Foodstamp - Residuals of Logistic Regression

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Load and attach the data foodstamp.

> library(catdata)
> data(foodstamp)
> attach(foodstamp)

With binary response one can fit a logit model.

> food1 <- glm(y ~ TEN + SUP + INC, family=binomial, data=foodstamp)
> summary(food1)

Call:
  glm(formula = y ~ TEN + SUP + INC, family = binomial, data = foodstamp)

Deviance Residuals:
     Min       1Q   Median       3Q      Max
-1.2376  -0.5564  -0.3464  -0.1545   2.7955

Coefficients:
             Estimate Std. Error z value Pr(>|z|)
(Intercept)  -0.34003    0.53965  -0.630  0.52864
   TEN      -1.76030    0.52922  -3.326  0.00088 ***
   SUP       0.77525    0.50655   1.530  0.12591
    INC    -0.00149    0.00094  -1.588  0.11218
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 131.90 on 149 degrees of freedom
Residual deviance: 104.33 on 146 degrees of freedom
AIC: 112.33

Number of Fisher Scoring iterations: 6

Have a look at the distribution of the residuals. Therefore a Normal Q-Q Plot is generated.

> plot(food1,2)
Theoretical Quantiles

\texttt{glm(y \sim TEN + SUP + INC)}

Normal Q-Q