | 98555.556 | 68 | 1449.346 | |
| | Greenhouse-Geisser | 98555.556 | 56.364 | 1748.543 | |
| | Huynh-Feldt | 98555.556 | 68.000 | 1449.346 | |
| | Lower-bound | 98555.556 | 17.000 | 5797.386 | |
| Visualization * Dataset | Sphericity Assumed | 2888.889 | 4 | 722.222 | .402 |
| | Greenhouse-Geisser | 2888.889 | 2.972 | 972.095 | .402 |

## Tests of Within-Subjects Effects

Measure: MEASURE_1

| Source | | Sig. | Partial Eta Squared | Noncent. Parameter |
|---|---|---|---|---|
| Visualization | Sphericity Assumed | .000 | .418 | 48.748 |
| | Greenhouse-Geisser | .000 | .418 | 32.368 |
| | Huynh-Feldt | .000 | .418 | 38.918 |
| | Lower-bound | .003 | .418 | 12.187 |
| Error(Visualization) | Sphericity Assumed | | | |
| | Greenhouse-Geisser | | | |
| | Huynh-Feldt | | | |
| | Lower-bound | | | |
| DataAttributeType | Sphericity Assumed | .001 | .508 | 17.548 |
| | Greenhouse-Geisser | .001 | .508 | 17.548 |
| | Huynh-Feldt | .001 | .508 | 17.548 |
| | Lower-bound | .001 | .508 | 17.548 |
| Error(DataAttributeType) | Sphericity Assumed | | | |
| | Greenhouse-Geisser | | | |
| | Huynh-Feldt | | | |
| | Lower-bound | | | |
| Dataset | Sphericity Assumed | .454 | .033 | .586 |
| | Greenhouse-Geisser | .454 | .033 | .586 |
| | Huynh-Feldt | .454 | .033 | .586 |
| | Lower-bound | .454 | .033 | .586 |
| Error(Dataset) | Sphericity Assumed | | | |
| | Greenhouse-Geisser | | | |
| | Huynh-Feldt | | | |
| | Lower-bound | | | |
| Visualization * DataAttributeType | Sphericity Assumed | .011 | .172 | 14.106 |
| | Greenhouse-Geisser | .017 | .172 | 11.692 |
| | Huynh-Feldt | .011 | .172 | 14.106 |
| | Lower-bound | .078 | .172 | 3.526 |
| Error (Visualization*DataAttributeType) | Sphericity Assumed | | | |
| | Greenhouse-Geisser | | | |
| | Huynh-Feldt | | | |
| | Lower-bound | | | |
| Visualization * Dataset | Sphericity Assumed | .806 | .023 | 1.609 |
| | Greenhouse-Geisser | .750 | .023 | 1.195 |

## Tests of Within-Subjects Effects

Measure: MEASURE_1

| Source | | Observed Power[a] |
|---|---|---|
| Visualization | Sphericity Assumed | 1.000 |
| | Greenhouse-Geisser | .999 |
| | Huynh-Feldt | 1.000 |
| | Lower-bound | .908 |
| Error(Visualization) | Sphericity Assumed | |
| | Greenhouse-Geisser | |
| | Huynh-Feldt | |
| | Lower-bound | |
| DataAttributeType | Sphericity Assumed | .976 |
| | Greenhouse-Geisser | .976 |
| | Huynh-Feldt | .976 |
| | Lower-bound | .976 |
| Error(DataAttributeType) | Sphericity Assumed | |
| | Greenhouse-Geisser | |
| | Huynh-Feldt | |
| | Lower-bound | |
| Dataset | Sphericity Assumed | .112 |
| | Greenhouse-Geisser | .112 |
| | Huynh-Feldt | .112 |
| | Lower-bound | .112 |
| Error(Dataset) | Sphericity Assumed | |
| | Greenhouse-Geisser | |
| | Huynh-Feldt | |
| | Lower-bound | |
| Visualization * DataAttributeType | Sphericity Assumed | .842 |
| | Greenhouse-Geisser | .784 |
| | Huynh-Feldt | .842 |
| | Lower-bound | .425 |
| Error (Visualization*DataAttributeType) | Sphericity Assumed | |
| | Greenhouse-Geisser | |
| | Huynh-Feldt | |
| | Lower-bound | |
| Visualization * Dataset | Sphericity Assumed | .138 |
| | Greenhouse-Geisser | .124 |

