STANDARDISE

29/09/2021

$X_i \overset{iid}{\sim} N(\mu, \sigma^2)$, $i = 1, \dots, n$

$$\frac{\sqrt{n}(\bar{X}_n - \mu)}{\sigma} \sim N(0,1).$$

PADRONIZAÇÃO σ

MAS E QUANDO σ É DESC?

$\hat{\sigma}_{EMV} = \sqrt{\hat{\sigma}^2_{EMV}}$

DEFINA: $$\hat{\sigma} = \sqrt{\frac{\sum_{i=1}^{n} (X_i - \bar{X}_n)^2}{n-1}}$$

$$\boxed{\frac{\sqrt{n}(\bar{X}_n - \mu)}{\hat{\sigma}}}$$

$f_A(a)$ $f_B(b)$

OBS. TOME V.a.s A e B

E DEFINA $R := \frac{A}{B}$ $r = \frac{a}{b}$, $a = rb$

$$f_R(r) = \int_{-\infty}^{\infty} |b| f_{A,B}(rb, b)\, db$$

$$X^2 = \frac{Z}{\sqrt{\frac{Y}{n}}} = \frac{\overline{\sqrt{n}\, Z}^{\,Q}}{\sqrt{Y}} = \frac{Q}{X}^2$$

$Q \perp\!\!\!\perp Y$ $f_{Q,Y}$

INTERVALOS DE CONFIANÇA

$\neq$

BAYES (CREDIBILIDADE)

$\underset{\sim}{x}$, $\pi(\theta)$ $f(\underset{\sim}{x}|\theta)$

$$p(\theta|\underset{\sim}{x}) = \frac{f(\underset{\sim}{x}|\theta)\,\pi(\theta)}{m(\underset{\sim}{x})}$$

$$\hat{I} = (a(\underset{\sim}{x}), b(\underset{\sim}{x})) : \quad \alpha \in (0,1)$$

$$\int_{a(\underset{\sim}{x})}^{b(\underset{\sim}{x})} p(t|\underset{\sim}{x})\,dt = \alpha$$

$\Rightarrow \hat{I}$ é um intervalo de credibilidade de $\alpha \cdot 100\%$ para θ.

$$\hat{I}_{HPD} = \inf_{b-a} \left\{ a<b : \int_a^b p(t|\underset{\sim}{x}) \right.$$

HIGHEST POSTERIOR DENSITY

$$\cancel{Pr(\theta < 3) = \frac{1}{2}}$$

$$A_\gamma(\underline{X}) = \bar{X}_n - \frac{c(\gamma, n)\,\sigma^2}{\sqrt{n}}$$

A, B

$$J(\underline{X}) = \big(A(\underline{X}),\ B(\underline{X})\big)$$

θ

$= \gamma$

$$\underline{X} = \underline{x}$$

$A(\underline{x}) = a(\underline{x})$ $\quad i(\underline{x}) = a(x)$

$b(x)$

$B(\underline{x}) = b(\underline{x})$

θ