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Notes Done

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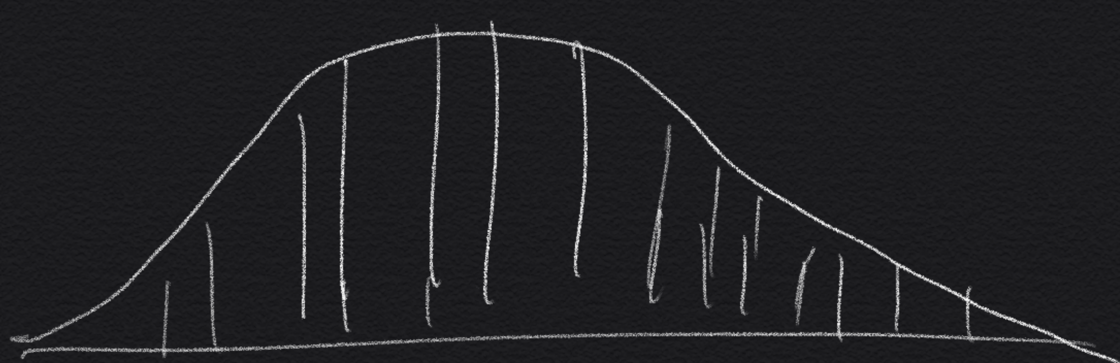
$$\hat{\mu}^{JS} = \hat{M} + \hat{B}(X_i - \hat{M})$$

$$\hat{B} = 1 - \frac{(N-3)}{S}$$

$$S = \sum_{i=1}^{N} (x_i - \bar{x})^2$$



$$\sigma_0^2 = \bar{p}(1-\bar{p})/90$$

$\sim N(\mu, 1)$

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$$X_i = \frac{p_i}{\sigma_0} \rightarrow \text{Así } x_i \sim N(\mu, 1)$$

$$\hat{\mu}^{JS} = \hat{m} + \left(1 - \frac{(N-3)}{\sum_{i=1}^{N} (x_i - \bar{x})^2}\right)(x_i - \hat{m})$$

$$= \hat{m} + \left(1 - \frac{(N-3)}{\sum_{i=1}^{N} \left(\frac{p_i}{\sigma_0} - \frac{\bar{p}}{\sigma_0}\right)^2}\right)\left(\frac{p_i}{\sigma_0} - \hat{m}\right)$$

$$= \frac{\bar{p}}{\sigma_0} + \left(1 - \frac{(N-3)}{\sum_{i=1}^{N} \left(\frac{p_i}{\sigma_0} - \frac{\bar{p}}{\sigma_0}\right)^2}\right) \cdot \left(\frac{p_i}{\sigma_0} - \frac{\bar{p}}{\sigma_0}\right)$$

$$= \frac{1}{\sigma_0} \cdot \left[\bar{p} + \left(1 - \frac{(N-3) \cdot \sigma_0^2}{\sum_{i=1}^{N} (p_i - \bar{p})^2}\right)(p_i - \bar{p})\right]$$

$$\hat{p}^{JS} = \sigma_0 \cdot \hat{\mu}^{JS}$$

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$$= \hat{\mu} + \left(1 - \frac{(N-3)}{\sum_{i=1}^{N}\left(\frac{p_i}{\sigma_0} - \frac{\bar{p}}{\sigma_0}\right)^2}\right)\left(\frac{p_i}{\sigma_0} - \hat{\mu}\right)$$

$$= \frac{\bar{p}}{\sigma_0} + \left(1 - \frac{(N-3)}{\sum_{i=1}^{N}\left(\frac{p_i}{\sigma_0} - \frac{\bar{p}}{\sigma_0}\right)^2}\right)\cdot\left(\frac{p_i}{\sigma_0} - \frac{\bar{p}}{\sigma_0}\right)$$

$$= \frac{1}{\sigma_0}\cdot\left[\bar{p} + \left(1 - \frac{(N-3)\cdot\sigma_0^2}{\sum_{i=1}^{N}(p_i - \bar{p})^2}\right)(p_i - \bar{p})\right]$$

$$\hat{p}^{JS} = \sigma_0 \cdot \hat{\mu}^{JS}$$

$$= \bar{p} + \left(1 - \frac{(N-3)\,\sigma_0^2}{\sum_{i=1}^{N}(p_i - \bar{p})^2}\right)(p_i - \bar{p})$$