## Tests of Within-Subjects Effects

Measure: MEASURE_1

| Source | | Type III Sum of Squares | df | Mean Square | F |
|---|---|---|---|---|---|
| | Huynh-Feldt | 2888.889 | 3.671 | 787.022 | .402 |
| | Lower-bound | 2888.889 | 1.000 | 2888.889 | .402 |
| Error(Visualization*Dataset) | Sphericity Assumed | 122111.111 | 68 | 1795.752 | |
| | Greenhouse-Geisser | 122111.111 | 50.521 | 2417.043 | |
| | Huynh-Feldt | 122111.111 | 62.401 | 1956.871 | |
| | Lower-bound | 122111.111 | 17.000 | 7183.007 | |
| DataAttributeType * Dataset | Sphericity Assumed | 1777.778 | 1 | 1777.778 | 1.863 |
| | Greenhouse-Geisser | 1777.778 | 1.000 | 1777.778 | 1.863 |
| | Huynh-Feldt | 1777.778 | 1.000 | 1777.778 | 1.863 |
| | Lower-bound | 1777.778 | 1.000 | 1777.778 | 1.863 |
| Error (DataAttributeType*Dataset) | Sphericity Assumed | 16222.222 | 17 | 954.248 | |
| | Greenhouse-Geisser | 16222.222 | 17.000 | 954.248 | |
| | Huynh-Feldt | 16222.222 | 17.000 | 954.248 | |
| | Lower-bound | 16222.222 | 17.000 | 954.248 | |
| Visualization * DataAttributeType * Dataset | Sphericity Assumed | 7111.111 | 4 | 1777.778 | 1.008 |
| | Greenhouse-Geisser | 7111.111 | 3.099 | 2294.926 | 1.008 |
| | Huynh-Feldt | 7111.111 | 3.868 | 1838.286 | 1.008 |
| | Lower-bound | 7111.111 | 1.000 | 7111.111 | 1.008 |
| Error (Visualization*DataAttribute Type*Dataset) | Sphericity Assumed | 119888.889 | 68 | 1763.072 | |
| | Greenhouse-Geisser | 119888.889 | 52.677 | 2275.942 | |
| | Huynh-Feldt | 119888.889 | 65.762 | 1823.080 | |
| | Lower-bound | 119888.889 | 17.000 | 7052.288 | |

## Tests of Within-Subjects Effects

Measure: MEASURE_1

| Source | | Sig. | Partial Eta Squared | Noncent. Parameter |
|---|---|---|---|---|
| | Huynh-Feldt | .790 | .023 | 1.476 |
| | Lower-bound | .534 | .023 | .402 |
| Error(Visualization*Dataset) | Sphericity Assumed | | | |
| | Greenhouse-Geisser | | | |
| | Huynh-Feldt | | | |
| | Lower-bound | | | |
| DataAttributeType * Dataset | Sphericity Assumed | .190 | .099 | 1.863 |
| | Greenhouse-Geisser | .190 | .099 | 1.863 |
| | Huynh-Feldt | .190 | .099 | 1.863 |
| | Lower-bound | .190 | .099 | 1.863 |
| Error (DataAttributeType*Dataset) | Sphericity Assumed | | | |
| | Greenhouse-Geisser | | | |
| | Huynh-Feldt | | | |
| | Lower-bound | | | |
| Visualization * DataAttributeType * Dataset | Sphericity Assumed | .409 | .056 | 4.033 |
| | Greenhouse-Geisser | .398 | .056 | 3.124 |
| | Huynh-Feldt | .408 | .056 | 3.901 |
| | Lower-bound | .329 | .056 | 1.008 |
| Error (Visualization*DataAttributeType*Dataset) | Sphericity Assumed | | | |
| | Greenhouse-Geisser | | | |
| | Huynh-Feldt | | | |
| | Lower-bound | | | |

