$$Z_i \overset{iid}{\sim} ZANBI(\mu, \nu, \pi)$$

$$z_1 = \cdots = z_n = 0 \quad n < m$$

$$(i = 1, \ldots, m)$$

$$L(\mu, \nu, \pi) = n \log(\pi)$$

$$+ (m-n)\log(1-\pi) + \sum_{j=n+1}^{m} \log\{f_Y(z_j; \mu, \nu)\}$$

$$- (m-n)\log\{1 - f_Y(0; \mu, \nu)\}$$

$$Y \sim B(\mu, \nu)$$

$$f_Y(z; \mu, \nu) = \tau(z, \nu)\left(\frac{\mu}{\mu+\nu}\right)^{z}\left(\frac{\nu}{\mu+\nu}\right)^{\nu}$$

$$\log\left\{f_Y(z; \mu, \nu)\right\} = \log\{\tau(z, \nu)\} + z\log(\mu)$$

$$- z\log(\mu+\nu) + \nu\log(\nu) - \nu\log(\mu+\nu)$$

$$f_Y(0; \mu, \nu) = \left(\frac{\nu}{\mu+\nu}\right)^{\nu}$$

$$\log\left\{1 - f_Y(0;\mu,\nu)\right\} = \log\left\{1 - \left(\frac{\nu}{\nu+\mu}\right)^{\nu}\right\}$$

$$L(\mu,\nu,\hat{\pi}) = r\log(\hat{\pi}) + (n-r)\log(1-\hat{\pi})$$

$$+ \sum_{i=r+1}^{n} c(\nu, z_i) + (n-r)\bar{z}\log(\mu)$$

$$-(n-r)\bar{z}\log(\mu+\nu) + (n-r)\nu\log(\nu)$$

$$-(n-r)\nu\log(\mu+\nu)$$

$$-(n-r)\log\left\{1 - \left(\frac{\nu}{\mu+\nu}\right)^{\nu}\right\}$$

$H_0: \mu = 1$

$H_1: \mu \neq 1$

$\hat{\pi}$ é o mesmo sob H_0 e sob $H_0 \cup H_1$

e ν é fixo

$$\xi_{RV} = 2\left\{L(\hat{\mu},\nu,\hat{\pi}) - L(1,\nu,\hat{\pi})\right\}$$

$$\xi_{RV} = 2\Big[(n-r)\bar{z}\log(\hat{\mu}) - (n-r)\bar{z}\log(\hat{\mu}+v)$$

$$+ (n-r)\bar{z}\log(1+v) - (n-r)v\log(\hat{\mu}+v)$$

$$+ (n-r)v\log(1+v) - (n-r)\log\left\{1-\left(\frac{v}{\hat{\mu}+v}\right)^{v}\right\}$$

$$+ (n-r)\log\left\{1-\left(\frac{v}{1+v}\right)^{v}\right\}\Big]$$

$$\xi_{RV} = 2\Big[(n-r)\bar{z}\log(\hat{\mu}) + (n-r)\bar{z}\log\left(\frac{1+v}{\hat{\mu}+v}\right)$$

$$+ (n-r)v\log\left(\frac{1+v}{\hat{\mu}+v}\right) + (n-r)\log\left[\frac{1-\left(\frac{v}{1+v}\right)^{v}}{1-\left(\frac{v}{\hat{\mu}+v}\right)^{v}}\right]\Big]$$

$$\underset{n\to\infty}{\overset{H_0}{\sim}} \chi^2_1$$

$\hat{\mu}$ raiz de $U_{\hat{\mu}}=0$ (processo iterativo)