

Notations

The following notations and assumptions have been used in this proposed work for the sake of convenience (Patro et al. (2017)) in model formulation:

Sl. No.	Abbreviation	Description
1	z	Ordering quantity size
2	D	demand year wise
3	C_p	cost unit wise
4	C_k	cost of ordering
5	C_h	carrying cost
6	C_k	opportunity cost
7	I_{nk}	Index
8	P	% of defectives in Z
9	$f(p)$	Probability Density Function of p
10	S_g	Unit selling price of a perfect item
11	S_{mp}	Price of selling for imperfect item
12	w	Rate of screening
13	C_s	Cost of screening of an item
14	T	Length of a cycle
15	TR	Total revenue of a cycle
16	TP	Total profit per cycle
17	TPU	Total profit in a unit time
18	$E[p]$	Expected % of defectives in Z
19	$ETPU(Z)$	Expected total profit per unit time in z