## Tests of Within-Subjects Effects

Measure: MEASURE_1

| Source | | Observed Power[a] |
|---|---|---|
| | Huynh-Feldt | .133 |
| | Lower-bound | .092 |
| Error(Visualization*Dataset) | Sphericity Assumed | |
| | Greenhouse-Geisser | |
| | Huynh-Feldt | |
| | Lower-bound | |
| DataAttributeType * Dataset | Sphericity Assumed | .252 |
| | Greenhouse-Geisser | .252 |
| | Huynh-Feldt | .252 |
| | Lower-bound | .252 |
| Error (DataAttributeType*Dataset) | Sphericity Assumed | |
| | Greenhouse-Geisser | |
| | Huynh-Feldt | |
| | Lower-bound | |
| Visualization * DataAttributeType * Dataset | Sphericity Assumed | .302 |
| | Greenhouse-Geisser | .263 |
| | Huynh-Feldt | .297 |
| | Lower-bound | .158 |
| Error (Visualization*DataAttributeType*Dataset) | Sphericity Assumed | |
| | Greenhouse-Geisser | |
| | Huynh-Feldt | |
| | Lower-bound | |

a. Computed using alpha = .05

## Tests of Within-Subjects Contrasts

Measure: MEASURE_1

| Source | Visualization | DataAttributeType | Dataset | Type III Sum of Squares | df |
|---|---|---|---|---|---|
| Visualization | Linear | | | 24500.000 | 1 |
| | Quadratic | | | 8928.571 | 1 |
| | Cubic | | | 3555.556 | 1 |
| | Order 4 | | | 28571.429 | 1 |
| Error(Visualization) | Linear | | | 43000.000 | 17 |
| | Quadratic | | | 12142.857 | 17 |
| | Cubic | | | 16444.444 | 17 |
| | Order 4 | | | 19857.143 | 17 |
| DataAttributeType | | Linear | | 28444.444 | 1 |
| Error(DataAttributeType) | | Linear | | 27555.556 | 17 |
| Dataset | | | Linear | 1000.000 | 1 |
| Error(Dataset) | | | Linear | 29000.000 | 17 |
| Visualization * DataAttributeType | Linear | Linear | | 5555.556 | 1 |
| | Quadratic | Linear | | 12857.143 | 1 |
| | Cubic | Linear | | .000 | 1 |
| | Order 4 | Linear | | 2031.746 | 1 |
| Error (Visualization*DataAttributeType) | Linear | Linear | | 22944.444 | 17 |
| | Quadratic | Linear | | 27500.000 | 17 |
| | Cubic | Linear | | 19000.000 | 17 |
| | Order 4 | Linear | | 29111.111 | 17 |
| Visualization * Dataset | Linear | | Linear | 1388.889 | 1 |
| | Quadratic | | Linear | 39.683 | 1 |
| | Cubic | | Linear | 1388.889 | 1 |
| | Order 4 | | Linear | 71.429 | 1 |
| Error(Visualization*Dataset) | Linear | | Linear | 28111.111 | 17 |
| | Quadratic | | Linear | 18174.603 | 17 |
| | Cubic | | Linear | 41611.111 | 17 |
| | Order 4 | | Linear | 34214.286 | 17 |
| DataAttributeType * Dataset | | Linear | Linear | 1777.778 | 1 |
| Error (DataAttributeType*Dataset) | | Linear | Linear | 16222.222 | 17 |
| Visualization * DataAttributeType * Dataset | Linear | Linear | Linear | 5555.556 | 1 |
| | Quadratic | Linear | Linear | 158.730 | 1 |

