CONVENTIONAL USE OF SYMBOLS IN REGRESSION ANALYSIS

Type of quantity	**Sample**	**Population**
Parameters	a, b, c, d, e, p, q, r, s, t, …	α, β, χ, δ, ε, π, θ, ρ, σ, τ, ...
Variables	x, y, z, …	x, y, z, …
Functions	f(), g(), F(), G()	f(), g(), F(), G()
Indexing variables or parameters or functions by subscripts or superscripts. Do not confuse superscripts with power.	i, j, k, l, m, n, …	i, j, k, l, m, n, …
Mean value of a variable X		μ_x
Variance of a variable X		σ_x^2
Stanndard deviation of X		Square root of var(x) = σ_x
Co-variance of X and Y		cov(x,y) = σ_{xy}

Operators	Name	Meaning
Σ_i $(\text{expression})_i$	Sum operator	Find the sum by add together all elements $(\text{expression})_i$ as the index i varies. If nothing is specified for i it will be assumed to vary from the lower bound of 1 to the upper bound of n.
Π_i $(\text{expression})_i$	Product operator	Find the product by multiplying all elements $(\text{expression})_I$ as the index I varies. If nothing is specified for I it will be assumed to vary from the lower bound of 1 to the upper bound of n.
E(expression)	Expection operator	Find the average value of (expression) in a population
var(expression)	Variance operator	Find the variance of (expression) in a population

See more in Hamiton, Appendix 1, page 289-301