Simplex

Parametrisation

The Simplex distribution has the following density

$$\pi(y) = \frac{\sqrt{(s\tau)}}{\sqrt{2\pi[y(1-y)]^3}} \exp\left\{\frac{-(s\tau)(y-\mu)^2}{2y(1-y)\mu^2(1-\mu)^2}\right\}$$

has has a continuously responses $0 < y < 1$ where

μ : is the mean,

τ : is a precision parameter, and

s: is a fixed scaling, $s > 0$.

For the simplex distribution we have

$$E(y) = \mu$$

Link-function

The linear predictor η is linked to the mean μ using a default logit-link,

$$\mu = \frac{\exp(\eta)}{1 + \exp(\eta)}.$$

Hyperparameter

The hyperparameter is the precision parameter τ, which is represented as

$$\tau = \exp(\theta)$$

and the prior is defined on θ.

Specification

- family = `simplex`
- Required arguments: y.

Hyperparameter spesification and default values

Example

In the following example we estimate the parameters in a simulated example.

Notes

None.