## Tests of Within-Subjects Contrasts

Measure: MEASURE_1

| Source | Visualization | DataAttributeType | Dataset | Mean Square | F |
|---|---|---|---|---|---|
| Visualization | Linear | | | 24500.000 | 9.686 |
| | Quadratic | | | 8928.571 | 12.500 |
| | Cubic | | | 3555.556 | 3.676 |
| | Order 4 | | | 28571.429 | 24.460 |
| Error(Visualization) | Linear | | | 2529.412 | |
| | Quadratic | | | 714.286 | |
| | Cubic | | | 967.320 | |
| | Order 4 | | | 1168.067 | |
| DataAttributeType | | Linear | | 28444.444 | 17.548 |
| Error(DataAttributeType) | | Linear | | 1620.915 | |
| Dataset | | | Linear | 1000.000 | .586 |
| Error(Dataset) | | | Linear | 1705.882 | |
| Visualization * DataAttributeType | Linear | Linear | | 5555.556 | 4.116 |
| | Quadratic | Linear | | 12857.143 | 7.948 |
| | Cubic | Linear | | .000 | .000 |
| | Order 4 | Linear | | 2031.746 | 1.186 |
| Error (Visualization*DataAttributeType) | Linear | Linear | | 1349.673 | |
| | Quadratic | Linear | | 1617.647 | |
| | Cubic | Linear | | 1117.647 | |
| | Order 4 | Linear | | 1712.418 | |
| Visualization * Dataset | Linear | | Linear | 1388.889 | .840 |
| | Quadratic | | Linear | 39.683 | .037 |
| | Cubic | | Linear | 1388.889 | .567 |
| | Order 4 | | Linear | 71.429 | .035 |
| Error(Visualization*Dataset) | Linear | | Linear | 1653.595 | |
| | Quadratic | | Linear | 1069.094 | |
| | Cubic | | Linear | 2447.712 | |
| | Order 4 | | Linear | 2012.605 | |
| DataAttributeType * Dataset | | Linear | Linear | 1777.778 | 1.863 |
| Error (DataAttributeType*Dataset) | | Linear | Linear | 954.248 | |
| Visualization * DataAttributeType * Dataset | Linear | Linear | Linear | 5555.556 | 2.425 |
| | Quadratic | Linear | Linear | 158.730 | .125 |

## Tests of Within-Subjects Contrasts

Measure: MEASURE_1

| Source | Visualization | DataAttributeType | Dataset | Sig. | Partial Eta Squared |
|---|---|---|---|---|---|
| Visualization | Linear | | | .006 | .363 |
| | Quadratic | | | .003 | .424 |
| | Cubic | | | .072 | .178 |
| | Order 4 | | | .000 | .590 |
| Error(Visualization) | Linear | | | | |
| | Quadratic | | | | |
| | Cubic | | | | |
| | Order 4 | | | | |
| DataAttributeType | | Linear | | .001 | .508 |
| Error(DataAttributeType) | | Linear | | | |
| Dataset | | | Linear | .454 | .033 |
| Error(Dataset) | | | Linear | | |
| Visualization * DataAttributeType | Linear | Linear | | .058 | .195 |
| | Quadratic | Linear | | .012 | .319 |
| | Cubic | Linear | | 1.000 | .000 |
| | Order 4 | Linear | | .291 | .065 |
| Error (Visualization*DataAttributeType) | Linear | Linear | | | |
| | Quadratic | Linear | | | |
| | Cubic | Linear | | | |
| | Order 4 | Linear | | | |
| Visualization * Dataset | Linear | | Linear | .372 | .047 |
| | Quadratic | | Linear | .850 | .002 |
| | Cubic | | Linear | .462 | .032 |
| | Order 4 | | Linear | .853 | .002 |
| Error(Visualization*Dataset) | Linear | | Linear | | |
| | Quadratic | | Linear | | |
| | Cubic | | Linear | | |
| | Order 4 | | Linear | | |
| DataAttributeType * Dataset | | Linear | Linear | .190 | .099 |
| Error (DataAttributeType*Dataset) | | Linear | Linear | | |
| Visualization * DataAttributeType * Dataset | Linear | Linear | Linear | .138 | .125 |
| | Quadratic | Linear | Linear | .728 | .007 |

