



$$\omega \sim \text{Beta}(1, 1)$$

$$\kappa - 2 \sim \text{Gamma}(0.01, 0.01)$$

$$\theta \sim \text{Beta}(\omega((\kappa - 2) + 1), (1 - \omega)(\kappa - 2) + 1)$$

$$k \sim \text{Binomial}(\theta, N)$$