

Mann-Whitney U Test

Mann-Whitney U Test
Test-specific data preparation and execution

```
>Warning # 4492 on line 13132 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.
```

Mann-Whitney U test

>Warning # 2004 on line 13136. Command name: SUBTITLE

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

Mann-Whitney U test
G3 distribution for students without versus with internet ac

NPar Tests

Notes

Output Created		16-JUL-2026 16:47:59
Comments		
Input	Data	D:\DATA ANALYSIS\J Nonparametric Tests\Mann Whitney U Test\dataset.csv
	Active Dataset	MannWhitneyUTestData
	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 /M-W=G3 BY internet_bin(0,1) /STATISTICS=DESCRIPTIVES 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.

[MannWhitneyUTestData]

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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
internet_bin	649	.77	.423	0	1	1.00	1.00

Descriptive Statistics

	Percentiles
	75th
G3	14.00
internet_bin	1.00

Mann-Whitney Test

Ranks

		internet_bin	N	Mean Rank	Sum of Ranks
G3	0		151	271.90	41057.50
	1		498	341.10	169867.50
	Total		649		

Test Statistics^a

G3	
Mann-Whitney U	29581.500
Wilcoxon W	41057.500
Z	-3.998
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: internet_bin

RANK

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Notes

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Comments		
Input	Data	D:\DATA ANALYSIS\J Nonparametric Tests\Mann Whitney U Test\dataset.csv
	Active Dataset	MannWhitneyUTestData
	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 mwu_rank /TIES=MEAN.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.03
Variables Created or Modified	mwu_rank	Rank of G3

Created Variables^a

Source Variable	Function	New Variable	Label
G3 ^b	Rank	mwu_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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Notes

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Comments		
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	Active Dataset	MannWhitneyUTestData
	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=mwu_rank BY internet_bin /CELLS=COUNT MEAN SUM.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.04

Case Processing Summary

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

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Report

Rank of G3

internet_bin	N	Mean	Sum
0	151	271.90397	41057.500
1	498	341.09940	169867.500
Total	649	325.00000	210925.000

Graph

Notes

Output Created		16-JUL-2026 16:48:00
Comments		
Input	Data	D:\DATA ANALYSIS\J Nonparametric Tests\Mann Whitney U Test\dataset.csv
	Active Dataset	MannWhitneyUTestData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /BAR(GROUPED) =MEAN(mwu_rank) BY internet_bin.
Resources	Processor Time	00:00:00.75
	Elapsed Time	00:00:01.31

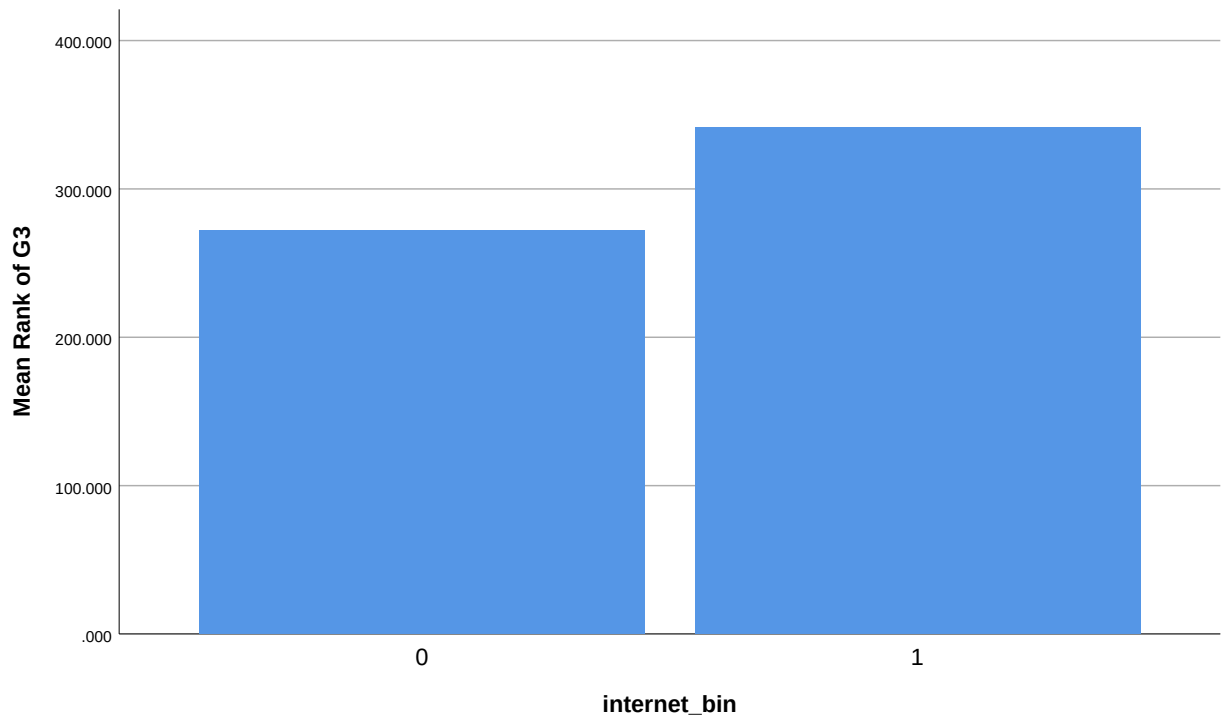
>Warning # 17848

>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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MANN-WHITNEY U TEST

Formula: $U_1 = R_1 - n_1(n_1+1)/2$

Variables: G3, internet

p_value = 6.389702349023713e-05

probability_superiority_no_over_yes = 0.3933814729115136

u_statistic = 29581.5

Cross-check status: pass

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