List 04: Prediction

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sleep equation #1

For the dataset `sleep75` consider a regression **sleep totwrk, age, south, male, smsa, yngkid, marr**. Fitting results:

```
================================================
                        Dependent variable:
                    ---------------------------
                               sleep
------------------------------------------------
totwrk                       -0.169***
                              (0.018)

age                           2.689*
                              (1.469)

south                        101.568**
                             (41.837)

male                         87.669**
                             (35.104)

smsa                         -54.748*
                             (33.123)

yngkid                        -13.962
                             (50.341)

marr                          31.211
```

```
                            (42.233)

Constant                   3450.913***
                            (80.726)

-----------------------------------------------
Observations                  706
R2                            0.131
Adjusted R2                   0.123
Residual Std. Error           416.296
F Statistic                  15.064***
===============================================
Note:               *p<0.1; **p<0.05; ***p<0.01
```

Consider individuals with the following characteristics:

```
=======================================
  totwrk age south male smsa yngkid marr
---------------------------------------
1  2150  37    0    1    1     0     1
2  1950  28    1    1    0     1     0
3  2240  26    0    0    1     0     0
---------------------------------------
```

Evaluate the prediction of the dependent variable for each individual.
Round the answer to 2 decimal places.

The answer

```
============
  Prediction
------------
1  3250.68
2  3371.46
3  3086.98
------------
```

sleep equation #2

For the dataset `sleep75` consider a regression **sleep totwrk, age, age^2, south, male**.

Fitting results:

```
===============================================
                        Dependent variable:
                    ---------------------------
                              sleep
-----------------------------------------------
totwrk                      -0.167***
                             (0.018)

age                          -6.255
                            (11.191)
```

```
I(age2)                          0.109
                                (0.134)

south                          114.547***
                                (40.637)

male                            90.457***
                                (34.257)

Constant                       3613.995***
                                (218.433)

-----------------------------------------------
Observations                      706
R2                               0.128
Adjusted R2                      0.121
Residual Std. Error            416.558
F Statistic                   20.488***
===============================================
Note:               *p<0.1; **p<0.05; ***p<0.01
```

Consider individuals with the following characteristics:

```
=======================
  totwrk age south male
-----------------------
1  2160  32    1    0
2  1720  24    0    1
3  2390  44    0    1
-----------------------
```

Evaluate the prediction of the dependent variable for each individual.
Round the answer to 2 decimal places.

The answer

```
============
  Prediction
------------
1  3278.46
2  3329.25
3  3240.11
------------
```

wage equation #1

For the dataset `wage2` consider a regression **log(wage) age, IQ, south, married, urban**.

Fitting results:

```
===============================================
                        Dependent variable:
                    ---------------------------
                              log(wage)
```

```
-----------------------------------------------
age                           0.021***
                               (0.004)

IQ                            0.008***
                               (0.001)

south                         -0.099***
                               (0.027)

married                       0.201***
                               (0.040)

urban                         0.175***
                               (0.028)

Constant                      4.974***
                               (0.165)

-----------------------------------------------
Observations                     935
R2                              0.200
Adjusted R2                     0.195
Residual Std. Error             0.378
F Statistic                   46.346***
===============================================
Note:               *p<0.1; **p<0.05; ***p<0.01
```

Consider individuals with the following characteristics:

```
============================
  age IQ  south married urban
----------------------------
1 36  105   1      1      1
2 29  123   0      1      0
3 25  112   1      0      1
----------------------------
```

Evaluate the prediction of the dependent variable for each individual.
Round the answer to 2 decimal places.

The answer

```
============
  Prediction
------------
1   969.95
2   897.93
3   665.07
------------
```

wage equation #2

For the dataset `wage1` consider a regression **log(wage) exper, exper^2, female, married, smsa**.

Fitting results:

	Dependent variable:
	log(wage)
exper	0.037***
	(0.006)
I(exper2)	-0.001***
	(0.0001)
female	-0.363***
	(0.040)
married	0.144***
	(0.045)
smsa	0.273***
	(0.044)
Constant	1.250***
	(0.061)
Observations	526
R2	0.293
Adjusted R2	0.287
Residual Std. Error	0.449
F Statistic	43.168***
Note:	*p<0.1; **p<0.05; ***p<0.01

Consider individuals with the following characteristics:

	exper	female	married	smsa
1	5	1	1	1
2	26	0	0	1
3	38	1	1	0

Evaluate the prediction of the dependent variable for each individual.
Round the answer to 2 decimal places.

The answer

	Prediction
1	4.35
2	7.10

```
3    3.74
------------
```

output equation #1

For the dataset `Labour` consider a regression **log(output) log(capital), log(labour)**.

Fitting results:

```
================================================
                        Dependent variable:
                    ----------------------------
                            log(output)
------------------------------------------------
log(capital)                 0.208***
                              (0.017)

log(labour)                  0.715***
                              (0.023)

Constant                     -1.711***
                              (0.097)

------------------------------------------------
Observations                    569
R2                             0.838
Adjusted R2                    0.837
Residual Std. Error            0.478
F Statistic                 1462.078***
================================================
Note:               *p<0.1; **p<0.05; ***p<0.01
```

Consider firms with the following characteristics:

```
================
  capital labour
----------------
1  2.970    85
2 10.450    60
3  3.850   105
----------------
```

Evaluate the prediction of the dependent variable for each individual.
Round the answer to 2 decimal places.

The answer

```
============
  Prediction
------------
1    5.42
2    5.49
3    6.65
------------
```

output equation #2

For the dataset `Labour` consider a regression **log(output) log(capital), log(labour), log^2(capital), log^2(labour)**.

Fitting results:

```
================================================
                        Dependent variable:
                    ----------------------------
                              log(output)
------------------------------------------------
log(capital)                   0.183***
                               (0.017)

log(labour)                    0.515***
                               (0.083)

I(log(capital)2)               0.023***
                               (0.005)

I(log(labour)2)                0.020**
                               (0.010)

Constant                       -1.304***
                               (0.189)

------------------------------------------------
Observations                     569
R2                               0.855
Adjusted R2                      0.854
Residual Std. Error              0.452
F Statistic                   834.240***
================================================
Note:                *p<0.1; **p<0.05; ***p<0.01
```

Consider firms with the following characteristics:

```
================
  capital labour
----------------
1 22.140   407
2  7.320   197
3  0.670    31
----------------
```

Evaluate the prediction of the dependent variable for each individual.
Round the answer to 2 decimal places.

The answer

```
============
  Prediction
------------
1   27.37
```

```
2   11.46
3    1.89
------------
```