A METHOD FOR DOWN PROCESS WITH MAXIMUM PROFITS EVEN PURCHASE CREDIT SITUATIONS WITH FUZZY SENSE

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ABSTRACT:

To create fuzzy set theory and the fuzziness in the inventory issue, the reason is to discover the Revenue for defective quantity ccompares to the total cost and the related cost of selling value of remodeled product with trade credit situations also fuzzy. This approach is to discover the quantity which has the base cost with maximum profit. When the profit gained from selling one unit of the item with warranty periods and guaranty period up process cost when in down trade conditions and well-planned Advertisement techniques must be gives some percentage of profits. Partial profit of planned operation on stock clearing and effective selling techniques, sustainable incomes of the end products has to be done. Mathematical model has been developed in below ways, (i) to find the fuzzy Down process and Scrap clearing with the fuzzy relevant cost (ii) revenue related with fuzzy production cost and profit of the different lot sizes with interests of purchase cost of the products(iii)to find the Fuzzy up process with the screening cost of defective quantity with Advertisement dependent relevant cost tends to profits Our aim is to find total cost and Profit with fuzzy sense. Numerical models are given and sensitivity investigation is carried out to conclude the result.

Keywords- Properties and Operators of fuzzy Number, Down Process, Interest, Fuzzy Revenue, Fuzzy Profit.

INRODUCTION:

The advertisement makes many things, one side defective products losing brand values, other side remodeled with discounted products of promotional offers. Comparison of scrap values to fully profitable down process maximizes the profit, that is Down trading move to down Process. Down process is the first sale which is meant for good quality determination.

Total cost includes holding cost, screening cost, discount cost, advertisement cost and interest of purchase cost. Proper screening and segregating process of goods will brings the revenue more. Sometimes, scraps will be used for models for teaching and raining purposes like old train engines, Ship parts, defense vehicles, mobile phones, gadgets, electronic items, heavy vehicle parts and aircrafts parts, so scrap or total waste moves to educational models used for training purposes.

The Defective items with immediate return analyzed and found the solution of ranking method with fuzzified purchase cost and relevant cost with triangular fuzzy number1. The trapezoidal fuzzy demand and additional demand pattern with Shortages and backlogged condition2. Defective items sold after screening process and deep on that, mostly in trade returns goods goes to manufacturing only. But what is the use of that? Relevant cost and sending the defectives are waste of money, but proper planning for defectives will make an additional profit with partial Loss3, developed a trade credit model with multivariable demand and the objective of review the procedure with multivariate demand under diminishing conditions has been solved4. Mathematical model for Economic Order quantity model with immediate return of defective items 5. A classic EOQ model with fixed values and purchase, relevant costs are added with discounts and partial deterioration costs6. Ordering, holding cost and safety stock with fuzzy arithmetic Operators7.Wellknown economic order quantity model demand with permissible delay in payments with solutions analysed8.Basic theory of operators and multiple lot size and preplanned profitable return of goods9, 11. The partial backlogging inventory model for deteriorating items considering stock and price sensitive demand rate in fuzzy sense10. A multi-item inventory model of deteriorating items with expiration date is developed and analyzed12. Recent trends and comparison of various authors in inventory control strategy13.Determined the optimum production cycle which tends to reduce the total cost of the inventory system14. To maximize the resultant Profit

and it contain with demand and reordering process15. How to reduce cost of recruitment, advertisement, holding, travel allowance and management cost are discussed16. Partial backlogging and deterioration govern with differential equations17.Considering an optimal inventory model for deteriorating items and Demand rate is depends price and solved the model for total profit18. Left and Right Triangular fuzzy numbers used to find relevant cost and return of goods cost19. Developed two stage scheduling for to minimize rental cost under fuzzy time using triangular fuzzy number can be extended to trapezoidal fuzzy numbers with different parameters20. Elementary Applications on operations on generalized trapezoidal fuzzy numbers21. Operations on trapezoidal fuzzy numbers with uncertain conditions22.Defective item solution depends with constant demand and time developed23.The standard of manufacturing technique is to obtained optimal fuzzy rule24.25analysed fuzzy trapezoidal rule for average mean value method. Fuzzy optimization plays the main role in data mining and share market tradings26.

One is DOWN process it is used for Good Quality First Sale (GQFS) and second one UP Process is Defective Quality Second Sale (DQSS) and remaining defective products goes to scrap clearing section.

