Using PROC GENMOD to Fit a Poisson Regression Model

You can use PROC GENMOD to fit generalized linear models with a number of built-in link functions and probability distributions. You can also specify user-defined link functions and user-defined probability distributions.

The PLOTS= option in the PROC GENMOD statement controls the plots produced through ODS Graphics. If you specify plots=all, SAS produces all plots possible from the procedure, including diagnostic plots, DFBETA plots, standardized DFBETA plots, and plots of the residuals versus the observation number.

The CLASS statement names the classification variables to be used as explanatory variables in the analysis. The CLASS statement must precede the MODEL statement.

The MODEL statement specifies the response, or dependent variable, and the predictors, also known as the effects or explanatory variables. By default, the model includes an intercept term. You can use the NOINT option to remove the intercept. PROC GENMOD can accept responses that take two different forms. You can specify the response as a single variable where each observation is a row in the data. You can also specify the response using an event/trials syntax. This syntax is useful when each row of the data describes a collection of observations and a variable in the data reflects the number of observations in the collection (trials) and another variable reflects the number of these trials that had the item of interest or event.

You can use the ESTIMATE statement to obtain a test for a specified hypothesis concerning the model parameters. It can produce the ratio of the expected number of events for subjects in one category compared to another category, along with the 95% confidence limits. The ‘label’ option identifies the contrast on the output. A label is required for every contrast specified. Labels can be up to 20 characters and must be enclosed in single quotation marks. For additional details about the GENMOD procedure, click the Information button.

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