4/3/08

E1

Bump Hat Problem

X_1 : index weight / height (cont)

X_2 & X_3 dummy variables. There are 3 groups so we need $K-1$ dummy variables.

Make out the table for the different groups.
We wish the 'none' group to be the reference group, although we could redefine the dummy vars to make any group the reference.

Other As Ref group

group	X_2	X_3	
Hard	1	0	
Bump	0	1	
None	0	0	← This coding of all zeros makes this the ref group.

Suppose we wished the Bump to be the ref group.

group	X_2	X_3	
Hard	1	0	
Bump	0	0	makes this the ref group
None	0	1	

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E2

Model (cont, Dummys)

$$Y = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + \varepsilon$$

(X_2: H, X_3: B)

Hard Hat $\Rightarrow$ $Y = B_0 + B_1 X_1 + B_2(1) + B_3(0)$

$= (B_0 + B_2) + B_1 X_1$

Bump Hat $Y = B_0 + B_1 X_1 + B_2(0) + B_3(1)$

$= (B_0 + B_3) + B_1 X_1$

None $Y = B_0 + B_1 X_1 + B_2(0) + B_3(0)$

$= B_0 + B_1 X_1$

Just suppose: $B_0 = 2$, $B_1 = 3$, $B_2 = 4$, and $B_3 = 5$

$Y = 2 + 3X_1 + 4X_2 + 5X_3$