First section is Materials and methods of the findings, second section is two process are depending UP and DOWN Process. Third is the mathematical models in fuzzy environment has to solve with UP and DOWN process. Fourth, five and six section explanation of numerical examples for process is Comparison of Products with direct Profit and Return of Products with indirect Profit, addition of this two we will get Total profit, and actions should be taken for increase the ownership costs scrap clearing cost also included. Finally, section seven, conclusion and future research.

NOTATIONS AND ASSUMPTIONS:

~ wavy bar indicates fuzzification of parameters.

$\widetilde{DP}$ is the Down Process.

$\widetilde{UP}$ is the Up Process.

$\widetilde{SP}$ is the Scrap Process.

$\widetilde{D_q}$ is the Fuzzy Demand quantity

$\widetilde{H}$ is the Holding cost

$\widetilde{O}$ is the Ordering or setup cost

$\tilde{r}$ is the Order quantity in Down Process

$\widetilde{r^*}$is the Order quantity in Up Process

$\tilde{r}^{**}$is the Order quantity in Clearing/recycling Process

$\widetilde{L_r}$is the Length of the plan

$\widetilde{L_1}$is the Length of the plan in Down Process(90days)

$\widetilde{L_2}$is the Length of the plan in Up process(30days)

$\widetilde{L_3}$is the Length of the plan in Clearing Process(30days)

D_f is the percentage of Defective items

Let $\tilde{r} = (1 - D_f\%)$ is the quantity of good items.

$\tilde{r}^* = (D_f) is$ the defective quantity , here, $D_f = a + b$

$\tilde{r}^{**} = b$ is the clearing / scrap quantity

Assume,

$D_f(\alpha, \beta, \gamma, \delta) = (5,10,15,20)\%$

R_1 is the Testing and dismantling (depreciation cost)

R_2 is the Labor cost

R_3 is the Additional Material cost/ Upgrading and quality test cost

R_4 is the Scrap cost

Cc is the Clearing Charges.

$\widetilde{SV_G}$ is the Selling value of good items in down process per unit

$\widetilde{SV_D}$ is the Selling value of Defective items in Up process per unit

$\widetilde{SV_c}$ is the Selling value of Scrap items in clearing section per unit

$[\widetilde{R_{ev1}DN}]$ is the Revenue in Down Process

$[\widetilde{R_{ev2}UP}]$ is the Revenue in Up Process

$[\widetilde{R_{ev}Rc}]$ is the Revenue in Recycling Process

$[\widetilde{P_1DN}]$ is the gain in Down Process

$[\widetilde{P_2UP}]$ is the gain in Up Process

$[\widetilde{P_3Rc}]$ is the gain in Recycling/scrap Process

$\left[\widetilde{TDN}\right]$ is the Total Cost in Down Process

$\left[\widetilde{TUP}\right]$ is the Total cost in UP Process

$\left[\widetilde{TRC}\right]$ is Total cost of Recycling/scrap Process

MATHEMATICAL MODEL FORMULATIONS:

To Find Purchase cost,

Let $\widetilde{P_{Uc}} = \left(\widetilde{P_{U1}}, \widetilde{P_{U2}}, \widetilde{P_{U3}}, \widetilde{P_{U4}}\right)$ and $\tilde{r} = (\tilde{r_1}, \tilde{r_2}, \tilde{r_3}, \tilde{r_4})$ are Trapezoidal fuzzy numbers, then

Purchasing Cost in Fuzzy Sense = Purchase cost per unit X Order quantity

$$\left[\widetilde{PC}\right] = \widetilde{P_{Uc}} \otimes \tilde{r}$$

$$\left[\widetilde{PC}\right] = \left(\widetilde{P_{U1}}, \widetilde{P_{U2}}, \widetilde{P_{U3}}, \widetilde{P_{U4}}\right) \otimes (\tilde{r_1}, \tilde{r_2}, \tilde{r_3}, \tilde{r_4})$$

$$\left[\widetilde{PC}\right] = \left(\widetilde{P_{U1}} \otimes \tilde{r_1}, \widetilde{P_{U2}} \otimes \tilde{r_1}, \widetilde{P_{U3}} \otimes \tilde{r_1}, \widetilde{P_{U4}} \otimes \tilde{r_1}\right) \quad (1)$$

$$\text{Holding Cost in Fuzzy Sense} = \tilde{H} \otimes \tilde{r} \otimes \tilde{L}_r \oslash 2 \quad (2)$$

$$\text{Ordering cost in fuzzy sense} = \tilde{O} \otimes \widetilde{D_q} \oslash \tilde{r} \quad (3)$$

