Anthony Espinoza

EDG500

4/18/23

SPSS Chapter 16

Chapter 16 Exercise

Chi-Square Test

Frequencies

Candidate

	Observed N	Expected N	Residual
Jane Smith	11	10.0	1.0
John Doe	9	10.0	-1.0
Total	20		

Test Statistics

	Candidate
Chi-Square	.200[a]
df	1
Asymp. Sig.	.655

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.0.

Figure 16.8 Raw SPSS Statistics output for the data in Table 16.1 on page 168.

Chi-Square Test

Frequencies

Color

	Observed N	Expected N	Residual
Tan	5	6.7	-1.7
Blue	12	6.7	5.3
Brown	3	6.7	-3.7
Total	20		

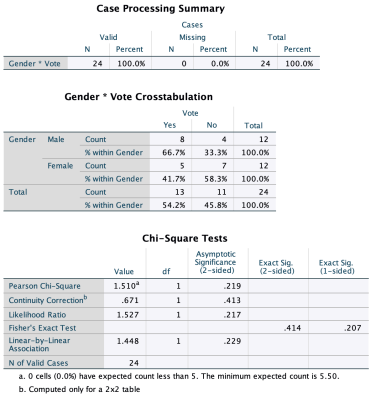
Test Statistics

	Color
Chi-Square	6.700[a]
df	2
Asymp. Sig.	.035

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 6.7.

Figure 16.9 SPSS Statistics output for Color Preference for School Uniforms in Table 16.2.

A) The observed value *n* for Tan is 5.
B) The observed value *n* for Blue is 12.
C) The observed value *n* for Brown is 3.
D) The value of chi square is 6.700[a].
E) The associated probability is .035.
F) The Asymp. Sig. is statistically significant at the .05 level.
G) Blue (*n* =12) was favored over Tan (*n* = 5) and Brown (*n* = 3). The difference is statistically significant at the .05 level ($x^2 = 6.700$, *df* = 2). Thus the favorite color for uniforms seems to be Blue.



Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Vote	24	100.0%	0	0.0%	24	100.0%

Gender * Vote Crosstabulation

			Vote		
			Yes	No	Total
Gender	Male	Count	8	4	12
		% within Gender	66.7%	33.3%	100.0%
	Female	Count	5	7	12
		% within Gender	41.7%	58.3%	100.0%
Total		Count	13	11	24
		% within Gender	54.2%	45.8%	100.0%

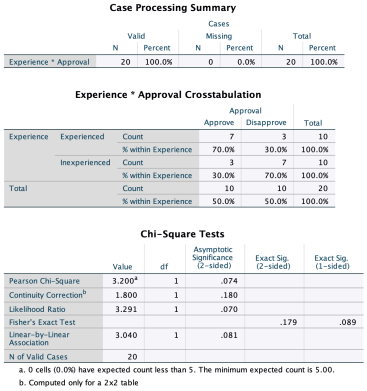
Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.510[a]	1	.219		
Continuity Correction[b]	.671	1	.413		
Likelihood Ratio	1.527	1	.217		
Fisher's Exact Test				.414	.207
Linear-by-Linear Association	1.448	1	.229		
N of Valid Cases	24				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.50.

b. Computed only for a 2x2 table

Figure 7.11. SPSS Statistics output for chi-square test of independence.



Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Experience * Approval	20	100.0%	0	0.0%	20	100.0%

Experience * Approval Crosstabulation

			Approval		
			Approve	Disapprove	Total
Experience	Experienced	Count	7	3	10
		% within Experience	70.0%	30.0%	100.0%
	Inexperienced	Count	3	7	10
		% within Experience	30.0%	70.0%	100.0%
Total		Count	10	10	20
		% within Experience	50.0%	50.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.200[a]	1	.074		
Continuity Correction[b]	1.800	1	.180		
Likelihood Ratio	3.291	1	.070		
Fisher's Exact Test				.179	.089
Linear-by-Linear Association	3.040	1	.081		
N of Valid Cases	20				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.00.

b. Computed only for a 2x2 table

Figure 7.12 SPSS Statistics output for chi-square test of independence of experience and approval.

A) Seven experienced teachers approved.
B) Three inexperienced teachers approved.
C) The value of chi-square is 3.200.
D) Associate probability is .074.
E) The results are not statistically significant at the .05 level.
F)

Teachers with experience were more likely than inexperienced teachers to approve the proposal as shown in Table 17.3. However the relationship between experience and approval is not statistically significant at the .05 level. ($x^2 = 3.200$, $df = 1$). Thus, experience and approval are independent of each other.

Table 17.3
Cross tabulations for Experience and Approval on the new math curriculum.

	Approval		
	Approve	Disapprove	Total
Experience			
Experienced	7 (70.0%)	3 (30.0%)	100%
Inexperienced	3 (30.0%)	7 (70.0%)	100%
Total	10 (50.0%)	10 (50.0%)	100%