```
*clear data
clear
*import data
import delimited C:\Users\Gtjohnso\Documents\cell_phone.csv
*begin log
log using "C:\Users\Gtjohnso\Documents\pset 8.smcl", replace

*Question 6
mean text_ban

*Model 1
reg numberofdeaths cell_subscription population total_miles_driven
text_ban cell_ban
vif

*create new logs
gen ln_death = log(numberofdeaths)
gen ln_miles = log(total_miles_driven)

*model 2
reg ln_death urban_percent ln_miles text_ban cell_ban

*create new variables
gen pop_less3 = population < 30
gen pop_3_6 = population >= 30 & population <= 60
gen pop_more6 = population > 60

*list variables
list state population pop_less3 pop_3_6 pop_more6

*death per 100k
g Ndeath100k= numberofdeaths/ population

*model 3
reg Ndeath100k pop_less3 pop_3_6 pop_more6




*close log
log close
{smcl}
{com}{sf}{ul off}{txt}{.-}
      name:  {res}<unnamed>
       {txt}log:  {res}C:\Users\Gtjohnso\Documents\pset 8.smcl
  {txt}log type:  {res}smcl
 {txt}opened on:  {res}15 Apr 2024, 21:49:39
{txt}
{com}.
. *Question 6
. mean text_ban
{res}
{txt}Mean estimation{col 35}Number of obs{col 51}= {res}        50
```

```
{txt}{hline 13}{c TT}{hline 11}{hline 11}{hline 14}{hline 12}
{col 14}{c |}       Mean{col 26}   Std. Err.{col 38}     [95% Con{col
51}f. Interval]
{hline 13}{c +}{hline 11}{hline 11}{hline 14}{hline 12}
{space 4}text_ban {c |}{col 14}{res}{space 2}      .68-165.2344{col
26}{space 2} .0666395{col 37}{space 5}  .546083{col 51}{space 3}  .813917
{txt}{hline 13}{c BT}{hline 11}{hline 11}{hline 14}{hline 12}

{com}.
. *Model 1
. reg numberofdeaths cell_subscription population total_miles_driven
text_ban cell_ban

{txt}      Source {c |}       SS           df       MS      Number of obs
={res}        50
{txt}{hline 13}{c +}{hline 34}   F(5, 44)        = {res}   140.03
{txt}       Model {c |} {res} 21065698.5         5  4213139.71
{txt}Prob > F        ={res}    0.0000
{txt}    Residual {c |} {res} 1323801.15        44  30086.3898   {txt}R-
squared       ={res}    0.9409
{txt}{hline 13}{c +}{hline 34}   Adj R-squared   ={res}    0.9342
{txt}       Total {c |} {res} 22389499.7        49  456928.565
{txt}Root MSE        =   {res} 173.45

{txt}{hline 19}{c TT}{hline 11}{hline 11}{hline 9}{hline 8}{hline
13}{hline 12}
{col 1}    numberofdeaths{col 20}{c |}      Coef.{col 32}   Std. Err.{col
44}      t{col 52}   P>|t|{col 60}     [95% Con{col 73}f. Interval]
{hline 19}{c +}{hline 11}{hline 11}{hline 9}{hline 8}{hline 13}{hline 12}
{space 1}cell_subscription {c |}{col 20}{res}{space 2} .0273333{col
32}{space 2} .0687747{col 43}{space 1}    0.40{col 52}{space 3}0.693{col
60}{space 4}-.1112729{col 73}{space 3} .1659396
{txt}{space 8}population {c |}{col 20}{res}{space 2}-7.225724{col
32}{space 2} 7.951626{col 43}{space 1}   -0.91{col 52}{space 3}0.368{col
60}{space 4}-23.25117{col 73}{space 3} 8.799725
{txt}total_miles_driven {c |}{col 20}{res}{space 2}  .015885{col
32}{space 2} .0029323{col 43}{space 1}    5.42{col 52}{space 3}0.000{col
60}{space 4} .0099754{col 73}{space 3} .0217945
{txt}{space 10}text_ban {c |}{col 20}{res}{space 2}-165.2344{col
