SOCI 212/2: STATISTICS I / FALL 2015

SIXTH ASSIGNMENT

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Speed								
Low				**High**			
Type of accident	**Alcohol consumption**				Alcohol consumption			
	Little	**Moderate**	**Much**	**All**	Little	Moderate	Much	All
Minor	40	22	10	72	38	25	11	74
Major	22	23	15	60	20	40	44	104
Total	62	45	25	132	58	65	55	178

1) Low Speed: Gamma= 0.33, For the low speed sample there is a moderate positive association: The more alcohol consumed, the more major the accident is.

High Speed: Gamma = 0.57, For the high speed sample there is a strong positive association: The higher more alcohol consumed, the more major the accident is.

2) Type of Accident by Alcohol Consumption, N= 310

Type of accident	**alcohol consumption**			
	little	moderate	much	all
minor	78	47	21	146
major	42	63	59	164
total	120	110	80	N=310

Explain: Gamma= CP-DP/CP+DP = 12289-4179/12289+4179 = +.49

-Gamma shows a moderate positive association. The more alcohol consumption, the more major accidents.

3) Zero-Order Relationship Between: Type of Accident (X) and Speed (Z), N=310

Speed	**alcohol consumption**			
	little	moderate	much	all
low	62	45	25	132
high	58	65	55	178
total	120	110	80	310

Gamma= CP-DP/CP+DP = (5685-9915)/(5685+9915= 4230/15600= +0.27

Gamma shows a moderate positive association. The more alcohol consumption, the higher the speed.

4)

Zero-order Relationship between Y and Z

Type of accident by speed, N=310

Type of Accident	High	Low	All
Minor	104	60	164
Major	74	72	146
	178	132	N=310

Q= CP-DP/CP + DP= (7488-4440)/(7488+4440)= 3048/11 928= +0.25

Yules Q shows a low positive association, the higher speed, the more likely a major accident will occur.

5) First-order association between X and Y:

Gamma(low)= +0.33

Gamma(high)= +0.57

Zero-order association between X and Y: Gamma= +0.49

According to the results of 1 and 2, we can confirm that putting speed as a control variable can influence the interaction effect in which one increased and the other decreased in comparison to the order, which makes Z a suppressor.