SOC 4930/5050: Week 03 Equations Quick Reference

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Median (odd n of items)

Let m = the median item's term:

$$m = \left(\frac{n+1}{2} \right)^{th} \tag{1}$$

Median (even n of items)

Let m_a = the median item's term:

$$m_a = \left(\frac{n+1}{2} \right)^{th} \tag{2a}$$

Let x_a = the next lower value before m_a. Let x_b = the next higher value after m_a.

Let m_b = the median:

$$m_b = \left(\frac{x_a + x_b}{2} \right) \tag{2b}$$

Mean

$$\overline{x} = \frac{\sum_{i=1}^{n} x}{n} \tag{3}$$

Standard Deviation

Deviance

$$D = \left(x - \overline{x}\right) \tag{4a}$$

Total Error

$$TE = \sum_{i=1}^{n} \left(x - \overline{x}\right) \tag{4b}$$

Sum of Squared Error

$$SS = \sum_{i=1}^{n} \left(x - \overline{x}\right)^2 \tag{4c}$$

Variance

$$s^2 = \frac{\sum_{i=1}^{n} \left(x - \overline{x}\right)^2}{n-1} \tag{4d}$$

Standard Deviation

$$s = \sqrt{\frac{\sum_{i=1}^{n} \left(x - \overline{x}\right)^2}{n-1}} \tag{4e}$$