32}{space 2} 56.94956{col 43}{space 1}   -2.90{col 52}{space 3}0.006{col
60}{space 4}-280.0087{col 73}{space 3}-50.46008
{txt}{space 10}cell_ban {c |}{col 20}{res}{space 2}-100.7896{col
32}{space 2}  73.3285{col 43}{space 1}   -1.37{col 52}{space 3}0.176{col
60}{space 4}-248.5735{col 73}{space 3} 46.99424
{txt}{space 13}_cons {c |}{col 20}{res}{space 2}  150.098{col 32}{space
2} 54.70508{col 43}{space 1}    2.74{col 52}{space 3}0.009{col 60}{space
4} 39.84715{col 73}{space 3} 260.3488
{txt}{hline 19}{c BT}{hline 11}{hline 11}{hline 9}{hline 8}{hline
13}{hline 12}
{res}{txt}
{com}. vif

{txt}    Variable {c |}       VIF       1/VIF
{hline 13}{c +}{hline 22}
```

```
{space 2}population {c |} {res}    504.63    0.001982
{txt}cell_subsc~n {c |} {res}   348.84    0.002867
{txt}total_mile~n {c |} {res}    51.25    0.019513
{txt}{space 4}cell_ban {c |} {res}     1.43    0.699414
{txt}{space 4}text_ban {c |} {res}     1.17    0.852630
{txt}{hline 13}{c +}{hline 22}
    Mean VIF {c |} {res}   181.46
{txt}
{com}.
. *create new logs
. gen ln_death = log(numberofdeaths)
{txt}
{com}. gen ln_miles = log(total_miles_driven)
{txt}
{com}.
. *model 2
. reg ln_death urban_percent ln_miles text_ban cell_ban

{txt}      Source {c |}       SS           df       MS      Number of obs
={res}        50
{txt}{hline 13}{c +}{hline 34}   F(4, 45)        = {res}   333.83
{txt}       Model {c |} {res} 44.0258367         4  11.0064592
{txt}Prob > F        ={res}    0.0000
{txt}    Residual {c |} {res} 1.48367846        45  .032970632   {txt}R-
squared       ={res}    0.9674
{txt}{hline 13}{c +}{hline 34}   Adj R-squared   ={res}    0.9645
{txt}       Total {c |} {res} 45.5095151        49  .928765615
{txt}Root MSE        =   {res} .18158

{txt}{hline 14}{c TT}{hline 11}{hline 11}{hline 9}{hline 8}{hline
13}{hline 12}
{col 1}     ln_death{col 15}{c |}      Coef.{col 27}   Std. Err.{col 39}
t{col 47}   P>|t|{col 55}     [95% Con{col 68}f. Interval]
{hline 14}{c +}{hline 11}{hline 11}{hline 9}{hline 8}{hline 13}{hline 12}
urban_percent {c |}{col 15}{res}{space 2}-.0060858{col 27}{space 2}
.0015181{col 38}{space 1}   -4.01{col 47}{space 3}0.000{col 55}{space 4}-
.0091435{col 68}{space 3}-.0030281
{txt}{space 5}ln_miles {c |}{col 15}{res}{space 2} .9920275{col 27}{space
2}   .02889{col 38}{space 1}   34.34{col 47}{space 3}0.000{col 55}{space
4}   .93384{col 68}{space 3} 1.050215
{txt}{space 5}text_ban {c |}{col 15}{res}{space 2}-.2073445{col 27}{space
2} .0593075{col 38}{space 1}   -3.50{col 47}{space 3}0.001{col 55}{space
4}-.3267958{col 68}{space 3}-.0878932
{txt}{space 5}cell_ban {c |}{col 15}{res}{space 2}-.1042659{col 27}{space
2} .0716885{col 38}{space 1}   -1.45{col 47}{space 3}0.153{col 55}{space
4} -.248654{col 68}{space 3} .0401221
{txt}{space 8}_cons {c |}{col 15}{res}{space 2}-4.013374{col 27}{space 2}
.2970947{col 38}{space 1}  -13.51{col 47}{space 3}0.000{col 55}{space 4}-
4.611753{col 68}{space 3}-3.414994
{txt}{hline 14}{c BT}{hline 11}{hline 11}{hline 9}{hline 8}{hline
13}{hline 12}
{res}{txt}
{com}.
