NDK_GLM_GOF

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- C/C++
- .Net

```
int __stdcall NDK_GLM_GOF(double *  Y,
                          size_t    nSize,
                          double ** X,
                          size_t    nVars,
                          double *  betas,
                          size_t    nBetas,
                          double    phi,
                          WORD      Lvk,
                          WORD      retType,
                          double *  retVal
                         )
```

Computes the log-likelihood ((LLF), Akaike Information Criterion (AIC) or other goodness of fit function of the GLM model.

Returns

status code of the operation

Return values

NDK_SUCCESS Operation successful

NDK_FAILED Operation unsuccessful. See **Macros** for full list.

Parameters

[in] **Y** is the response or the dependent variable data array (one dimensional array)

[in] **nSize** is the number of observations

[in] **X** is the independent variables data matrix, such that each column represents one variable

[in] **nVars** is the number of independent variables (or columns in X)

[in] **betas** are the coefficients of the GLM model (a one dimensional array)

[in] **nBetas** is the number of the coefficients in betas. Note that nBetas must be equal to nVars+1

[in] **phi** is the GLM dispersion parameter. Phi is only meaningful for Binomial (1/batch or trial size) and for Gaussian (variance).

- Binomial : phi = Reciprocal of the batch/trial size.
- Gaussian : phi = variance.
- Poisson : phi = 1.0

[in] **Lvk** is the link function that describes how the mean depends on the linear predictor (see **GLM_LINK_FUNC**).

1. Identity (default)
2. Log
3. Logit
4. Probit
5. Complementary log-log

`[in]` **retType** is a switch to select a fitness measure (see **GOODNESS_OF_FIT_FUNC**)
`[out]` **retVal** is the calculated goodness of fit measure.

Remarks

1. The underlying model is described **here**.
2. Missing values (i.e. #N/A!) are not allowed in either the response(Y) or the explanatory input arrays.
3. The number of rows in response variable (Y) must be equal to number of rows of the explanatory variables (X).
4. The number of betas must equal to the number of explanatory variables (i.e. columns in X) plus one for the intercept.
5. For GLM with Poisson distribution,
   - The values of response variable must be non-negative integers.
   - The value of the dispersion factor (Phi) must be either missing or equal to one.
6. For GLM with Binomial distribution,
   - The values of the response variable must be non-negative fraction between zero and one, inclusive.
   - The value of the dispersion factor (Phi) must be a positive fraction (greater than zero, and less than one).
7. For GLM with Gaussian distribution, the dispersion factor (Phi) value must be positive.

Requirements

Header	SFSDK.H
Library	SFSDK.LIB
DLL	SFSDK.DLL

References

* Hamilton, J .D.; Time Series Analysis , Princeton University Press (1994), ISBN 0-691-04289-6

* Tsay, Ruey S.; Analysis of Financial Time Series John Wiley & SONS. (2005), ISBN 0-471-690740

* D. S.G. Pollock; Handbook of Time Series Analysis, Signal Processing, and Dynamics; Academic Press; Har/Cdr edition(Nov 17, 1999), ISBN: 125609906

* Box, Jenkins and Reisel; Time Series Analysis: Forecasting and Control; John Wiley & SONS.; 4th

edition(Jun 30, 2008), ISBN: 470272848

See Also

[template("related")]