

Estimation of Cox Regression Parameters Using COX.xlsm

Click the “COX” button and open the “COX” program. Starting from COX Menu almost exactly the same steps are taken as in the execution of the Gamel-Boag regressions (GAMEL.xlsm). The only differences are that in this program survival curves are not plotted, and only one regression is performed with no constant. This implies that the number of regression parameters is equal to the number of the predictor variables and you need not add 0 to the list of the variable numbers.

COX
COX REGRESSION ANALYSIS

COX Menu Click the following bar-buttons in order.

Step I **Select Data File**

Step II **Enter Survival Variable Numbers and Outcome Codes**

Step III **Select Predictor Variables**

Step IV **Estimate Parameters**

Step V **Results**

Step VI **Exit**

Clear Data

COX Menu

COX Menu shows six steps. From here on what you need to do is either fill the blank colorless cells with appropriate numbers or characters, or click a button.

Step IV Estimate parameters
When you click the Step IV button, estimation of the Cox parameters converges quickly to the maximum likelihood values.

To quit the COX program, click the Exit button.
To try from the first again, click the Clear Data button.

COX
Step I Select Data File. **COX Menu**

Survival Data File

Browse

Go to Step II

Step I Select data file

To run this application program, only a survival data file of cancer patients is used. Select the desired survival data file by clicking the Browse button.

Exercise
A data file of gastric cancer patients from our hospital (GC_TENRI.xlsm) is available.

COX
Step I Select Data File.

Survival Data File
GC_TENRI.xlsm

Browse

After operation

V. Results COX Menu Print Out

COX Menu

Print Out

| | |
|----------------------------------|----------------|
| Chi square = | 2.697938037 |
| Number of Iterations = | 5 |
| Sample Size = | 313 |
| Maximum Log Likelihood = | -1347.82723327 |
| Maximum Likelihood Ratio = | 2 |
| Chi square on 1DF = | 2.65186779 |
| R square = | -0.00049962 |
| Akaike's Information Criterion = | 2699.65446654 |

Step V Results

Cox regression explores the relationship between the survival of a patient and several explanatory variables. Using Newton-Raphson's method, the maximum likelihood estimates of the regression parameters are displayed.

Click the Print Out button which takes you to the Print dialog box.

[illegible]

VARIANCE-COVARIANCE MATRIX OF PARAMETERS

| | |
|------------|-----------|
| 0.03740753 | 0.0024117 |
| 0.0024117 | 0.0167346 |