Package 'biasbetareg'

February 19, 2015

Type Package

Title Bias correction of the parameter estimates of the beta
regression model

Version 1.0

Date 2012-08-30

Author Luana Cecilia Meireles

Maintainer Luana Cecilia Meireles <ceciliameireles2006@hotmail.com>

Description Bias correction of second order of the maximum likelihood
estimators of the parameters of the beta regression model.

Depends betareg

License GPL

Repository CRAN

Date/Publication 2012-10-01 14:49:02

NeedsCompilation no

R topics documented:

---

bias	*Bias correction of the parameter estimates of the beta regression model*

Description

Bias correction of second order of the maximum likelihood estimators of the parameters of the beta
regression model.

Usage

```
bias(fit)
```

Arguments

fit   Fit beta regression models for rates and proportions via maximum likelihood
                using a parametrization with mean (depending through a link function on the
                covariates) and precision parameter (called phi).

Details

The parameters of the beta regression model are estimated by the maximum likelihood method
(see Ferrari and Cribari-Neto, 2004). These estimators are generally biased in models that use link
function. This bias is not a serious problem when the sample size is large, however, when the
sample is small, this bias can be large compared with the standard-error estimator.

Simas et al (2010) defines formulas general for second-order biases of the beta regression model
with constant or variable-precision accuracy.

Value

bias() returns a matrix with corrected coefficients.

References

Ferrari, S.L.P., and Cribari-Neto, F. (2004). Beta Regression for Modeling Rates and Proportions.
Journal of Applied Statistics, 31(7), 799-815.

Simas, A.B., Barreto-Souza, W., and Rocha, A.V. (2010). Improved Estimators for a General Class
of Beta Regression Models. Computational Statistics and Data Analysis, 54(2), 348-366.

See Also

betareg

Examples

```
require(betareg)
## Section 4 from Ferrari and Cribari-Neto (2004)
data("GasolineYield", package = "betareg")
bbt <- betareg(yield ~ batch + temp, data = GasolineYield)
bias(bbt)

## Section 3 from online supplements to Simas et al. (2010)
## mean model as in gy above
## precision model with regressor temp
bbt2 <- betareg(yield ~ batch + temp | temp, data = GasolineYield)
bias(bbt2)
```

Index

bias, 1