Two Way Analysis of Variance torek, junij 17, 2014, 14:40:36

Data source: Druga hipoteza in Notebook 1

General Linear Model

Dependent Variable: Q1 ocena

Normality Test: Failed (P < 0,050)

Equal Variance Test: Failed (P < 0,050)

Source of Variation	DF	SS	MS	F	P
stik PP	1	3590,901	3590,901	128,105	<0,001
čas od tečaja	4	1846,120	461,530	16,465	<0,001
stik PP x čas od tečaja	4	33,536	8,384	0,299	0,879
Residual	1040	29152,061	28,031		
Total	1049	40946,553	39,034		

The difference in the mean values among the different levels of stik PP is greater than would be expected by chance after allowing for effects of differences in čas od tečaja. There is a statistically significant difference (P = <0,001). To isolate which group(s) differ from the others use a multiple comparison procedure.

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The effect of different levels of stik PP does not depend on what level of čas od tečaja is present. There is not a statistically significant interaction between stik PP and čas od tečaja. (P = 0,879)

Power of performed test with alpha = 0,0500: for stik PP : 1,000
Power of performed test with alpha = 0,0500: for čas od tečaja : 1,000
Power of performed test with alpha = 0,0500: for stik PP x čas od tečaja : 0,0500

Least square means for stik PP :

Group	Mean	SEM
1,000	27,571	0,277
2,000	23,176	0,272

Least square means for čas od tečaja :

Group	Mean	SEM
1,000	28,171	0,489
3,000	24,613	0,435
5,000	23,844	0,365
2,000	26,218	0,360
4,000	24,021	0,502

Least square means for stik PP x čas od tečaja :

Group	Mean	SEM
1,000 x 1,000	30,456	0,392

1,000 x 3,000	26,986	0,633
1,000 x 5,000	26,145	0,637
1,000 x 2,000	28,519	0,427
1,000 x 4,000	25,750	0,882
2,000 x 1,000	25,886	0,895
2,000 x 3,000	22,241	0,596
2,000 x 5,000	21,543	0,358
2,000 x 2,000	23,916	0,581
2,000 x 4,000	22,293	0,477

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

Comparisons for factor: **stik PP**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 2,000	4,396	11,318	4,331E-028	0,050	Yes

Comparisons for factor: **čas od tečaja**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 5,000	4,327	7,091	2,452E-012	0,005	Yes
1,000 vs. 4,000	4,150	5,926	0,00000000422	0,006	Yes
1,000 vs. 3,000	3,558	5,441	0,0000000660	0,006	Yes
2,000 vs. 5,000	2,373	4,624	0,00000424	0,007	Yes
2,000 vs. 4,000	2,196	3,555	0,000394	0,009	Yes
1,000 vs. 2,000	1,953	3,217	0,00134	0,010	Yes
2,000 vs. 3,000	1,604	2,842	0,00457	0,013	Yes
3,000 vs. 5,000	0,769	1,354	0,176	0,017	No
3,000 vs. 4,000	0,592	0,892	0,373	0,025	No
4,000 vs. 5,000	0,177	0,285	0,775	0,050	No

Comparisons for factor: **čas od tečaja within 1**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 5,000	4,311	5,760	0,000	0,005	Yes
1,000 vs. 4,000	4,706	4,873	0,000	0,006	Yes
1,000 vs. 3,000	3,470	4,661	0,000	0,006	Yes
1,000 vs. 2,000	1,937	3,341	0,001	0,007	Yes
2,000 vs. 5,000	2,375	3,096	0,002	0,009	Yes
2,000 vs. 4,000	2,769	2,826	0,005	0,010	Yes
2,000 vs. 3,000	1,534	2,010	0,045	0,013	No
3,000 vs. 4,000	1,236	1,138	0,255	0,017	No
3,000 vs. 5,000	0,841	0,936	0,349	0,025	No
5,000 vs. 4,000	0,395	0,363	0,717	0,050	No

Comparisons for factor: **čas od tečaja within 2**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 5,000	4,342	4,506	0,000	0,005	Yes
1,000 vs. 4,000	3,593	3,542	0,000	0,006	Yes
2,000 vs. 5,000	2,372	3,476	0,001	0,006	Yes
1,000 vs. 3,000	3,645	3,391	0,001	0,007	Yes
2,000 vs. 4,000	1,623	2,158	0,031	0,009	No

2,000 vs. 3,000	1,675	2,013	0,044	0,010	No
1,000 vs. 2,000	1,970	1,846	0,065	0,013	No
4,000 vs. 5,000	0,749	1,256	0,209	0,017	No
3,000 vs. 5,000	0,697	1,003	0,316	0,025	No
4,000 vs. 3,000	0,0522	0,0684	0,946	0,050	No

Comparisons for factor: **stik PP within 1**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 2,000	4,570	4,677	0,000	0,050	Yes

Comparisons for factor: **stik PP within 3**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 2,000	4,745	5,460	0,000	0,050	Yes

Comparisons for factor: **stik PP within 5**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 2,000	4,602	6,296	0,000	0,050	Yes

Comparisons for factor: **stik PP within 2**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 2,000	4,604	6,386	0,000	0,050	Yes

Comparisons for factor: **stik PP within 4**

Comparison	**Diff of Means**	**t**	**Unadjusted P**	**Critical Level**	**Significant?**
1,000 vs. 2,000	3,457	3,446	0,001	0,050	Yes