## Tests of Within-Subjects Contrasts

Measure: MEASURE_1

| Source | Visualization | DataAttributeType | Dataset | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|
| Visualization | Linear | | | 9.686 | .835 |
| | Quadratic | | | 12.500 | .915 |
| | Cubic | | | 3.676 | .440 |
| | Order 4 | | | 24.460 | .996 |
| Error(Visualization) | Linear | | | | |
| | Quadratic | | | | |
| | Cubic | | | | |
| | Order 4 | | | | |
| DataAttributeType | | Linear | | 17.548 | .976 |
| Error(DataAttributeType) | | Linear | | | |
| Dataset | | | Linear | .586 | .112 |
| Error(Dataset) | | | Linear | | |
| Visualization * DataAttributeType | Linear | Linear | | 4.116 | .482 |
| | Quadratic | Linear | | 7.948 | .757 |
| | Cubic | Linear | | .000 | .050 |
| | Order 4 | Linear | | 1.186 | .177 |
| Error (Visualization*DataAttributeType) | Linear | Linear | | | |
| | Quadratic | Linear | | | |
| | Cubic | Linear | | | |
| | Order 4 | Linear | | | |
| Visualization * Dataset | Linear | | Linear | .840 | .139 |
| | Quadratic | | Linear | .037 | .054 |
| | Cubic | | Linear | .567 | .110 |
| | Order 4 | | Linear | .035 | .054 |
| Error(Visualization*Dataset) | Linear | | Linear | | |
| | Quadratic | | Linear | | |
| | Cubic | | Linear | | |
| | Order 4 | | Linear | | |
| DataAttributeType * Dataset | | Linear | Linear | 1.863 | .252 |
| Error (DataAttributeType*Dataset) | | Linear | Linear | | |
| Visualization * DataAttributeType * Dataset | Linear | Linear | Linear | 2.425 | .312 |
| | Quadratic | Linear | Linear | .125 | .063 |

## Tests of Within-Subjects Contrasts

Measure: MEASURE_1

| Source | Visualization | DataAttributeType | Dataset | Type III Sum of Squares | df |
|---|---|---|---|---|---|
| | Cubic | Linear | Linear | 1388.889 | 1 |
| | Order 4 | Linear | Linear | 7.937 | 1 |
| Error (Visualization*DataAttributeType*Dataset) | Linear | Linear | Linear | 38944.444 | 17 |
| | Quadratic | Linear | Linear | 21626.984 | 17 |
| | Cubic | Linear | Linear | 26611.111 | 17 |
| | Order 4 | Linear | Linear | 32706.349 | 17 |

## Tests of Within-Subjects Contrasts

Measure: MEASURE_1

| Source | Visualization | DataAttributeType | Dataset | Mean Square | F |
|---|---|---|---|---|---|
| | Cubic | Linear | Linear | 1388.889 | .887 |
| | Order 4 | Linear | Linear | 7.937 | .004 |
| Error (Visualization*DataAttributeType*Dataset) | Linear | Linear | Linear | 2290.850 | |
| | Quadratic | Linear | Linear | 1272.176 | |
| | Cubic | Linear | Linear | 1565.359 | |
| | Order 4 | Linear | Linear | 1923.903 | |

