

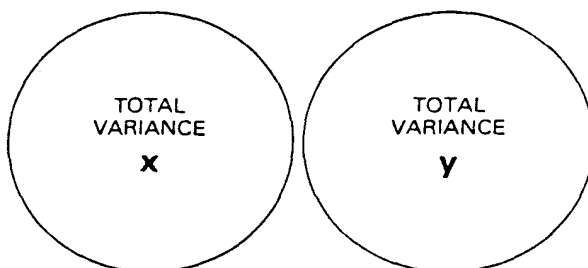
# THE COEFFICIENT OF DETERMINATION

$$r^2$$

A correlation indicates the degree and direction of the relationship between the X and Y distributions

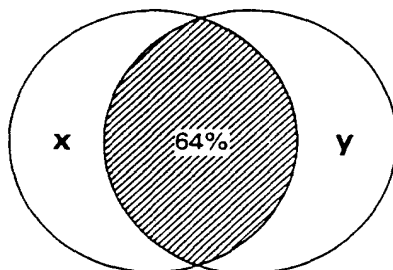
The *coefficient of determination*, whose symbol is  $r^2$ , indicates the degree of common variance

(a) If the correlation ( $r$ ) between variable  $X$  and variable  $Y = 0$ , then the coefficient of determination =  $0^2 \times 100 = 0\%$ .



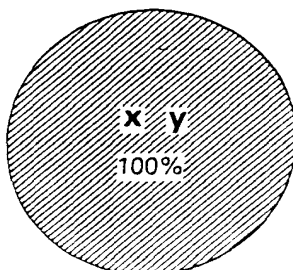
None of the factors accounting for variability are common to both variables.

(b) If the correlation ( $r$ ) between variable  $X$  and variable  $Y = 0.8$ , then the coefficient of determination =  $0.8^2 \times 100 = 64\%$ .



64% of the factors accounting for variability are common to both variables.

(c) If the correlation ( $r$ ) between variable  $X$  and variable  $Y = 1$ , then the coefficient of determination =  $1^2 \times 100 = 100\%$ .



100% of the factors accounting for variability are common to both factors.