Foodstamp - Residuals of Logistic Regression

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Load and attach the data foodstamp.

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

With binary resonse 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) -0.3400266  0.5396540   -0.630  0.52864
TEN         -1.7602998  0.5292244   -3.326  0.00088 ***
SUP          0.7752455  0.5065527    1.530  0.12591
INC         -0.0014890  0.0009374   -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)
```

Normal Q–Q

Std. deviance resid.

66

137

147

Theoretical Quantiles
glm(y ~ TEN + SUP + INC)