

## Chapter 9: cross tab

- 1) Cross tab is a method or organize the bivariate relation between two discrete variables (either they are nominal or ordinal variables)
- 2) Example

case	gender	vehicle	case	gender	Vehicle
1	M	Pickup	7	W	Pickup
2	M	Pickup	8	W	Pickup
3	M	Pickup	9	W	Others
4	W	Others	10	W	Others
5	W	Others	11	M	Others
6	M	Others	12	W	Others

Independent variable: gender (M/W); dependent variable: type of vehicles (pickup/others)

Type of vehicles	gender		Row Margins (RM)
	Men	Women	
Pickup	3 (60%)	2 (28.6%)	5
Other vehicles	2 (40%)	5 (71.4%)	7
Column margins (CM)	5	7	N = 12

- A) Always arrange independent variable groups across different columns
- B) Always arrange dependent variable groups across different rows
- C) RM is the summation of cell frequencies across different columns within a given row
- D) CM is the summation of cell frequencies across different rows within a given column
- E) Total number of cases (N) is the summation of either RMs or CMs.
- F) Cell percentage is calculated based on cell frequencies divided by its CM.

3) Exercise

The following is the raw data between gender (M/W) and smoker (Y/N), please convert them into a cross tab

case	gender	smoker	case	gender	smoker
1	M	Y	7	W	Y
2	M	Y	8	W	Y
3	M	N	9	W	Y
4	W	Y	10	W	Y
5	W	Y	11	W	N
6	M	N			

Smokers	gender		Row Margins (RM)
	Men	Women	
Yes	2 (50%)	6 (85.7%)	8
no	2 (50%)	1 (14.3%)	3
Column margins (CM)	4	7	N = 11