Univariate Analysis of Variance

Notes

Output Created		12-MAR-2016 10:20:51
Comments		
Input	Data	D:\Google Drive\ELEX_2016\CD\Bab 6\6.2.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	16
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.
Syntax		UNIANOVA Waktu BY Katalis_Perlakuan Material_Blok /CONTRAST(Katalis_Perlakuan)=Simple /METHOD=SSTYPE(3) /INTERCEPT=EXCLUDE /POSTHOC=Katalis_Perlakuan(DUNCAN) /PLOT=PROFILE (Material_Blok*Katalis_Perlakuan) /EMMEANS=TABLES(Katalis_Perlakuan) COMPARE ADJ(LSD) /CRITERIA=ALPHA(.05) /DESIGN=Katalis_Perlakuan Material_Blok.
Resources	Processor Time	00:00:00.94
	Elapsed Time	00:00:00.65

Between-Subjects Factors

		Value Label	N
Katalis_Perlakuan	1	Katalis 1	3
	2	Katalis 2	3
	3	Katalis 3	3
	4	Katalis 4	3
Material_Blok	1	Material 1	3
	2	Material 2	3
	3	Material 3	3
	4	Material 4	3

Tests of Between-Subjects Effects

Dependent Variable: Waktu

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	63152.750[a]	7	9021.821	13879.725	.000
Katalis_Perlakuan	22.750	3	7.583	11.667	.011
Material_Blok	66.083	3	22.028	33.889	.001
Error	3.250	5	.650		
Total	63156.000	12			

a. R Squared = 1.000 (Adjusted R Squared = 1.000)

Custom Hypothesis Tests

Contrast Results (K Matrix)

Katalis_Perlakuan Simple Contrast[a]			Dependent Variable: Waktu
Level 1 vs. Level 4	Contrast Estimate		-3.625
	Hypothesized Value		0
	Difference (Estimate - Hypothesized)		-3.625
	Std. Error		.698
	Sig.		.003
	95% Confidence Interval for Difference	Lower Bound	-5.420
		Upper Bound	-1.830
Level 2 vs. Level 4	Contrast Estimate		-3.375
	Hypothesized Value		0
	Difference (Estimate - Hypothesized)		-3.375
	Std. Error		.698
	Sig.		.005
	95% Confidence Interval for Difference	Lower Bound	-5.170
		Upper Bound	-1.580
Level 3 vs. Level 4	Contrast Estimate		-3.000
	Hypothesized Value		0
	Difference (Estimate - Hypothesized)		-3.000
	Std. Error		.698
	Sig.		.008
	95% Confidence Interval for Difference	Lower Bound	-4.795
		Upper Bound	-1.205

a. Reference category = 4

Test Results

Dependent Variable: Waktu

Source	Sum of Squares	df	Mean Square	F	Sig.
Contrast	22.750	3	7.583	11.667	.011
Error	3.250	5	.650		

Estimated Marginal Means

Katalis_Perlakuan

Estimates

Dependent Variable: Waktu

Katalis_Perlakuan	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Katalis 1	71.375	.487	70.124	72.626
Katalis 2	71.625	.487	70.374	72.876
Katalis 3	72.000	.487	70.749	73.251
Katalis 4	75.000	.487	73.749	76.251

Pairwise Comparisons

Dependent Variable: Waktu

(I) Katalis_Perlakuan	(J) Katalis_Perlakuan	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
Katalis 1	Katalis 2	-.250	.698	.735	-2.045	1.545
	Katalis 3	-.625	.698	.412	-2.420	1.170
	Katalis 4	-3.625*	.698	.003	-5.420	-1.830
Katalis 2	Katalis 1	.250	.698	.735	-1.545	2.045
	Katalis 3	-.375	.698	.614	-2.170	1.420
	Katalis 4	-3.375*	.698	.005	-5.170	-1.580
Katalis 3	Katalis 1	.625	.698	.412	-1.170	2.420
	Katalis 2	.375	.698	.614	-1.420	2.170
	Katalis 4	-3.000*	.698	.008	-4.795	-1.205
Katalis 4	Katalis 1	3.625*	.698	.003	1.830	5.420
	Katalis 2	3.375*	.698	.005	1.580	5.170
	Katalis 3	3.000*	.698	.008	1.205	4.795

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: Waktu

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	22.750	3	7.583	11.667	.011
Error	3.250	5	.650		

The F tests the effect of Katalis_Perlakuan. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Post Hoc Tests

Katalis_Perlakuan

Homogeneous Subsets

Waktu

Duncan[a,b]

Katalis_Perlakuan	N	Subset 1	Subset 2
Katalis 2	3	71.33	
Katalis 3	3	72.00	
Katalis 1	3	72.67	72.67
Katalis 4	3		74.00
Sig.		.106	.099

Means for groups in homogeneous subsets are displayed.

