

Conover-Iman Post-Hoc Test

Conover-Iman Post-Hoc Test
Test-specific data preparation and execution

```
>Warning # 4492 on line 12521 in column 42. Text: internet_bin  
>The (ADD) VALUE LABELS command included a symbol other than a value where a  
>value (either numeric or string) was expected. For compatibility with  
>previous systems, a parenthesized value would have been acceptable. All valu  
e  
>labels up to the next slash will be ignored.
```

Conover-Iman post-hoc test after Kruskal-Wallis

>Warning # 2004 on line 12525. Command name: SUBTITLE

>The subtitle given exceeds 60 characters in length. The first 60 characters
>will be used.

Conover-Iman post-hoc test after Kruskal-Wallis
G3 by four study-time groups; pooled rank variance and Holm-

NPar Tests

Notes

Output Created		16-JUL-2026 16:45:43
Comments		
Input	Data	D:\DATA ANALYSIS\J Nonparametric Tests\Conover Test\dataset.csv
	Active Dataset	ConoverTestData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /K-W=G3 BY studytime(1,4) /STATISTICS=DESCRIPT IVES QUARTILES.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.03
	Number of Cases Allowed ^a	449389

a. Based on availability of workspace memory.

[ConoverTestData]

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Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles	
						25th	50th (Median)
G3	649	11.91	3.231	0	19	10.00	12.00
studytime	649	1.93	.830	1	4	1.00	2.00

Descriptive Statistics

	Percentiles
	75th
G3	14.00
studytime	2.00

Kruskal-Wallis Test

Ranks

	studytime	N	Mean Rank
G3	1	212	258.91
	2	305	338.26
	3	97	406.76
	4	35	383.13
	Total	649	

Test Statistics^{a,b}

G3	
Kruskal-Wallis H	50.316
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: studytime

RANK

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Notes

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Comments		
Input	Data	D:\DATA ANALYSIS\J Nonparametric Tests\Conover Test\dataset.csv
	Active Dataset	ConoverTestData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		RANK VARIABLES=G3 (A) /RANK INTO conover_rank /TIES=MEAN.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02
Variables Created or Modified	conover_rank	Rank of G3

Created Variables^a

Source Variable	Function	New Variable	Label
G3 ^b	Rank	conover_rank	Rank of G3

a. Mean rank of tied values is used for ties.

b. Ranks are in ascending order.

Means

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Comments		
Input	Data	D:\DATA ANALYSIS\J Nonparametric Tests\Conover Test\dataset.csv
	Active Dataset	ConoverTestData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	For each dependent variable in a table, user-defined missing values for the dependent and all grouping variables are treated as missing.
	Cases Used	Cases used for each table have no missing values in any independent variable, and not all dependent variables have missing values.
Syntax		MEANS TABLES=conover_rank BY studytime /CELLS=COUNT MEAN SUM STDDEV.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

Case Processing Summary

	Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
Rank of G3 * studytime	649	100.0%	0	0.0%	649	100.0%

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Report

Rank of G3

studytime	N	Mean	Sum	Std. Deviation
1	212	258.91274	54889.500	174.105536
2	305	338.26393	103170.500	185.421142
3	97	406.75773	39455.500	168.790336
4	35	383.12857	13409.500	184.683009
Total	649	325.00000	210925.000	186.292414

Graph

Notes

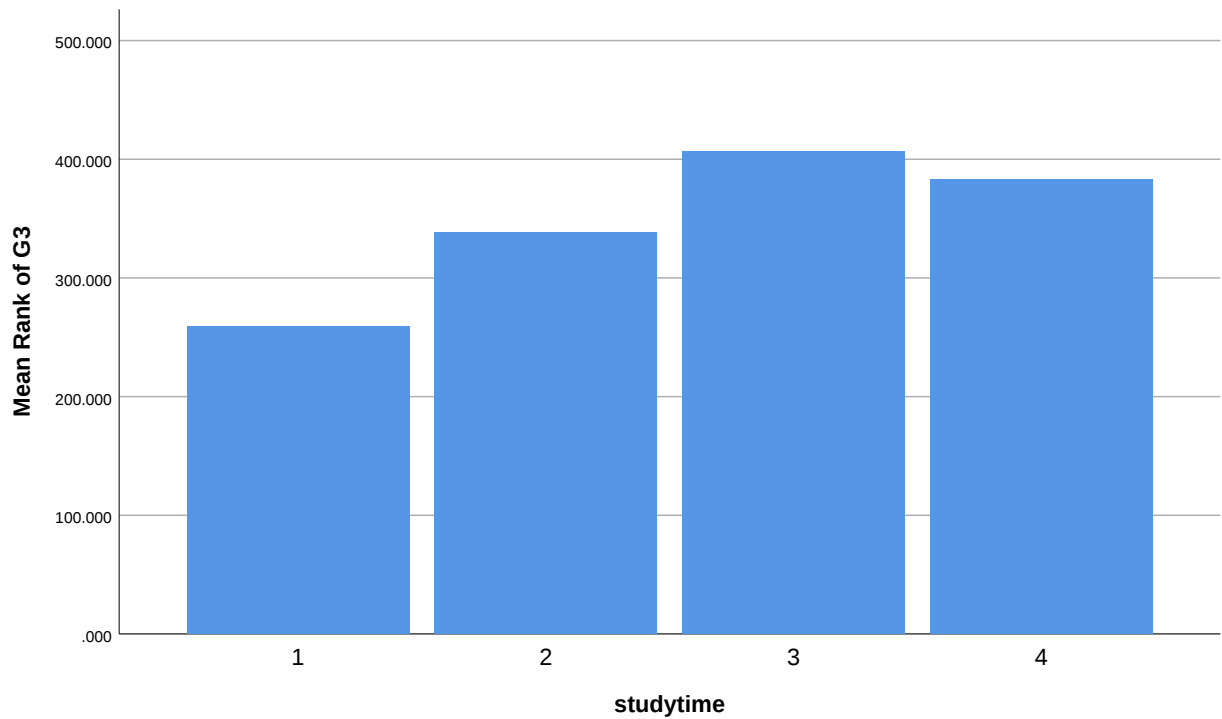
Output Created		16-JUL-2026 16:45:44
Comments		
Input	Data	D:\DATA ANALYSIS\J Nonparametric Tests\Conover Test\dataset.csv
	Active Dataset	ConoverTestData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /BAR(GROUPED) =MEAN(conover_rank) BY studytime.
Resources	Processor Time	00:00:01.08
	Elapsed Time	00:00:01.90

>Warning # 17848

>The requested bar chart type cannot be drawn with the provided data. Instead
,

>Graphics will attempt to draw a simple bar chart.

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CONOVER-IMAN POST-HOC TEST
Formula:  $t_{ij} = (\bar{R}_i - \bar{R}_j) / \sqrt{s^2 (N-1-H^*) / (N-k) (1/n_i + 1/n_j)}$ 
Variables: G3, studytime
kruskal_wallis_h = 50.31620817945674
minimum_holm_p = 2.315266878242286e-10
omnibus_p_value = 6.841570528918375e-11
rank_variance_s2 = 34704.86342592593
Cross-check status: pass
=====
```