

Stat 296 Fall 2007

Fisher's Exact Test for 2×2 Contingency Tables

```
data salamander;
input survival colour count @@;
datalines;
1 1 65 1 2 23
2 1 98 2 2 18
;
proc freq data=salamander;
weight count;
exact chisq;
tables survival*colour;
run;
```

The FREQ Procedure
Table of survival by colour

survival	colour		
Frequency			
Percent			
Row Pct			
Col Pct	1	2	Total
	1	2	
	65	23	88
	31.86	11.27	43.14
	73.86	26.14	
	39.88	56.10	
Total	163	41	204
	79.90	20.10	100.00

(Continued)

The FREQ Procedure
 Table of survival by colour

survival	colour		Total
Frequency			
Percent			
Row Pct			
Col Pct	1	2	
2	98	18	116
	48.04	8.82	56.86
	84.48	15.52	
	60.12	43.90	
Total	163	41	204
	79.90	20.10	100.00

The FREQ Procedure
 Statistics for Table of survival by colour

Statistic	DF	Value	Prob
Chi-Square	1	3.5138	0.0609
Likelihood Ratio Chi-Square	1	3.4834	0.0620
Continuity Adj. Chi-Square	1	2.8836	0.0895
Mantel-Haenszel Chi-Square	1	3.4966	0.0615
Phi Coefficient		-0.1312	
Contingency Coefficient		0.1301	
Cramer's V		-0.1312	

Pearson Chi-Square Test

Chi-Square	3.5138
DF	1
Asymptotic Pr > ChiSq	0.0609
Exact Pr >= ChiSq	0.0775

The FREQ Procedure
Statistics for Table of survival by colour

Likelihood Ratio Chi-Square Test

Chi-Square	3.4834
DF	1
Asymptotic Pr > ChiSq	0.0620
Exact Pr >= ChiSq	0.0775

Mantel-Haenszel Chi-Square Test

Chi-Square	3.4966
DF	1
Asymptotic Pr > ChiSq	0.0615
Exact Pr >= ChiSq	0.0775

The FREQ Procedure
Statistics for Table of survival by colour

Fisher's Exact Test

Cell (1,1) Frequency (F)	65
Left-sided Pr <= F	0.0452
Right-sided Pr >= F	0.9795
Table Probability (P)	0.0247
Two-sided Pr <= P	0.0775

Sample Size = 204