

Regressão Binomial

pgs. 149 a 161

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Suponha que: $Z_j \sim \text{Bernoulli}(p(x))$

$$P(Z_j = 1) = p(x) = \frac{e^{\beta_0 + \beta_1 x}}{1 + e^{\beta_0 + \beta_1 x}}$$

Seja agora:

$$Y = \sum_{j=1}^n Z_j \quad \text{então} \quad Y \sim \text{Binomial}(n, p(x))$$

$$E(Y) = n \cdot p(x)$$

$$\text{Var}(Y) = n p(x) [1 - p(x)]$$

Em suma:

$$Y \sim \text{Binomial}(n, p(x))$$

$$E(Y) = n \times p(x)$$

$$= n \cdot \frac{e^{\beta_0 + \beta_1 x}}{1 + e^{\beta_0 + \beta_1 x}}$$

$$\text{Se } x+1 \quad \text{então} \quad \frac{p(x)}{1 + p(x)} \times e^{\beta_1}$$