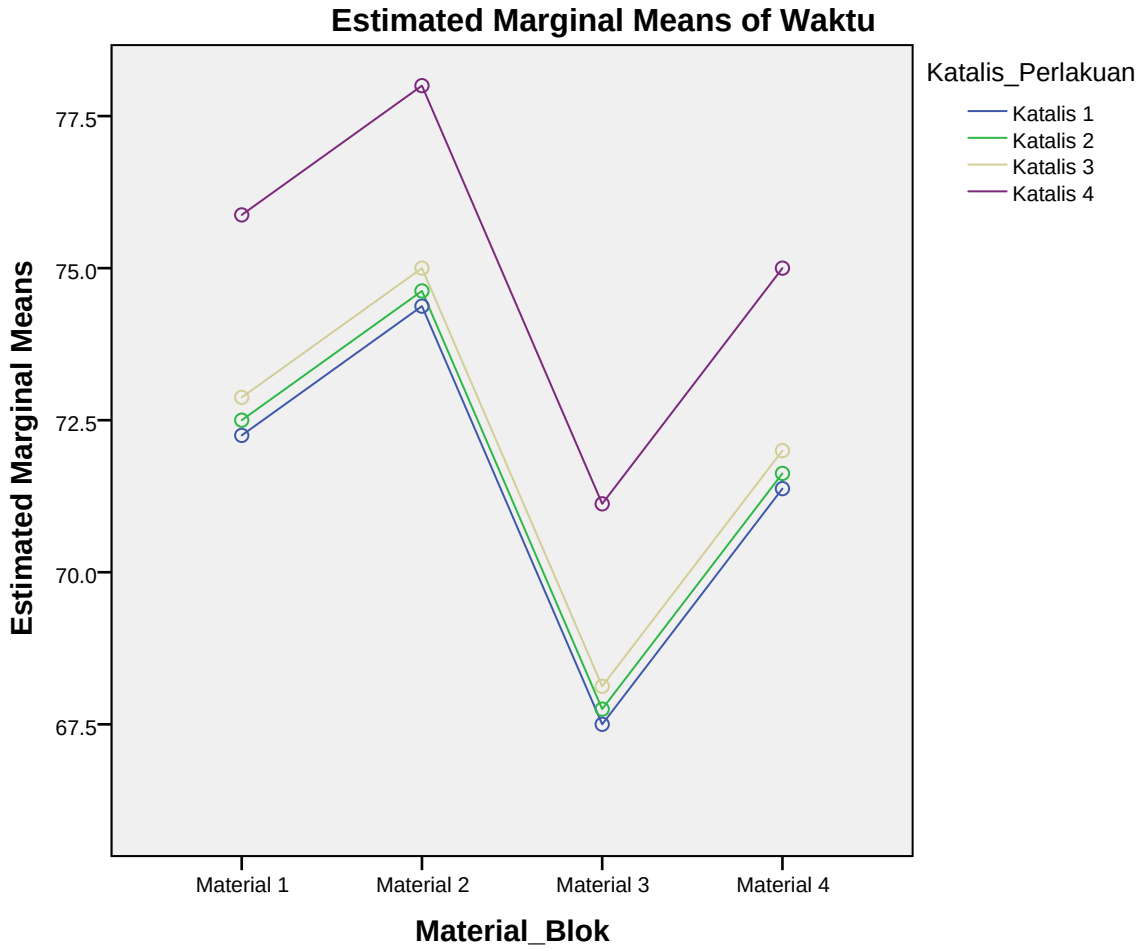
Based on observed means.

The error term is Mean Square(Error) = .650.

a. Uses Harmonic Mean Sample Size = 3.000.

b. Alpha = .05.

Profile Plots


Estimated Marginal Means of Waktu
Estimated Marginal Means
77.5
75.0
72.5
70.0
67.5
Material 1
Material 2
Material 3
Material 4
Material_Blok
Katalis_Perlakuan
Katalis 1
Katalis 2
Katalis 3
Katalis 4