

Logistic Regression in SPSS

Data: logdisea.sav

Goals:

- Examine relation between disease (binary response) and other explanatory variables such as age, socioeconomic status, sector, and savings account.
- Model checking
- Predict probability of getting disease and estimating the odds ratio

To perform the regression, click on **Analyze\Regression\Binary Logistic**. Place **disease** in the **Dependent** box and place **age**, **sciostat**, **sector** and **savings** in the **covariates** box. Click the **Categorical** button for creating indicator variables for the categorical variables. To obtain the the predicting probability of getting disease, click on the **Save** button at the bottom and then put a check in the **Probabilities** box of **Predicted Values** and click **Continue**. Also, click the **Option** button and check the **goodness of fit** box to see how well the model fit the data, and check the **CI for exp(B)** to obtain confidence interval for odds ratio. Hit **Continue** and then hit **OK**.

The independent variables (**age**, **sector**) are significant in predicting the dependent variable (**disease**) when the level of significance (P-value labeled with **Sig.** on the Output) is below 0.05.

Variables in the Equation

| | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I. for EXP(B) | |
|-------------|--------|------|--------|----|------|--------|-----------------------|-------|
| | | | | | | | Lower | Upper |
| Step 1 | | | | | | | | |
| AGE | .027 | .009 | 8.646 | 1 | .003 | 1.027 | 1.009 | 1.045 |
| SCIOSTAT | | | .439 | 2 | .803 | | | |
| SCIOSTAT(1) | -.278 | .434 | .409 | 1 | .522 | .757 | .323 | 1.775 |
| SCIOSTAT(2) | -.219 | .459 | .227 | 1 | .634 | .803 | .327 | 1.976 |
| SECTOR(1) | -1.234 | .357 | 11.970 | 1 | .001 | .291 | .145 | .586 |
| SAVINGS | .061 | .386 | .025 | 1 | .874 | 1.063 | .499 | 2.264 |
| Constant | -.814 | .452 | 3.246 | 1 | .072 | .443 | | |

a. Variable(s) entered on step 1: AGE, SCIOSTAT, SECTOR, SAVINGS.

Hosmer and Lemeshow Test

| Step | Chi-square | df | Sig. |
|------|------------|----|------|
| 1 | 10.853 | 8 | .210 |

Stepwise Regression

To perform stepwise regression for automatically selecting significant variables, check the **Method** drop down list and choose the desired one and click OK. SPSS will produce an output table to present the final model with a coefficients table.