

The FREQ Procedure

Frequency
Expected
Deviation
Cell Chi-Square
Row Pct

observed frequency O
expected frequency E
deviation O-E
cell chi-square $(O-E)^2/E$
group (row) proportion

Table of treat by relapse			
treat	relapse		Total
	no	yes	
desip	14	10	24
	10	14	
	4	-4	
	1.6	1.1429	
	58.33	41.67	
lithium	6	18	24
	10	14	
	-4	4	
	1.6	1.1429	
	25.00	75.00	
Total	20	28	48

group 1

group 2

Statistics for Table of treat by relapse

Statistic	DF	Value	Prob
Chi-Square	1	5.4857	0.0192
Likelihood Ratio Chi-Square	1	5.6092	0.0179
Continuity Adj. Chi-Square	1	4.2000	0.0404
Mantel-Haenszel Chi-Square	1	5.3714	0.0205
Phi Coefficient		0.3381	
Contingency Coefficient		0.3203	
Cramer's V		0.3381	

P-value for
H₁: p_D not equal p_L
strong evidence that the
probability of relapse
depends on the treatment
p_D is different from p_L

Fisher's Exact Test	
Cell (1,1) Frequency (F)	14
Left-sided Pr <= F	0.9962
Right-sided Pr >= F	0.0196
Table Probability (P)	0.0158
Two-sided Pr <= P	0.0392

Sample Size = 48

The FREQ Procedure

Frequency Expected Deviation Cell Chi-Square Row Pct	Table of group by attitude				Total
	group	attitude			
	athletic	grades	popular		
observed frequency O expected frequency E deviation O-E cell chi-square (O-E)^2/E sample (row) proportion	rural	42	57	50	sample 1 n=149
		28.054	76.994	43.952	
		13.946	-19.99	6.0481	
		6.9322	5.192	0.8323	
		28.19	38.26	33.56	
	suburb	22	87	42	sample 2 n=151
		28.431	78.027	44.542	
		-6.431	8.9728	-2.542	
		1.4547	1.0318	0.1451	
		14.57	57.62	27.81	
	urban	26	103	49	sample 3 n=178
		33.515	91.979	52.506	
		-7.515	11.021	-3.506	
		1.6849	1.3205	0.2341	
		14.61	57.87	27.53	
	Total	90	247	141	478

Statistics for Table of group by attitude

Statistic	DF	Value	Prob
Chi-Square	4	18.8276	0.0008
Likelihood Ratio Chi-Square	4	18.5706	0.0010
Mantel-Haenszel Chi-Square	1	0.9217	0.3370
Phi Coefficient		0.1985	
Contingency Coefficient		0.1947	
Cramer's V		0.1403	

Sample Size = 478

The null hypothesis is
 H_0 : the ratio of the three proportions
 $p_A:p_G:p_P$ is the same for all three locations

A: athletic
 G: grades
 P: popularity

The small P-values shows strong evidence that this is not true. The relationship among these three proportions varies among the three locations/populations

The FREQ Procedure

Frequency
Expected
Cell Chi-Square
Percent
Row Pct
Col Pct

Table of type by group					
type	group				Total
	H	HC	HW	W	
A	2490	2368	4671	50008	59537
	1916.7	2210.2	4097	51313	
	171.45	11.265	80.419	33.191	41.04
	1.72	1.63	3.22	34.47	
	4.18	3.98	7.85	83.99	
	53.32	43.97	46.79	40.00	
AB	99	243	236	5001	5579
	179.61	207.11	383.92	4808.4	
	36.179	6.2189	56.989	7.7177	3.85
	0.07	0.17	0.16	3.45	
	1.77	4.36	4.23	89.64	
	2.12	4.51	2.36	4.00	
B	178	568	606	16252	17604
	566.75	653.52	1211.4	15172	
	266.65	11.191	302.56	76.83	12.14
	0.12	0.39	0.42	11.20	
	1.01	3.23	3.44	92.32	
	3.81	10.55	6.07	13.00	
O	1903	2206	4469	53759	62337
	2006.9	2314.2	4289.7	53726	
	5.3783	5.055	7.4962	0.0199	42.97
	1.31	1.52	3.08	37.06	
	3.05	3.54	7.17	86.24	
	40.75	40.97	44.77	43.00	
Total	4670	5385	9982	125020	145057
	3.22	3.71	6.88	86.19	100.00

Here we have a sample of 145,057 individuals cross-classified by ethnicity: H, HC, HW, W and blood type: A, AB, B, O

The null hypothesis for the chi-square test of independence states that the classification of an individual by ethnicity is independent of the classification of the person by blood type. In other words, the blood type distribution (classification) does not depend on ethnicity.

Statistics for Table of type by group

there is strong evidence against the null hypothesis

Statistic	DF	Value	Prob
Chi-Square	9	1078.6036	<.0001
Likelihood Ratio Chi-Square	9	1242.1787	<.0001
Mantel-Haenszel Chi-Square	1	219.4307	<.0001
Phi Coefficient		0.0862	
Contingency Coefficient		0.0859	
Cramer's V		0.0498	

Sample Size = 145057