

Paired Sign Test

Paired Sign Test

Import and test-specific preparation

Dataset Name

Notes

Output Created		16-JUL-2026 14:43:23
Comments		
Input	Data	D:\DATA ANALYSIS\Chi Square and Categorical Data Tests\Sign Test\dataset.csv
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		DATASET NAME SignTestData.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01

Warnings

The active dataset will replace the existing dataset named SignTestData.

school into school_n

Old Value	New Value	Value	Label
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GP	1	GP
MS	2	MS

reason into reason_n

Old Value	New Value	Value	Label
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course	1	course
home	2	home
other	3	other
reputation	4	reputation

guardian into guardian_n

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Old Value	New Value	Value	Label
father	1	father	
mother	2	mother	
other	3	other	

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Paired sign test
Direction of G3 minus G2 nonzero differences

NPar Tests

Notes

Output Created		16-JUL-2026 14:43:25
Comments		
Input	Data	D:\DATA ANALYSIS\ Chi Square and Categorical Data Tests\Sign Test\dataset.csv
	Active Dataset	SignTestData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		NPAR TESTS /SIGN=G2 WITH G3 (PAIRED).
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01
	Number of Cases Allowed ^a	629145

a. Based on availability of workspace memory.

[SignTestData]

Sign Test

Frequencies

		N
G3 - G2	Negative Differences ^a	72
	Positive Differences ^b	290
	Ties ^c	287
	Total	649

a. $G3 < G2$

b. $G3 > G2$

c. $G3 = G2$

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Direction of G3 minus G2 nonzero differences

Test Statistics^a

	G3 - G2
Z	-11.405
Asymp. Sig. (2-tailed)	.000

a. Sign Test

Frequencies

Notes

Output Created		16-JUL-2026 14:43:25
Comments		
Input	Data	D:\DATA ANALYSIS\Chi Square and Categorical Data Tests\Sign Test\dataset.csv
	Active Dataset	SignTestData
	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 are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=G2 G3 /HISTOGRAM NORMAL /STATISTICS=MEDIAN MINIMUM MAXIMUM /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.73
	Elapsed Time	00:00:00.80

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Direction of G3 minus G2 nonzero differences

Statistics

		G2	G3
N	Valid	649	649
	Missing	0	0
Median		11.00	12.00
Minimum		0	0
Maximum		19	19

Frequency Table

G2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	7	1.1	1.1	1.1
	5	3	.5	.5	1.5
	6	7	1.1	1.1	2.6
	7	16	2.5	2.5	5.1
	8	40	6.2	6.2	11.2
	9	72	11.1	11.1	22.3
	10	83	12.8	12.8	35.1
	11	103	15.9	15.9	51.0
	12	86	13.3	13.3	64.3
	13	80	12.3	12.3	76.6
	14	54	8.3	8.3	84.9
	15	38	5.9	5.9	90.8
	16	25	3.9	3.9	94.6
	17	20	3.1	3.1	97.7
	18	14	2.2	2.2	99.8
	19	1	.2	.2	100.0
	Total	649	100.0	100.0	

