

Chi-Square Test for Homogeneity

Chi-Square Test for Homogeneity Import and test-specific preparation

Dataset Name

Notes

Output Created		16-JUL-2026 14:40:57
Comments		
Input	Data	D:\DATA ANALYSIS\Chi Square and Categorical Data Tests\Chi Square Test for Homogeneity\dataset.csv
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		DATASET NAME ChiSquareTestforHomogeneityData.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.01

Warnings

The active dataset will replace the existing dataset named ChiSquareTestforHomogeneityData.

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
------------	---	------------

Chi-Square Test for Homogeneity
Import and test-specific preparation

guardian into guardian_n

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

Chi-square test for homogeneity

>Warning # 2004 on line 7117. Command name: SUBTITLE

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

Chi-square test for homogeneity
Compare reason distributions across the GP and MS school pop

Crosstabs

Notes

Output Created		16-JUL-2026 14:40:58
Comments		
Input	Data	D:\DATA ANALYSIS\Chi Square and Categorical Data Tests\Chi Square Test for Homogeneity\dataset.csv
	Active Dataset	ChiSquareTestforHomogeneityData
	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=school_n BY reason_n /FORMAT=AVALUE TABLES /STATISTICS=CHISQ PHI /CELLS=COUNT ROW COLUMN EXPECTED RESID SRESID /COUNT ROUND CELL.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02
	Dimensions Requested	2
	Cells Available	524245

[ChiSquareTestforHomogeneityData]

Chi-square test for homogeneity
Compare reason distributions across the GP and MS school pop

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
school_n * reason_n	649	100.0%	0	0.0%	649	100.0%

school_n * reason_n Crosstabulation

			reason_n				Total
			course	home	other	reputation	
school_n	GP	Count	167	115	27	114	423
		Expected Count	185.8	97.1	46.9	93.2	423.0
		% within school_n	39.5%	27.2%	6.4%	27.0%	100.0%
		% within reason_n	58.6%	77.2%	37.5%	79.7%	65.2%
		Residual	-18.8	17.9	-19.9	20.8	
		Standardized Residual	-1.4	1.8	-2.9	2.2	
	MS	Count	118	34	45	29	226
		Expected Count	99.2	51.9	25.1	49.8	226.0
		% within school_n	52.2%	15.0%	19.9%	12.8%	100.0%
		% within reason_n	41.4%	22.8%	62.5%	20.3%	34.8%
		Residual	18.8	-17.9	19.9	-20.8	
		Standardized Residual	1.9	-2.5	4.0	-2.9	
Total		Count	285	149	72	143	649
		Expected Count	285.0	149.0	72.0	143.0	649.0
		% within school_n	43.9%	23.0%	11.1%	22.0%	100.0%
		% within reason_n	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-square test for homogeneity
Compare reason distributions across the GP and MS school pop

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	52.524 ^a	3	.000
Likelihood Ratio	52.794	3	.000
Linear-by-Linear Association	7.806	1	.005
N of Valid Cases	649		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 25.07.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.284	.000
	Cramer's V	.284	.000
N of Valid Cases		649	

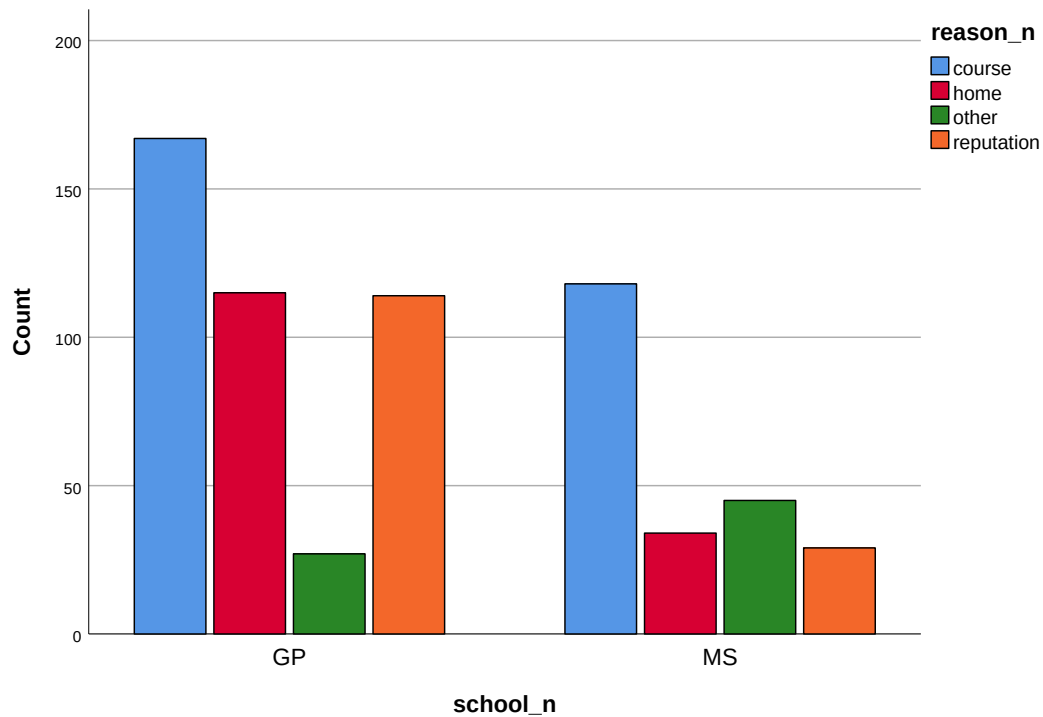
Graph

Chi-square test for homogeneity
Compare reason distributions across the GP and MS school pop

Notes

Output Created		16-JUL-2026 14:40:58
Comments		
Input	Data	D:\DATA ANALYSIS\ Chi Square and Categorical Data Tests\Chi Square Test for Homogeneity\dataset.csv
	Active Dataset	ChiSquareTestforHomogeneityData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Syntax		GRAPH /BAR(GROUPED) =COUNT BY school_n BY reason_n.
Resources	Processor Time	00:00:00.73
	Elapsed Time	00:00:00.42

Chi-square test for homogeneity
Compare reason distributions across the GP and MS school pop



```
=====
=====
CHI-SQUARE TEST FOR HOMOGENEITY
=====
=====
Formula:  $X^2 = \sum_{ij} (O_{ij} - E_{ij})^2 / E_{ij}$  under common category proportions.
Variables: school, reason
cells_expected_below_5 = 0
cramers_v = 0.2844829916304641
degrees_of_freedom = 3
minimum_expected_count = 25.07241910631741
p_value = 2.315976089451305e-11
statistic = 52.52394157003515
Cross-check status: pass
=====
=====
```