

McNemar-Bowker Test

McNemar-Bowker Test

Import and test-specific preparation

Dataset Name

Notes

Output Created		16-JUL-2026 14:42:38
Comments		
Input	Data	D:\DATA ANALYSIS\Chi Square and Categorical Data Tests\McNemar Bowker Test\dataset.csv
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		DATASET NAME McNemarBowkerTestData .
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.01

Warnings

The active dataset will replace the existing dataset named McNemarBowkerTestData.

school into school_n
Old Value New Value Value Label

GP	1	GP
MS	2	MS

reason into reason_n
Old Value New Value Value Label

course	1	course
home	2	home
other	3	other
reputation	4	reputation

McNemar-Bowker Test
Import and test-specific preparation

guardian into guardian_n

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

McNemar-Bowker marginal symmetry test

McNemar-Bowker marginal symmetry test
Paired G2-to-G3 transitions across four grade bands

Crosstabs

Notes

Output Created		16-JUL-2026 14:42:39
Comments		
Input	Data	D:\DATA ANALYSIS\Chi Square and Categorical Data Tests\McNemar Bowker Test\dataset.csv
	Active Dataset	McNemarBowkerTestData
	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=grade2 BY grade3 /FORMAT=AVALUE TABLES /STATISTICS=MCNEMAR /CELLS=COUNT ROW COLUMN /COUNT ROUND CELL.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.02
	Dimensions Requested	2
	Cells Available	524245

[McNemarBowkerTestData]

McNemar-Bowker marginal symmetry test
Paired G2-to-G3 transitions across four grade bands

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
G2 ordinal grade band * G3 ordinal grade band	649	100.0%	0	0.0%	649	100.0%

G2 ordinal grade band * G3 ordinal grade band Crosstabulation

			G3 ordinal grade band	
			Low below 10	Medium 10-13
G2 ordinal grade band	Low below 10	Count	89	56
		% within G2 ordinal grade band	61.4%	38.6%
		% within G3 ordinal grade band	89.0%	15.8%
	Medium 10-13	Count	11	296
		% within G2 ordinal grade band	3.1%	84.1%
		% within G3 ordinal grade band	11.0%	83.4%
	High 14-16	Count	0	3
		% within G2 ordinal grade band	0.0%	2.6%
		% within G3 ordinal grade band	0.0%	0.8%
	Very high 17+	Count	0	0
		% within G2 ordinal grade band	0.0%	0.0%
		% within G3 ordinal grade band	0.0%	0.0%
Total		Count	100	355
		% within G2 ordinal grade band	15.4%	54.7%
		% within G3 ordinal grade band	100.0%	100.0%

McNemar-Bowker marginal symmetry test
Paired G2-to-G3 transitions across four grade bands

G2 ordinal grade band * G3 ordinal grade band Crosstabulation

			G3 ordinal grade band	
			High 14-16	Very high 17+
G2 ordinal grade band	Low below 10	Count	0	0
		% within G2 ordinal grade band	0.0%	0.0%
		% within G3 ordinal grade band	0.0%	0.0%
	Medium 10-13	Count	45	0
		% within G2 ordinal grade band	12.8%	0.0%
		% within G3 ordinal grade band	30.4%	0.0%
	High 14-16	Count	102	12
		% within G2 ordinal grade band	87.2%	10.3%
		% within G3 ordinal grade band	68.9%	26.1%
	Very high 17+	Count	1	34
		% within G2 ordinal grade band	2.9%	97.1%
		% within G3 ordinal grade band	0.7%	73.9%
Total		Count	148	46
		% within G2 ordinal grade band	22.8%	7.1%
		% within G3 ordinal grade band	100.0%	100.0%

McNemar-Bowker marginal symmetry test
Paired G2-to-G3 transitions across four grade bands