. *create new variables
```

```
. gen pop_less3 = population < 30
{txt}
{com}. gen pop_3_6 = population >= 30 & population <= 60
{txt}
{com}. gen pop_more6 = population > 60
{txt}
{com}.
. *list variables
. list state population pop_less3 pop_3_6 pop_more6
{txt}
     {c TLC}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c TRC}
     {c |} {res}         state   popula~n   pop_le~3   pop_3_6   pop_mo~6
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
  1. {c |} {res}       Alabama   48.22023          0         1          0
{txt}{c |}
  2. {c |} {res}        Alaska    7.31449          1         0          0
{txt}{c |}
  3. {c |} {res}       Arizona   65.53255          0         0          1
{txt}{c |}
  4. {c |} {res}      Arkansas   29.49131          1         0          0
{txt}{c |}
  5. {c |} {res}    California   380.4143          0         0          1
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
  6. {c |} {res}      Colorado   51.87582          0         1          0
{txt}{c |}
  7. {c |} {res}   Connecticut   35.90347          0         1          0
{txt}{c |}
  8. {c |} {res}      Delaware    9.17092          1         0          0
{txt}{c |}
  9. {c |} {res}       Florida   193.1757          0         0          1
{txt}{c |}
 10. {c |} {res}       Georgia   99.19945          0         0          1
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
 11. {c |} {res}        Hawaii   13.92313          1         0          0
{txt}{c |}
 12. {c |} {res}         Idaho   15.95728          1         0          0
{txt}{c |}
 13. {c |} {res}      Illinois   128.7525          0         0          1
{txt}{c |}
 14. {c |} {res}       Indiana   65.37334          0         0          1
{txt}{c |}
 15. {c |} {res}          Iowa   30.74186          0         1          0
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
 16. {c |} {res}        Kansas   28.85905          1         0          0
{txt}{c |}
```

```
 17. {c |} {res}      Kentucky   43.80415          0         1          0
{txt}{c |}
 18. {c |} {res}     Louisiana   46.01893          0         1          0
{txt}{c |}
 19. {c |} {res}         Maine   13.29192          1         0          0
{txt}{c |}
 20. {c |} {res}      Maryland   58.84563          0         1          0
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
 21. {c |} {res} Massachusetts   66.46144          0         0          1
{txt}{c |}
 22. {c |} {res}      Michigan    98.8336          0         0          1
{txt}{c |}
 23. {c |} {res}     Minnesota   53.79139          0         1          0
{txt}{c |}
 24. {c |} {res}   Mississippi   29.84926          1         0          0
{txt}{c |}
 25. {c |} {res}      Missouri   60.21988          0         0          1
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
 26. {c |} {res}       Montana   10.05141          1         0          0
{txt}{c |}
 27. {c |} {res}      Nebraska   18.55525          1         0          0
{txt}{c |}
 28. {c |} {res}        Nevada   27.58931          1         0          0
{txt}{c |}
 29. {c |} {res} New Hampshire   13.20718          1         0          0
{txt}{c |}
 30. {c |} {res}    New Jersey    88.6459          0         0          1
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
 31. {c |} {res}    New Mexico   20.85538          1         0          0
{txt}{c |}
 32. {c |} {res}      New York   195.7026          0         0          1
{txt}{c |}
 33. {c |} {res}North Carolina   97.52073          0         0          1
{txt}{c |}
 34. {c |} {res}  North Dakota    6.99628          1         0          0