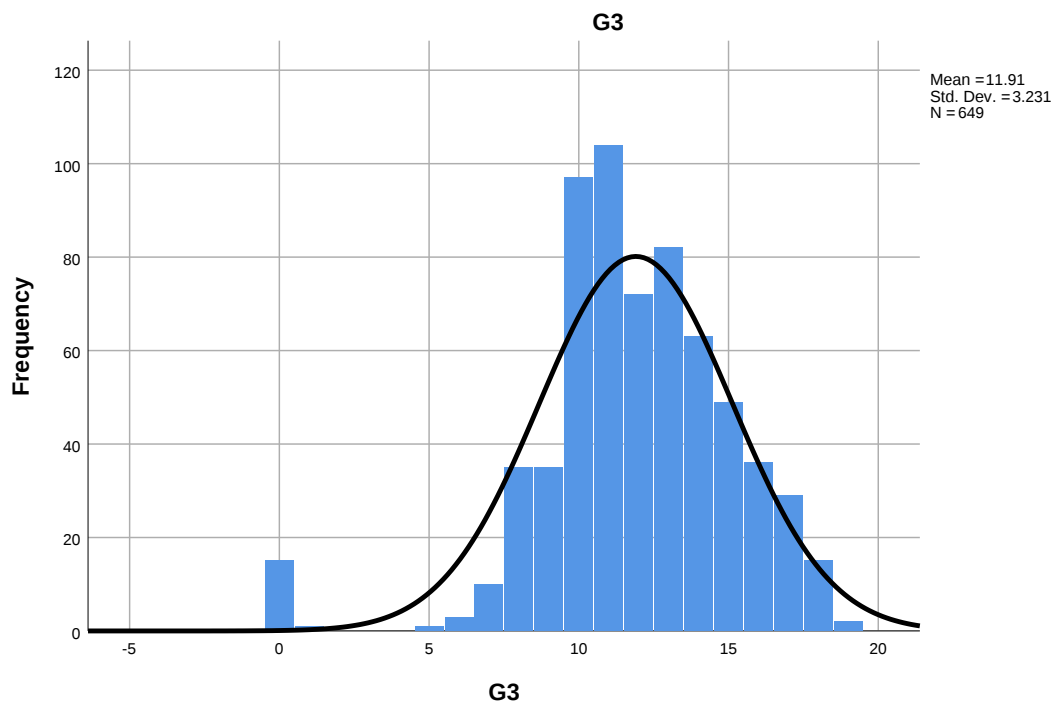
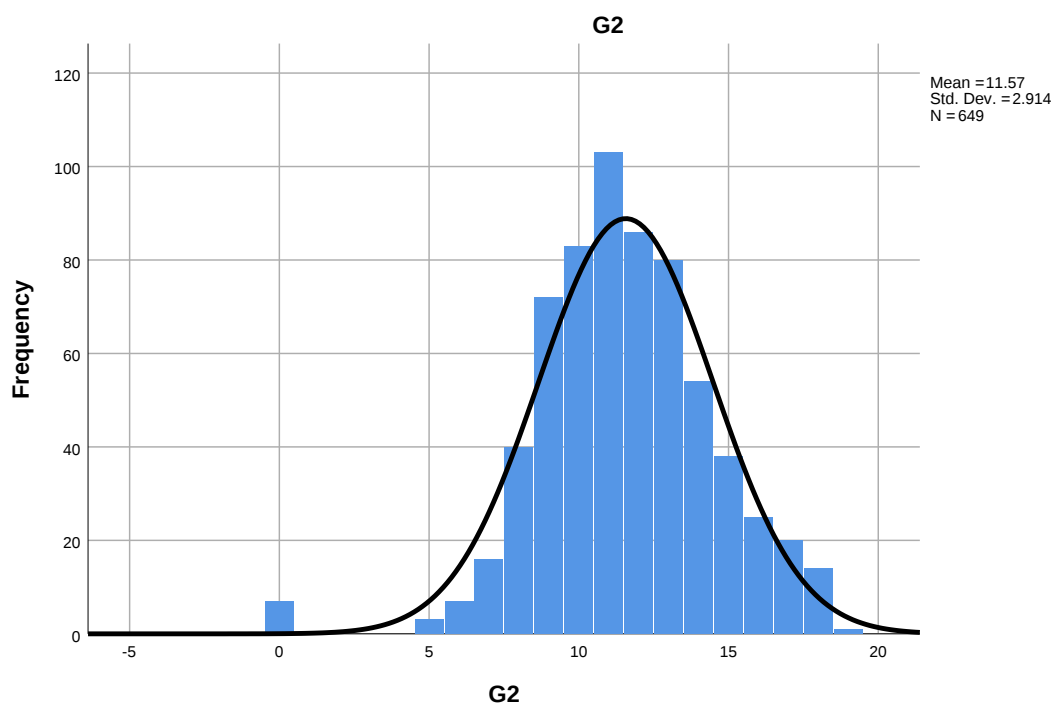
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G3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	2.3	2.3	2.3
	1	1	.2	.2	2.5
	5	1	.2	.2	2.6
	6	3	.5	.5	3.1
	7	10	1.5	1.5	4.6
	8	35	5.4	5.4	10.0
	9	35	5.4	5.4	15.4
	10	97	14.9	14.9	30.4
	11	104	16.0	16.0	46.4
	12	72	11.1	11.1	57.5
	13	82	12.6	12.6	70.1
	14	63	9.7	9.7	79.8
	15	49	7.6	7.6	87.4
	16	36	5.5	5.5	92.9
	17	29	4.5	4.5	97.4
	18	15	2.3	2.3	99.7
	19	2	.3	.3	100.0
	Total	649	100.0	100.0	

Histogram

Paired sign test
Direction of G3 minus G2 nonzero differences



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Direction of G3 minus G2 nonzero differences

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=====
PAIRED SIGN TEST
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Formula: S ~ Binomial(n_non-tied, 0.5); ties are excluded from the exact test.
Variables: G2, G3
exact_p_value = 3.9795987705072497e-32
median_difference = 0.0
negative_changes = 72
non_ties = 362
positive_changes = 290
ties = 287
Cross-check status: pass
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```