## Tests of Within-Subjects Contrasts

Measure: MEASURE_1

| Source | Visualization | DataAttributeType | Dataset | Sig. | Partial Eta Squared |
|---|---|---|---|---|---|
| | Cubic | Linear | Linear | .359 | .050 |
| | Order 4 | Linear | Linear | .950 | .000 |
| Error (Visualization*DataAttributeType*Dataset) | Linear | Linear | Linear | | |
| | Quadratic | Linear | Linear | | |
| | Cubic | Linear | Linear | | |
| | Order 4 | Linear | Linear | | |

### Tests of Within-Subjects Contrasts

Measure: MEASURE_1

| Source | Visualization | DataAttributeType | Dataset | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|
| | Cubic | Linear | Linear | .887 | .144 |
| | Order 4 | Linear | Linear | .004 | .050 |
| Error (Visualization*DataAttributeType*Dataset) | Linear | Linear | Linear | | |
| | 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 | 2025000.000 | 1 | 2025000.000 | 800.581 | .000 | .979 |
| Error | 43000.000 | 17 | 2529.412 | | | |

### Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

| Source | Noncent. Parameter | Observed Power[a] |
|---|---|---|
| Intercept | 800.581 | 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 |
| 75.000 | 2.651 | 69.408 | 80.592 |

## 2. Visualization

## Estimates

Measure: MEASURE_1

| Visualization | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| 1 | 80.556 | 5.175 | 69.638 | 91.474 |
| 2 | 88.889 | 3.013 | 82.532 | 95.246 |
| 3 | 66.667 | 4.519 | 57.132 | 76.202 |
| 4 | 86.111 | 4.153 | 77.349 | 94.873 |
| 5 | 52.778 | 6.026 | 40.064 | 65.491 |

## Pairwise Comparisons

Measure: MEASURE_1

| (I) Visualization | (J) Visualization | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence [b]... |
|---|---|---|---|---|---|
| | | | | | Lower Bound |
| 1 | 2 | -8.333 | 5.347 | 1.000 | -25.565 |
| | 3 | 13.889 | 6.138 | .370 | -5.890 |
| | 4 | -5.556 | 5.175 | 1.000 | -22.231 |
| | 5 | 27.778* | 8.306 | .038 | 1.012 |
| 2 | 1 | 8.333 | 5.347 | 1.000 | -8.898 |
| | 3 | 22.222* | 5.677 | .011 | 3.929 |
| | 4 | 2.778 | 5.305 | 1.000 | -14.317 |
| | 5 | 36.111* | 7.886 | .003 | 10.700 |
| 3 | 1 | -13.889 | 6.138 | .370 | -33.668 |
| | 2 | -22.222* | 5.677 | .011 | -40.515 |
| | 4 | -19.444* | 5.175 | .016 | -36.120 |
| | 5 | 13.889 | 5.042 | .135 | -2.357 |
| 4 | 1 | 5.556 | 5.175 | 1.000 | -11.120 |
| | 2 | -2.778 | 5.305 | 1.000 | -19.872 |
| | 3 | 19.444* | 5.175 | .016 | 2.769 |
| | 5 | 33.333* | 6.063 | .000 | 13.794 |
| 5 | 1 | -27.778* | 8.306 | .038 | -54.544 |
| | 2 | -36.111* | 7.886 | .003 | -61.522 |
| | 3 | -13.889 | 5.042 | .135 | -30.135 |
| | 4 | -33.333* | 6.063 | .000 | -52.872 |

## Pairwise Comparisons

Measure: MEASURE_1

| (I) Visualization | (J) Visualization | 95% Confidence Interval for [b]... Upper Bound |
|---|---|---|
| 1 | 2 | 8.898 |
| | 3 | 33.668 |
| | 4 | 11.120 |
| | 5 | 54.544 |
| 2 | 1 | 25.565 |
| | 3 | 40.515 |
| | 4 | 19.872 |
| | 5 | 61.522 |
| 3 | 1 | 5.890 |
| | 2 | -3.929 |
| | 4 | -2.769 |
| | 5 | 30.135 |
| 4 | 1 | 22.231 |
| | 2 | 14.317 |
| | 3 | 36.120 |
| | 5 | 52.872 |
| 5 | 1 | -1.012 |
| | 2 | -10.700 |
| | 3 | 2.357 |
| | 4 | -13.794 |

