Distribuições discretas				
Distribuição	$P(X=k)$	Suporte	Valor médio	Variância
$H(N,M,n)$	$\binom{M}{k}\binom{N-M}{n-k}/\binom{N}{n}$	$\max(0,M+n-N)\le k\le\min(M,n),\ k\in\mathbb{N}_0$	nM/N	$\frac{nM(N-M)(N-n)}{N^2(N-1)}$
$B(n,p)$	$\binom{n}{k}p^k(1-p)^{n-k}$	$0\le k\le n,\ k\in\mathbb{N}_0$	np	$np(1-p)$
$P(\lambda)$	$e^{-\lambda}\lambda^k/k!$	$k\in\mathbb{N}_0$	λ	λ
$G(p)$	$p(1-p)^{k-1}$	$k\in\mathbb{N}$	$1/p$	$(1-p)/p^2$

Distribuições absolutamente contínuas				
Distribuição	$f(x)$	Suporte	Valor médio	Variância
$U(a,b)$	$\frac{1}{b-a}$	$a<x<b,\ x\in\mathbb{R}$	$(a+b)/2$	$(b-a)^2/12$
$E(\lambda,\delta)$	$\frac{1}{\delta}e^{-(x-\lambda)/\delta}$	$x>\lambda,\ x\in\mathbb{R}$	$\lambda+\delta$	δ^2
$N(\mu,\sigma^2)$	$\frac{1}{\sqrt{2\pi}\,\sigma}\exp\left(-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2\right)$	$x\in\mathbb{R}$	μ	σ^2

Distribuições de estatísticas

Média

$$\sqrt{n}\frac{\bar{X}-\mu}{\sigma}\sim N(0,1) \qquad \sqrt{n}\frac{\bar{X}-\mu}{S}\sim t_{n-1} \qquad \sqrt{n}\frac{\bar{X}-\mu}{\sigma}\overset{a}{\sim}N(0,1) \qquad \sqrt{n}\frac{\bar{X}-\mu}{S}\overset{a}{\sim}N(0,1)$$

Variância amostral

$$\frac{(n-1)S^2}{\sigma^2}\sim\chi^2_{n-1}$$

Proporção amostral

$$\sqrt{n}\frac{\hat{P}-p}{\sqrt{p(1-p)}}\overset{a}{\sim}Z\sim N(0,1)$$

$$S_X^2=\frac{1}{n-1}\sum_{i=1}^n\left(X_i-\overline{X}\right)^2=\frac{1}{n-1}\left(\left(\sum_{i=1}^n X_i^2\right)-n\overline{X}^2\right)$$

Diferença de médias

$$\frac{\bar{X}-\bar{Y}-(\mu_X-\mu_Y)}{\sqrt{\frac{\sigma_X^2}{n_X}+\frac{\sigma_Y^2}{n_Y}}}\sim N(0,1) \qquad \frac{\bar{X}-\bar{Y}-(\mu_X-\mu_Y)}{S_p\sqrt{\frac{1}{n_X}+\frac{1}{n_Y}}}\sim t_{n_X+n_Y-2} \qquad S_p^2=\frac{(n_X-1)S_X^2+(n_Y-1)S_Y^2}{n_X+n_Y-2}$$

$$\frac{\bar{X}-\bar{Y}-(\mu_X-\mu_Y)}{\sqrt{\frac{\sigma_X^2}{n_X}+\frac{\sigma_Y^2}{n_Y}}}\overset{a}{\sim}N(0,1) \qquad \frac{\bar{X}-\bar{Y}-(\mu_X-\mu_Y)}{\sqrt{\frac{S_1^2}{n_X}+\frac{S_2^2}{n_Y}}}\overset{a}{\sim}N(0,1)$$

Teste ajustamento

$$\sum_{i=1}^k\frac{(O_i-E_i)^2}{E_i}\sim\chi^2_{k-p-1}$$

Teste aleatoriedade

$$\frac{V-\frac{2n-1}{3}}{\sqrt{\frac{16n-29}{90}}}\overset{a}{\sim}N(0,1)$$

Regressão linear simples

$$S_{xx}=\sum_{i=1}^n(x_i-\bar{x})^2 \qquad S_{YY}=\sum_{i=1}^n\left(Y_i-\bar{Y}\right)^2 \qquad S_{xY}=\sum_{i=1}^n(x_i-\bar{x})\left(Y_i-\bar{Y}\right)$$

Estimadores para os parâmetros do modelo

$$\hat{\beta}_1=\frac{S_{xY}}{S_{xx}} \qquad \hat{\beta}_0=\bar{Y}-\hat{\beta}_1\bar{x} \qquad \hat{\sigma}^2=\frac{SQ_R}{n-2}=\frac{S_{YY}-\hat{\beta}_1^2S_{xx}}{n-2}$$

Distribuição dos estimadores

$$\sqrt{\frac{n\,S_{xx}}{\sum x_i^2}}\frac{\hat{\beta}_0-\beta_0}{\hat{\sigma}}\sim t_{n-2} \qquad \sqrt{S_{xx}}\frac{\hat{\beta}_1-\beta_1}{\hat{\sigma}}\sim t_{n-2} \qquad \frac{(n-2)\hat{\sigma}^2}{\sigma^2}\sim\chi^2_{n-2}$$

Predição

$$\frac{\hat{E}(Y|x_o)-E(Y|x_o)}{\hat{\sigma}\sqrt{\frac{1}{n}+\frac{(x_o-\bar{x})^2}{S_{xx}}}}\sim t_{n-2} \qquad \frac{\hat{Y}(x_o)-Y(x_o)}{\hat{\sigma}\sqrt{1+\frac{1}{n}+\frac{(x_o-\bar{x})^2}{S_{xx}}}}\sim t_{n-2}$$

Coeficiente determinação

$$R^2=\hat{\beta}_1^2\frac{S_{xx}}{S_{YY}}$$