{txt}{c |}
 35. {c |} {res}          Ohio   115.4423          0         0          1
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
 36. {c |} {res}      Oklahoma    38.1482          0         1          0
{txt}{c |}
 37. {c |} {res}        Oregon   38.99353          0         1          0
{txt}{c |}
 38. {c |} {res}  Pennsylvania   127.6354          0         0          1
{txt}{c |}
 39. {c |} {res}  Rhode Island   10.50292          1         0          0
{txt}{c |}
```

```
 40. {c |} {res}South Carolina   47.23723          0         1          0
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
 41. {c |} {res}  South Dakota    8.33354          1         0          0
{txt}{c |}
 42. {c |} {res}     Tennessee   64.56243          0         0          1
{txt}{c |}
 43. {c |} {res}         Texas    260.592          0         0          1
{txt}{c |}
 44. {c |} {res}          Utah   28.55287          1         0          0
{txt}{c |}
 45. {c |} {res}       Vermont    6.26011          1         0          0
{txt}{c |}
     {c LT}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c RT}
 46. {c |} {res}      Virginia   81.85867          0         0          1
{txt}{c |}
 47. {c |} {res}    Washington   68.97012          0         0          1
{txt}{c |}
 48. {c |} {res} West Virginia   18.55413          1         0          0
{txt}{c |}
 49. {c |} {res}     Wisconsin   57.26398          0         1          0
{txt}{c |}
 50. {c |} {res}       Wyoming    5.76412          1         0          0
{txt}{c |}
     {c BLC}{hline 16}{c -}{hline 10}{c -}{hline 10}{c -}{hline 9}{c -
}{hline 10}{c BRC}

{com}.
. *death per 100k
. g Ndeath100k= numberofdeaths/ population
{txt}
{com}.
. *model 3
. reg Ndeath100k pop_less3 pop_3_6 pop_more6
{txt}note: pop_more6 omitted because of collinearity

      Source {c |}       SS           df       MS      Number of obs
={res}        50
{txt}{hline 13}{c +}{hline 34}   F(2, 47)        = {res}     3.42
{txt}       Model {c |} {res} 134.766621         2  67.3833107
{txt}Prob > F        ={res}    0.0412
{txt}    Residual {c |} {res} 927.371373        47  19.7313058   {txt}R-
squared       ={res}    0.1269
{txt}{hline 13}{c +}{hline 34}   Adj R-squared   ={res}    0.0897
{txt}       Total {c |} {res} 1062.13799        49  21.6762856
{txt}Root MSE        =   {res}  4.442

{txt}{hline 13}{c TT}{hline 11}{hline 11}{hline 9}{hline 8}{hline
13}{hline 12}
{col 1}  Ndeath100k{col 14}{c |}      Coef.{col 26}   Std. Err.{col 38}
t{col 46}   P>|t|{col 54}     [95% Con{col 67}f. Interval]
{hline 13}{c +}{hline 11}{hline 11}{hline 9}{hline 8}{hline 13}{hline 12}
```

```
{space 3}pop_less3 {c |}{col 14}{res}{space 2} 3.752704{col 26}{space 2}
1.443173{col 37}{space 1}    2.60{col 46}{space 3}0.012{col 54}{space 4}
.8494144{col 67}{space 3} 6.655994
{txt}{space 5}pop_3_6 {c |}{col 14}{res}{space 2} 2.359951{col 26}{space
2} 1.655433{col 37}{space 1}    1.43{col 46}{space 3}0.161{col 54}{space
4}-.9703514{col 67}{space 3} 5.690253
{txt}{space 3}pop_more6 {c |}{col 14}{res}{space 2}        0{col 26}{txt}
(omitted)
{space 7}_cons {c |}{col 14}{res}{space 2} 10.16615{col 26}{space 2}
1.046988{col 37}{space 1}    9.71{col 46}{space 3}0.000{col 54}{space 4}
8.059878{col 67}{space 3} 12.27241
{txt}{hline 13}{c BT}{hline 11}{hline 11}{hline 9}{hline 8}{hline
13}{hline 12}
{res}{txt}
{com}.
.
.
.
. *close log
. log close
      {txt}name:  {res}<unnamed>
       {txt}log:  {res}C:\Users\Gtjohnso\Documents\pset 8.smcl
  {txt}log type:  {res}smcl
 {txt}closed on:  {res}15 Apr 2024, 21:49:39
{txt}{.-}
{smcl}
{txt}{sf}{ul off}
```