Binary Kappa Statistic with Prevalence and Bias Diagnostics

Binary Kappa Statistic with Prevalence and Bias Diagnostics
Import and test-specific preparation

Dataset Name

Notes

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

Warnings

The active dataset will replace the existing dataset named KappaStatisticData.

```
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


guardian into guardian_n
```

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

Binary kappa with prevalence and bias diagnostics
Agreement between G2 and G3 pass classifications

Crosstabs

Notes

Output Created		16-JUL-2026 14:42:17
Comments		
Input	Data	D:\DATA ANALYSIS\I Chi Square and Categorical Data Tests\Kappa Statistic\dataset.csv
	Active Dataset	KappaStatisticData
	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=KAPPA MCNEMAR /CELLS=COUNT ROW COLUMN /COUNT ROUND CELL.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.03
	Dimensions Requested	2
	Cells Available	524245

[KappaStatisticData]

Binary kappa with prevalence and bias diagnostics
Agreement between G2 and G3 pass classifications

Case Processing Summary

	Cases					
	Valid		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		
			No / fail	Yes / pass	Total
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.

Binary kappa with prevalence and bias diagnostics
Agreement between G2 and G3 pass classifications

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.

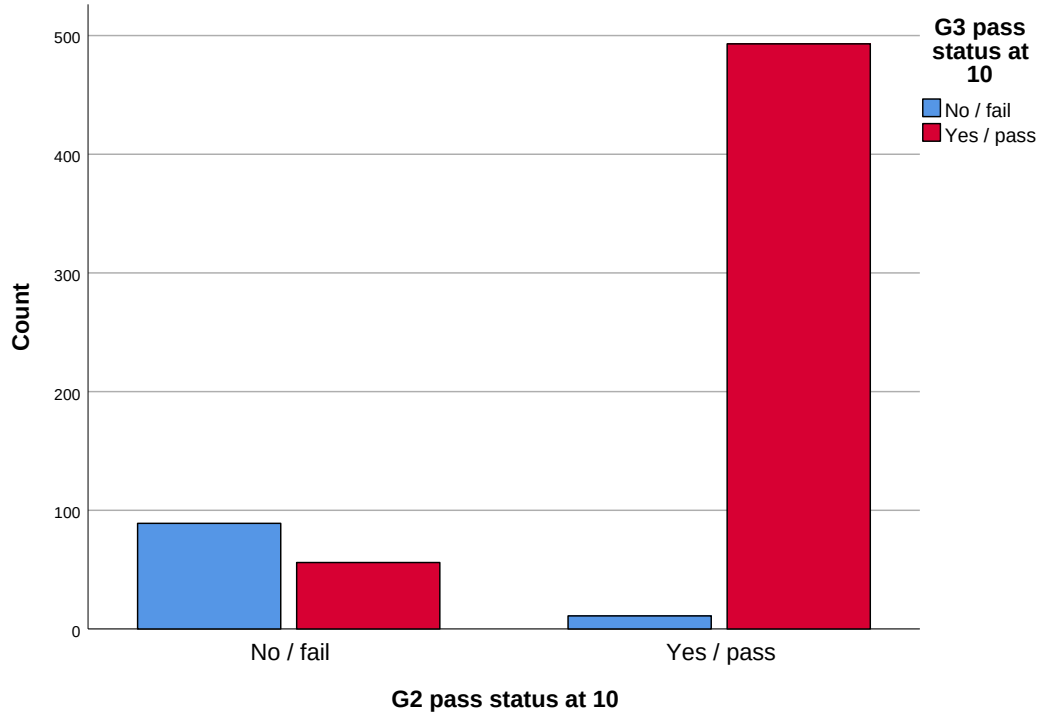
b. Using the asymptotic standard error assuming the null hypothesis.

Graph

Notes

Output Created		16-JUL-2026 14:42:17
Comments		
Input	Data	D:\DATA ANALYSIS\I Chi Square and Categorical Data Tests\Kappa Statistic\dataset.csv
	Active Dataset	KappaStatisticData
	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	00:00:00.56

Binary kappa with prevalence and bias diagnostics
Agreement between G2 and G3 pass classifications




```
================================================================================
======
BINARY KAPPA STATISTIC WITH PREVALENCE AND BIAS DIAGNOSTICS
================================================================================
======
Formula: kappa = (P_o-P_e)/(1-P_e); PABAK = 2P_o-1
Variables: G2 >= 10, G3 >= 10
bias_index = 0.06933744221879815
binary_kappa = 0.6655282489135034
observed_agreement = 0.8967642526964561
p_value = 8.34189307285141e-68
pabak = 0.7935285053929122
prevalence_index = 0.6224961479198767
Cross-check status: pass
================================================================================
======
```