

Statistics - Notations

Capital alphabet used generally for Population and lower case for Samples

P - population proportion

X - set of population elements

N - set of population size

p - sample proportion

x - set of sample elements

n - set of sample size

Greek word

μ - population mean

\bar{x} - sample mean.

δ - standard deviation of a population

μ^2 - variance of a population

ρ - population correlation coefficient base on a population

s - standard deviation of a sample

s^2 - variance of a sample

r - population correlation coefficient based on all of the elements from a sample

Probability notation in statistics

P(A) - probability that event A will occur

P(A|B) - conditional probability that event A occurs, given that event B has occurred

P(A') - probability of the complement of event A.

($A \cap B$) - probability of the intersection of events A and B

P($A \cup B$) - probability of the union of events A and B

E(X) - expected value of random variable X

b(x;n,P) - binomial probability

Permutation/Combination

$n!$ - factorial value of n .

nPr - number of permutations of n things taken r at a time

nCr - number of combinations of n things taken r at a time

Random Variables

Z or z - standardized score, also known as a z score

$z\alpha$ - standardized score that has a cumulative probability equal to $1-\alpha$

$t\alpha$ - t statistic that has a cumulative probability equal to $1-\alpha$

X^2 - chi-square statistic

Summation Symbols

Σ - summation symbol, used to compute sums over a range of values

Σx or Σx_i - sum of a set of n observations. Thus, $\Sigma x = x_1 + x_2 + \dots + x_n$