R-CODE FOR THE INVESTIGATION OF THE PERFORMANCE OF QIC IN VARIABLE SELECTION

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```
library(SimCorMultRes)
N=1000#Number of Simulation Runs
K=20 # Sample Size
#K=30
#K=50
#K=100
#K=200
clsize<-3 #Number of Measurements per subject
#clsize<-6
#clsize<-9
intercepts<-0.5
betas<-c(-0.5, -0.5, 0, 0) #regression coefficients
 cor.matrix<-toeplitz(c(1,0.5,0.25))
qic1 <- qic2  <- qic3<- qic4  <- qic5<- qic6  <- qic7 <- qic8 <- est.qic <-numeric(0)
min.qic <-rep(0,8)
p <- c(3,4,4,5,5,6,6,7)
for (j in 1:N){
 x1<-rep(rnorm(n),each=clsize)
 x2<-rep(rbinom(n,2,0.5),each=clsize)
 x3<-rep(runif(n,0,1),each=clsize)
 x4<-rep(runif(n,0,1),each=clsize)
 corres<-rbin(clsize=clsize,intercepts=intercepts,betas=betas,
 xformula=~x1+x2+x3+x4,cor.matrix=cor.matrix,link="probit")
 library(geepack)
  library(MESS)
 library(MuMIn)
 m1<-geeglm(y~x1+x2+x3+x4,family=binomial(link="logit"),id=id, data=corres$simdata)
 m2<-geeglm(y~x1+x2+x3,family=binomial(link="logit"),id=id, data=corres$simdata)
m3<-geeglm(y~x1+x2+x4,family=binomial(link="logit"),id=id, data=corres$simdata)
m4<-geeglm(y~x1+x3+x4,family=binomial(link="logit"),id=id, data=corres$simdata)
 m5<-geeglm(y~x1+x2,family=binomial(link="logit"),id=id, data=corres$simdata)
 m6<-geeglm(y~x1+x3,family=binomial(link="logit"),id=id, data=corres$simdata)
 m7<-geeglm(y~x1+x4,family=binomial(link="logit"),id=id, data=corres$simdata)
m8<-geeglm(y~x1,family=binomial(link="logit"),id=id, data=corres$simdata)
qic1<-QIC(m1)
qic2<-QIC(m2)
qic3<-QIC(m3)
qic4<-QIC(m4)
qic5<-QIC(m5)
qic6<-QIC(m6)
qic7<-QIC(m7)
qic8<-QIC(m8)
qic<-c(qic1,qic2,qic3, qic4, qic5,qic6,qic7, qic8)
print( "QIC");print(qic)
 id3=which.min(qic)
 min.qic[id3]=min.qic[id3]+1
print(j)
 }
```