```
-----------------------------------------------------------------------------------------------------------------
---------------------------------------------------------------------------------------
      name:  <unnamed>
       log:  C:\Users\jlc15\Desktop\MECOFIN\2" Cuatrimestre\TFM\W - Ficheros STATA\Parte2_STATA.log

  log type:  text
 opened on:  17 Apr 2023, 18:50:17


.
. * 2. Estudiamos la distribución de la vble endógena Status
. tab status

    Status |     Freq.    Percent      Cum.
------------+-----------------------------------
         0 |      259     31.24      31.24
         1 |      570     68.76     100.00
------------+-----------------------------------
     Total |      829     100.00


.
. * 3. Estimamos vía logit el modelo original
. logit status gender education workexp programmingexp

Iteration 0:   log likelihood = -514.83131
Iteration 1:   log likelihood = -507.91144
Iteration 2:   log likelihood = -507.88834
Iteration 3:   log likelihood = -507.88834

Logistic regression                             Number of obs =    829
                                                LR chi2(4)    =  13.89
                                                Prob > chi2   = 0.0077
Log likelihood = -507.88834                     Pseudo R2     = 0.0135


--------------------------------------------------------------------------------
        status | Coefficient  Std. err.     z    P>|z|    [95% conf. interval]
---------------+----------------------------------------------------------------
        gender |  .1591773   .1775537    0.90   0.370   -.1888216    .5071762
     education |  .5065154   .1909185    2.65   0.008     .132322    .8807088
       workexp |  .2750172   .1619233    1.70   0.089   -.0423467    .5923811
programmingexp | -.2159291   .1653185   -1.31   0.192   -.5399475    .1080892
         _cons |  .2260515   .2446994    0.92   0.356   -.2535506    .7056535
--------------------------------------------------------------------------------


.
. * 4. Calculamos los marginales
. margins

Predictive margins                              Number of obs = 829
Model VCE: OIM

Expression: Pr(status), predict()


--------------------------------------------------------------------------------
             |            Delta-method
             |    Margin   std. err.     z    P>|z|    [95% conf. interval]
```

```
------------+----------------------------------------------------------------
      _cons |  .6875754  .0159602   43.08  0.000     .656294    .7188568
------------------------------------------------------------------------------
```

.
. * 5. Calculamos la matriz de acieros y errores
. predict status_pr
(option pr assumed; Pr(status))

. estat class

Logistic model for status

```
              -------- True --------
Classified |        D        ~D  |     Total
-----------+-------------------------+-----------
     +     |      570        259 |       829
     -     |        0          0 |         0
-----------+-------------------------+-----------
   Total   |      570        259 |       829
```

Classified + if predicted Pr(D) >= .5
True D defined as status != 0

```
--------------------------------------------------
Sensitivity                 Pr( +| D)  100.00%
Specificity                 Pr( -|~D)    0.00%
Positive predictive value   Pr( D| +)   68.76%
Negative predictive value   Pr(~D| -)      .%
--------------------------------------------------
False + rate for true ~D    Pr( +|~D)  100.00%
False - rate for true D     Pr( -| D)    0.00%
False + rate for classified +   Pr(~D| +)   31.24%
False - rate for classified -   Pr( D| -)      .%
--------------------------------------------------
Correctly classified                    68.76%
--------------------------------------------------
```

.
. * 6. Realizamos un análisis univariante básico de la columna de predicciones
. sum status_pr

```
    Variable |     Obs     Mean   Std. dev.     Min       Max
-------------+---------------------------------------------------
   status_pr |     829  .6875754   .0604164  .5025306  .7625591
```

.
. * 7. Realizamos un análisis univariante básico de la columna Status
. sum status

```
    Variable |     Obs     Mean   Std. dev.     Min       Max
-------------+---------------------------------------------------
      status |     829  .6875754   .4637617       0         1
```

.
. * Como resultado vemos que la media es la misma, por lo que aunque status_pr no

. * esté normalizada y Status sí, tienen un resultado muy parecido.
.
. * 8. Calculamos la capacidad predictiva con un límite de 0.5
. estat class, cutoff(0.5)

Logistic model for status

```
              -------- True --------
Classified |      D         ~D |     Total
-----------+------------------------+-----------
    +    |    570        259 |     829
    -    |     0          0 |      0
-----------+------------------------+-----------
  Total  |    570        259 |     829
```

Classified + if predicted Pr(D) >= .5
True D defined as status != 0

Sensitivity   Pr(+| D) 100.00%
Specificity   Pr(-|~D)   0.00%
Positive predictive value   Pr(D| +)   68.76%
Negative predictive value   Pr(~D| -)   .%

False + rate for true ~D   Pr(+|~D) 100.00%
False - rate for true D   Pr(-| D)   0.00%
False + rate for classified +   Pr(~D| +)   31.24%
False - rate for classified -   Pr(D| -)   .%

Correctly classified   68.76%

.
. * 9. Comprobamos que añadir matching no tiene sentido porque imita el comportamiento
. *   de Status.
. logit status gender education workexp programmingexp matching

note: matching != 0 predicts success perfectly;
      matching omitted and 487 obs not used.

note: education != 0 predicts failure perfectly;
      education omitted and 201 obs not used.

Iteration 0:   log likelihood = -95.505679
Iteration 1:   log likelihood = -94.646437
Iteration 2:   log likelihood = -94.645706
Iteration 3:   log likelihood = -94.645706

Logistic regression   Number of obs =   141
                                         LR chi2(3)   =   1.72
                                         Prob > chi2 = 0.6325
Log likelihood = -94.645706   Pseudo R2   = 0.0090

----
     status | Coefficient Std. err.   z   P>|z| [95% conf. interval]
------------+---

```
     gender |  -.3968064   .4666304    -0.85   0.395    -1.311385    .5177723
   education |        0  (omitted)
     workexp |  .3998252   .3822363     1.05   0.296    -.3493442    1.148995
programmingexp |  .0800877   .4181156    0.19   0.848    -.7394038    .8995792
    matching |        0  (omitted)
       _cons |   .493503   .4871577     1.01   0.311    -.4613086    1.448315
-------------------------------------------------------------------------------
```

.
. * 10. Comprobamos el comportamiento entre matching y status. Los resultados son muy buenos.
. tab matching status

```
           |       Status
  Matching |        0          1 |    Total
-----------+----------------------+----------
        0 |      259         83 |      342
        1 |        0        487 |      487
-----------+----------------------+----------
    Total |      259        570 |      829
```

.
. * 11. Se calculan los marginales de todas las vbles (comprobamos p-value y signo del coeficiente)
. margins, dydx(*)

Average marginal effects   Number of obs = 141
Model VCE: OIM

Expression: Pr(status), predict()
dy/dx wrt: gender education workexp programmingexp matching

```
-------------------------------------------------------------------------------
               |            Delta-method
               |     dy/dx   std. err.     z    P>|z|    [95% conf. interval]
---------------+---------------------------------------------------------------
     gender |  -.0949222   .1105392    -0.86   0.390    -.3115749    .1217306
   education |        0  (omitted)
     workexp |  .0956443   .0900663     1.06   0.288    -.0808825    .2721711
programmingexp |  .0191582   .0999705    0.19   0.848    -.1767803    .2150967
    matching |        0  (omitted)
-------------------------------------------------------------------------------
```

.
end of do-file

. exit, clear