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 | .678 | 7.380[a] | 4.000 | 14.000 | .002 | .678 |
| Wilks' lambda | .322 | 7.380[a] | 4.000 | 14.000 | .002 | .678 |
| Hotelling's trace | 2.108 | 7.380[a] | 4.000 | 14.000 | .002 | .678 |
| Roy's largest root | 2.108 | 7.380[a] | 4.000 | 14.000 | .002 | .678 |

**Multivariate Tests**

| | Noncent. Parameter | Observed Power[b] |
|---|---|---|
| Pillai's trace | 29.519 | .971 |
| Wilks' lambda | 29.519 | .971 |
| Hotelling's trace | 29.519 | .971 |
| Roy's largest root | 29.519 | .971 |

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. DataAttributeType

**Estimates**

Measure: MEASURE_1

| | | | 95% Confidence Interval | |
|---|---|---|---|---|
| DataAttributeType | Mean | Std. Error | Lower Bound | Upper Bound |
| 1 | 66.111 | 2.817 | 60.168 | 72.054 |
| 2 | 83.889 | 3.889 | 75.684 | 92.094 |

## Pairwise Comparisons

Measure: MEASURE_1

| (I) DataAttributeType | (J) DataAttributeType | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence ... Lower Bound |
|---|---|---|---|---|---|
| 1 | 2 | -17.778* | 4.244 | .001 | -26.731 |
| 2 | 1 | 17.778* | 4.244 | .001 | 8.824 |

## Pairwise Comparisons

Measure: MEASURE_1

| (I) DataAttributeType | (J) DataAttributeType | 95% Confidence Interval for ... Upper Bound |
|---|---|---|
| 1 | 2 | -8.824 |
| 2 | 1 | 26.731 |

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 | .508 | 17.548[a] | 1.000 | 17.000 | .001 | .508 |
| Wilks' lambda | .492 | 17.548[a] | 1.000 | 17.000 | .001 | .508 |
| Hotelling's trace | 1.032 | 17.548[a] | 1.000 | 17.000 | .001 | .508 |
| Roy's largest root | 1.032 | 17.548[a] | 1.000 | 17.000 | .001 | .508 |

## Multivariate Tests

| | Noncent. Parameter | Observed Power[b] |
|---|---|---|
| Pillai's trace | 17.548 | .976 |
| Wilks' lambda | 17.548 | .976 |
| Hotelling's trace | 17.548 | .976 |
| Roy's largest root | 17.548 | .976 |

Each F tests the multivariate effect of DataAttributeType. 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 * DataAttributeType

Measure: MEASURE_1

| Visualization | DataAttributeType | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|---|
| | | | | Lower Bound | Upper Bound |
| 1 | 1 | 69.444 | 8.224 | 52.094 | 86.795 |
| | 2 | 91.667 | 4.519 | 82.132 | 101.202 |
| 2 | 1 | 88.889 | 5.042 | 78.252 | 99.526 |
| | 2 | 88.889 | 5.042 | 78.252 | 99.526 |
| 3 | 1 | 61.111 | 6.462 | 47.477 | 74.745 |
| | 2 | 72.222 | 8.306 | 54.698 | 89.746 |
| 4 | 1 | 80.556 | 7.162 | 65.446 | 95.665 |
| | 2 | 91.667 | 4.519 | 82.132 | 101.202 |
| 5 | 1 | 30.556 | 5.912 | 18.083 | 43.028 |
| | 2 | 75.000 | 8.333 | 57.418 | 92.582 |