More Examples of Two-Way Contingency Tables

Example: Suicides in the United States

Here is a pleasant little two-way table that describes all suicides committed in 1992 (Moore, p. 296, #5.9).

	Males	Females	Total
Firearms	15802	2367	18169
Poison	3262	2233	5495
Hanging	3822	856	4678
Other	1571	571	2142
Total	24457	6027	30484

- What is the most common method of suicide?
- What percent of females chose poison?
- What percent of poison takers were female?
- Are row or column percents more appropriate?
- Construct the expected table and standardized residuals and comment on the association between the variables.

Row Percents and Column Percents

Row pcts

	Male	Female	Total
Firearms	86.97%	13.03%	100%
Poison	59.36%	40.64%	100%
Hanging	81.70%	18.30%	100%
Other	73.34%	26.66%	100%
Total	80.23%	19.77%	100%

Col pcts

	Male	Female	Total
Firearms	64.61%	39.27%	59.60%
Poison	13.34%	37.05%	18.03%
Hanging	15.63%	14.20%	15.35%
Other	6.42%	9.47%	7.03%
Total	100.00%	100.00%	100.00%

Impressions of Association?

Observed and Expected Table

Observed Table

	Male	Female
Firearms	15802	2367
Poison	3262	2233
Hanging	3822	856
Other	1571	571

Expected Table

	Male	Female
Firearms	14576.80	3592.20
Poison	4408.58	1086.42
Hanging	3753.11	924.89
Other	1718.50	423.50

Standardized Residuals

Standardized Residuals

	Male	Female
Firearms	10.15	−20.44
Poison	−17.27	34.79
Hanging	1.12	−2.27
Other	−3.56	7.17

Example: Degrees in Foreign Languages

This table describes various degrees earned by men and women in foreign languages in 1992. (Moore, p. 296, #5.8).

	Bachelors	Masters	Doctorate	Total
Male	3990	971	378	5339
Female	9913	1955	472	12340
Total	13903	2926	850	17679

- What percent of females take Doctorate degrees?

- What percent of Masters degree holders were men?

- Are row or column percents more appropriate?

- Construct the expected table and standardized residuals and comment on the association between the variables.

Row Percents and Column Percents

Row pcts

	Bachelors	Masters	Doctorate	Total
Male	74.73%	18.19%	7.08%	100%
Female	80.33%	15.84%	3.82%	100%
Total	78.64%	16.55%	4.81%	100%

Col pcts

	Bachelors	Masters	Doctorate	Total
Male	28.7%	33.19%	44.47%	30.2%
Female	71.3%	66.81%	55.53%	69.8%
Total	100.0%	100.00%	100.00%	100.0%

Impressions of Association?

Observed and Expected Table

Observed Table

	Bachelors	Masters	Doctorate
Male	3990	971	378
Female	9913	1955	472

Expected Table

	Bachelors	Masters	Doctorate
Male	4198.66	883.64	256.7
Female	9704.34	2042.36	593.3

Standardized Residuals

Standardized Residuals

	Bachelors	Masters	Doctorate
Males	-3.22	2.94	7.57
Females	2.12	-1.93	-4.98