

Two Way Analysis of Variance

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Data source: SymmetryRT.JNB

Balanced Design

Dependent Variable: IndividualsAverageRT

Source of Variation	DF	SS	MS	F	P
Hue	1	292604,167	292604,167	64,266	<0,001
Variability	4	14154969,000	3538742,250	777,230	<0,001
Hue x Variability	4	1674091,667	418522,917	91,922	<0,001
Residual	140	637422,667	4553,019		
Total	149	16759087,500	112477,097		

Main effects cannot be properly interpreted if significant interaction is determined. This is because the size of a factor's effect depends upon the level of the other factor.

The effect of different levels of Hue depends on what level of Variability is present. There is a statistically significant interaction between Hue and Variability. ($P = <0,001$)

Power of performed test with $\alpha = 0,0500$: for Hue : 1,000

Power of performed test with $\alpha = 0,0500$: for Variability : 1,000

Power of performed test with $\alpha = 0,0500$: for Hue x Variability : 1,000

Least square means for Hue :

Group	Mean
Color	1121,467
Achromatic	1033,133
Std Err of LS Mean = 8,591	

Least square means for Variability :

Group	Mean
A	589,600
B	954,100
C	1055,600
D	1298,100
E	1489,100

Std Err of LS Mean = 12,319

Least square means for Hue x Variability :

Group	Mean
Color x A	512,600
Color x B	885,600
Color x C	1112,600
Color x D	1408,933
Color x E	1687,600
Achromatic x A	666,600
Achromatic x B	1022,600
Achromatic x C	998,600
Achromatic x D	1187,267
Achromatic x E	1290,600
Std Err of LS Mean = 14,422	

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0,05

Comparisons for factor: **Variability within Color**

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
E vs. A	1175,000	47,689	<0,001	0,005	Yes
D vs. A	896,333	36,379	<0,001	0,006	Yes
E vs. B	802,000	32,550	<0,001	0,006	Yes
C vs. A	600,000	24,352	<0,001	0,007	Yes
E vs. C	575,000	23,337	<0,001	0,009	Yes
D vs. B	523,333	21,240	<0,001	0,010	Yes
B vs. A	373,000	15,139	<0,001	0,013	Yes
D vs. C	296,333	12,027	<0,001	0,017	Yes
E vs. D	278,667	11,310	<0,001	0,025	Yes
C vs. B	227,000	9,213	<0,001	0,050	Yes

Comparisons for factor: **Variability within Achromatic**

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
E vs. A	624,000	25,326	<0,001	0,005	Yes
D vs. A	520,667	21,132	<0,001	0,006	Yes
B vs. A	356,000	14,449	<0,001	0,006	Yes
C vs. A	332,000	13,475	<0,001	0,007	Yes
E vs. C	292,000	11,851	<0,001	0,009	Yes
E vs. B	268,000	10,877	<0,001	0,010	Yes
D vs. C	188,667	7,657	<0,001	0,013	Yes
D vs. B	164,667	6,683	<0,001	0,017	Yes
E vs. D	103,333	4,194	<0,001	0,025	Yes
B vs. C	24,000	0,974	0,332	0,050	No

Comparisons for factor: **Hue within A**

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Achromatic vs. Color	154,000	6,250	<0,001	0,050	Yes

Comparisons for factor: **Hue within B**

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Achromatic vs. Color	137,000	5,560	<0,001	0,050	Yes

Comparisons for factor: **Hue within C**

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Color vs. Achromatic	114,000	4,627	<0,001	0,050	Yes

Comparisons for factor: **Hue within D**

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Color vs. Achromatic	221,667	8,997	<0,001	0,050	Yes

Comparisons for factor: **Hue within E**

Comparison	Diff of Means	t	Unadjusted P	Critical Level	Significant?
Color vs. Achromatic	397,000	16,113	<0,001	0,050	Yes

