

McNemar's Test

McNemar's Test
Import and test-specific preparation

Dataset Name

Notes

Output Created		16-JUL-2026 14:42:45
Comments		
Input	Data	D:\DATA ANALYSIS\Chi Square and Categorical Data Tests\McNemars Test\dataset.csv
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		DATASET NAME McNemarsTestData.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01

Warnings

The active dataset will replace the existing dataset named
McNemarsTestData.

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	

McNemar paired binary test

>Warning # 2004 on line 9731. Command name: SUBTITLE

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

McNemar paired binary test
G2 pass/fail by G3 pass/fail; inference uses discordant pair

Crosstabs

Notes

Output Created		16-JUL-2026 14:42:46
Comments		
Input	Data	D:\DATA ANALYSIS\I Chi Square and Categorical Data Tests\McNemars Test\dataset.csv
	Active Dataset	McNemarsTestData
	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 table are based on all the cases with valid data in the specified range(s) for all variables in each table.
Syntax		CROSSTABS /TABLES=pass2 BY pass3 /FORMAT=AVALUE TABLES /STATISTICS=MCNEMAR KAPPA /CELLS=COUNT ROW COLUMN /COUNT ROUND CELL.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02
	Dimensions Requested	2
	Cells Available	524245

[McNemarsTestData]

McNemar paired binary test
G2 pass/fail by G3 pass/fail; inference uses discordant pair

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
G2 pass status at 10 * G3 pass status at 10	649	100.0%	0	0.0%	649	100.0%

G2 pass status at 10 * G3 pass status at 10 Crosstabulation

			G3 pass status at 10		Total
			No / fail	Yes / pass	
G2 pass status at 10	No / fail	Count	89	56	145
		% within G2 pass status at 10	61.4%	38.6%	100.0%
		% within G3 pass status at 10	89.0%	10.2%	22.3%
	Yes / pass	Count	11	493	504
		% within G2 pass status at 10	2.2%	97.8%	100.0%
		% within G3 pass status at 10	11.0%	89.8%	77.7%
Total	Count		100	549	649
	% within G2 pass status at 10		15.4%	84.6%	100.0%
	% within G3 pass status at 10		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	Exact Sig. (2-sided)
McNemar Test		.000 ^a
N of Valid Cases	649	

a. Binomial distribution used.

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G2 pass/fail by G3 pass/fail; inference uses discordant pair

Symmetric Measures

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Measure of Agreement	Kappa	.666	.037	17.399	.000
N of Valid Cases		649			

a. Not assuming the null hypothesis.

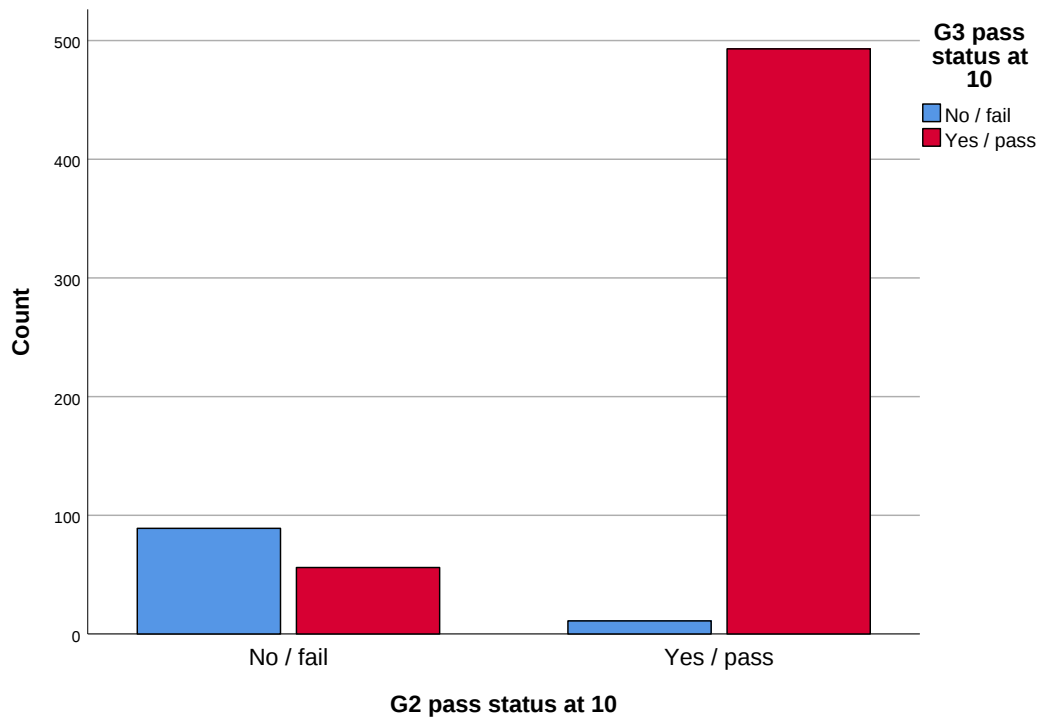
b. Using the asymptotic standard error assuming the null hypothesis.

Graph

Notes

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Comments		
Input	Data	D:\DATA ANALYSIS\ Chi Square and Categorical Data Tests\McNemars Test\dataset.csv
	Active Dataset	McNemarsTestData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /BAR(GROUPED) =COUNT BY pass2 BY pass3.
Resources	Processor Time	00:00:00.47
	Elapsed Time	00:00:00.42

McNemar paired binary test
G2 pass/fail by G3 pass/fail; inference uses discordant pair



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MCNEMAR'S TEST
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Formula: Exact p uses Binomial(b+c, 0.5); corrected X^2 = (|b-c|-1)^2/(b+c)
Variables: G2 >= 10, G3 >= 10
b_fail_to_pass = 56
c_pass_to_fail = 11
corrected_chi_square = 28.895522388059703
corrected_p_value = 7.63892954270268e-08
exact_p_value = 2.1457960315833694e-08
exact_statistic = 11.0
Cross-check status: pass
=====
=====
```