HW2

1585107 이지인

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fatality.data$dk18<- ifelse(mlda==18,1,0); head(fatality.data$dk18)

## [1] 0 0 0 0 0 0

fatality.data$dk19<- ifelse(mlda==19,1,0); head(fatality.data$dk19)

## [1] 1 1 1 1 0 0

fatality.data$dk20<- ifelse(mlda==20,1,0); head(fatality.data$dk20)

## [1] 0 0 0 0 0 0

fatality.data$inc2<- (log(perinc))\*\*2  
fatality.data$inc3<- (log(perinc))\*\*3  
fatality.data$mjcs= ifelse(jaild==1|comserd==1,1,0); head(fatality.data$mjcs)

## [1] 0 0 0 0 0 0

lm.fit4<-plm(mrall~beertax + dk18+dk19+dk20 + jaild+comserd+ vmiles+ unrate+ inc2+inc3, data=fatality.data, model="within", index=c("state","year"), effect="twoways")  
coeftest(lm.fit4, vcov=vcovHC) #beertax 통계적으로 유의하지 않다.

##   
## t test of coefficients:  
##   
## Estimate Std. Error t value Pr(>|t|)   
## beertax -2.3748e-05 2.2815e-05 -1.0409 0.2988   
## dk18 3.5078e-07 6.5721e-06 0.0534 0.9575   
## dk19 -1.1529e-06 4.1396e-06 -0.2785 0.7808   
## dk20 1.5391e-06 4.5648e-06 0.3372 0.7363   
## jaild 8.0678e-07 1.6538e-06 0.4878 0.6261   
## comserd 6.9964e-06 9.5858e-06 0.7299 0.4661   
## vmiles 8.4875e-10 5.2569e-10 1.6145 0.1076   
## unrate -4.9793e-06 1.2191e-06 -4.0845 5.820e-05 \*\*\*  
## inc2 2.8773e-04 5.6578e-05 5.0856 6.849e-07 \*\*\*  
## inc3 -1.9162e-05 3.8630e-06 -4.9605 1.243e-06 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

b1<-coeftest(lm.fit4, vcov=vcovHC)[1,1]; se\_b1<-coeftest(lm.fit4, vcov=vcovHC)[1,2]  
L<- b1-1.96\*se\_b1; U<- b1+1.96\*se\_b1  
CI\_lmfit4<-c(L,U); CI\_lmfit4 #신뢰구간이 0을 포함하고 있음

## [1] -6.846597e-05 2.096926e-05

lm.fit6<-plm(mrall~beertax + mlda+ mjcs+ vmiles + unrate+ inc2+inc3, data=fatality.data, model="within", index=c("state","year"),effect= "twoways")  
summary(lm.fit6)

## Twoways effects Within Model  
##   
## Call:  
## plm(formula = mrall ~ beertax + mlda + mjcs + vmiles + unrate +   
## inc2 + inc3, data = fatality.data, effect = "twoways", model = "within",   
## index = c("state", "year"))  
##   
## Unbalanced Panel: n = 48, T = 6-7, N = 335  
##   
## Residuals:  
## Min. 1st Qu. Median 3rd Qu. Max.   
## -4.0658e-05 -7.8350e-06 4.7339e-07 6.9964e-06 5.0814e-05   
##   
## Coefficients:  
## Estimate Std. Error t-value Pr(>|t|)   
## beertax -2.3694e-05 1.6455e-05 -1.4399 0.1510   
## mlda 2.3139e-07 1.6480e-06 0.1404 0.8884   
## mjcs 6.1832e-06 5.7276e-06 1.0795 0.2813   
## vmiles 8.9573e-10 8.3602e-10 1.0714 0.2849   
## unrate -4.9848e-06 1.0907e-06 -4.5704 7.374e-06 \*\*\*  
## inc2 2.8966e-04 5.2838e-05 5.4821 9.543e-08 \*\*\*  
## inc3 -1.9305e-05 3.6304e-06 -5.3175 2.186e-07 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Total Sum of Squares: 1.0289e-07  
## Residual Sum of Squares: 6.0359e-08  
## R-Squared: 0.41339  
## Adj. R-Squared: 0.28493  
## F-statistic: 27.5839 on 7 and 274 DF, p-value: < 2.22e-16

coeftest(lm.fit6, vcov=vcovHC) #beertax 통계적으로 유의하지 않다.

##   
## t test of coefficients:  
##   
## Estimate Std. Error t value Pr(>|t|)   
## beertax -2.3694e-05 2.3653e-05 -1.0017 0.31736   
## mlda 2.3139e-07 1.8262e-06 0.1267 0.89926   
## mjcs 6.1832e-06 7.6175e-06 0.8117 0.41767   
## vmiles 8.9573e-10 5.3726e-10 1.6672 0.09661 .   
## unrate -4.9848e-06 1.2262e-06 -4.0652 6.275e-05 \*\*\*  
## inc2 2.8966e-04 5.7974e-05 4.9964 1.042e-06 \*\*\*  
## inc3 -1.9305e-05 3.9679e-06 -4.8652 1.931e-06 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

b2<-coeftest(lm.fit6, vcov=vcovHC)[1,1]; se\_b2<-coeftest(lm.fit6, vcov=vcovHC)[1,2]  
LL<- b2-1.96\*se\_b2; UU<- b2+1.96\*se\_b2  
CI\_lmfit6<-c(LL,UU); CI\_lmfit6 #0을 포함

## [1] -7.005408e-05 2.266627e-05



Note that the echo = FALSE parameter was added to the code chunk to prevent printing of the R code that generated the plot.