G2 ordinal grade band * G3 ordinal grade band Crosstabulation

			Total
G2 ordinal grade band	Low below 10	Count	145
		% within G2 ordinal grade band	100.0%
		% within G3 ordinal grade band	22.3%
	Medium 10-13	Count	352
		% within G2 ordinal grade band	100.0%
		% within G3 ordinal grade band	54.2%
	High 14-16	Count	117
		% within G2 ordinal grade band	100.0%
		% within G3 ordinal grade band	18.0%
	Very high 17+	Count	35
		% within G2 ordinal grade band	100.0%
		% within G3 ordinal grade band	5.4%
Total		Count	649
		% within G2 ordinal grade band	100.0%
		% within G3 ordinal grade band	100.0%

Chi-Square Tests

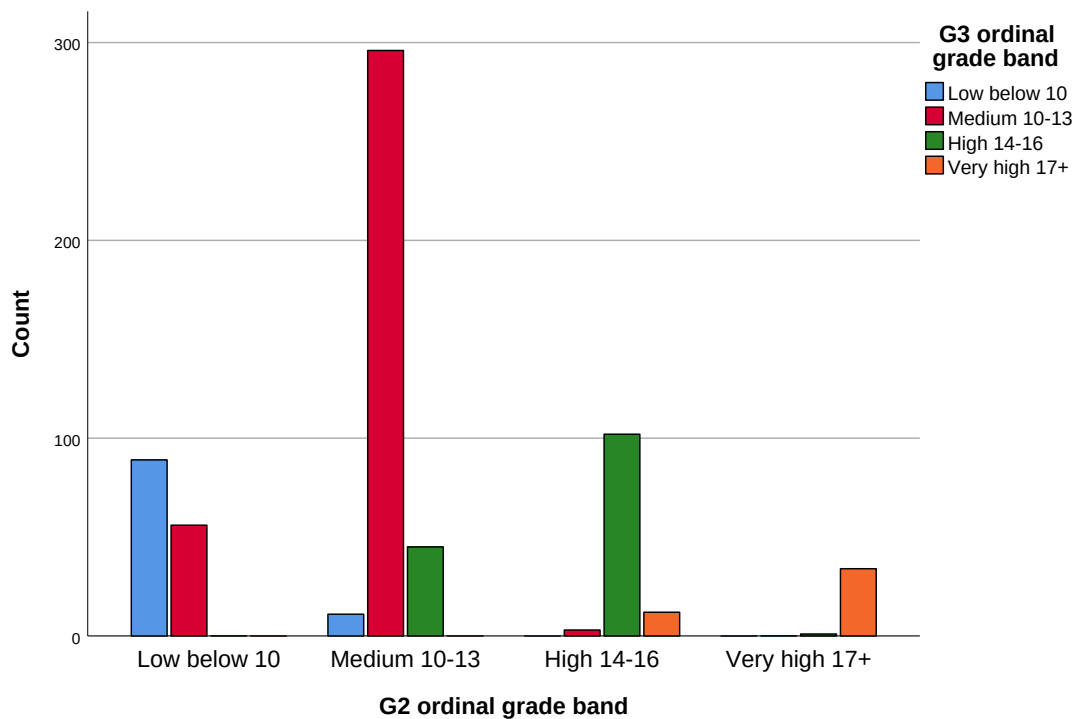
	Value	df	Asymptotic Significance (2- sided)
McNemar-Bowker Test	76.282	3	.000
N of Valid Cases	649		

Graph

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	Active Dataset	McNemarBowkerTestData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /BAR(GROUPED) =COUNT BY grade2 BY grade3.
Resources	Processor Time	00:00:00.39
	Elapsed Time	00:00:00.46



McNemar-Bowker marginal symmetry test
Paired G2-to-G3 transitions across four grade bands

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MCNEMAR-BOWKER TEST
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Formula:  $X^2_B = \sum_{i < j} (n_{ij} - n_{ji})^2 / (n_{ij} + n_{ji})$ 
Variables: G2 grade band, G3 grade band
bowker_statistic = 76.28157290470723
degrees_of_freedom = 3
diagonal_agreement = 521
p_value = 1.9248733079049484e-16
paired_students = 649
Cross-check status: pass
=====
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```