Total Cost is addition of holding cost and Setup cost[1],

Let $\widetilde{P_{Uc}} = \left(\widetilde{P_{U1}}, \widetilde{P_{U2}}, \widetilde{P_{U3}}, \widetilde{P_{U4}}\right), \tilde{r} = \left(\tilde{r_1}, \tilde{r_2}, \tilde{r_3}, \tilde{r_4}\right)$ are Trapezoidal Fuzzy Numbers[21,22], Then,

From equation (1), (2) and (3),

$$\text{Total cost in fuzzy} = \left[\widetilde{P_{Uc}} \otimes \tilde{r}\right] \oplus \left[\tilde{H} \otimes \tilde{r} \otimes \tilde{L}_r \oslash 2\right] \oplus \left[\tilde{O} \otimes \widetilde{D_q} \oslash \tilde{r}\right] \quad (4)$$

To find Total Cost in DOWN process,

Let $\tilde{D} = \left(\widetilde{D_1}, \widetilde{D_2}, \widetilde{D_3}, \widetilde{D_4}\right)$,

$\tilde{H} = \left(\widetilde{H_1}, \widetilde{H_2}, \widetilde{H_3}, \widetilde{H_4}\right), \tilde{O} = \left(\widetilde{O_1}, \widetilde{O_2}, \widetilde{O_3}, \widetilde{O_4}\right)$ are trapezoidal fuzzy numbers[21,22], then,

$$\left[\widetilde{TDN}\right] = \left[\widetilde{P_{Uc}} \otimes \tilde{r}\right] \oplus \left[\tilde{H} \otimes \tilde{r} \otimes \tilde{L}_r \oslash 2 \oplus \tilde{O} \otimes \widetilde{D_q} \oslash \tilde{r}\right]$$

$$= \Bigg[\left[\left(\widetilde{P_{U1}}, \widetilde{P_{U2}}, \widetilde{P_{U3}}, \widetilde{P_{U4}}\right) \otimes \left(\tilde{r_1}, \tilde{r_2}, \tilde{r_3}, \tilde{r_4}\right)\right] \oplus \left[\left(\tilde{H}_1, \tilde{H}_2, \tilde{H}_3, \tilde{H}_4\right) \otimes \tilde{r} \otimes \left(\widetilde{L_1}, \widetilde{L_2}, \widetilde{L_3}, \widetilde{L_4}\right) \oslash 2\right] \oplus \left(\widetilde{O_1}, \widetilde{O_2}, \widetilde{O_3}, \widetilde{O_4},\right) \otimes \left(\tilde{D}_1, \tilde{D}_2, \tilde{D}_3, \tilde{D}_4\right) \oslash \tilde{r}\Bigg]$$

$$\left[\widetilde{TDN}\right] = \left[\widetilde{P_{U1}} \otimes \tilde{r_1}, \widetilde{P_{U2}} \otimes \tilde{r_1}, \widetilde{P_{U3}} \otimes \tilde{r_1}, \widetilde{P_{U4}} \otimes \tilde{r_1}\right] \oplus$$

$$\left[\widetilde{H_1} \otimes \tilde{r} \otimes \widetilde{L_1} \oslash 2, \widetilde{H_2} \otimes \tilde{r} \otimes \widetilde{L_2} \oslash 2, \tilde{H}_3 \otimes \tilde{r} \otimes \widetilde{L_3} \oslash 2, \tilde{H}_3 \otimes \tilde{r} \otimes \widetilde{L_4} \oslash 2\right]$$
$$\oplus \left[\widetilde{O_1} \otimes \widetilde{D_1} \oslash \tilde{r}, \widetilde{O_2} \otimes \widetilde{D_2} \oslash \tilde{r}, \widetilde{O_3} \otimes \widetilde{D_3} \oslash \tilde{r}, \widetilde{O_4} \otimes \widetilde{D_4} \oslash \tilde{r}\right]$$

$$\left[\widetilde{TDN}\right] = \left[\widetilde{P_{U1}} \otimes \tilde{r_1}, \widetilde{P_{U2}} \otimes \tilde{r_1}, \widetilde{P_{U3}} \otimes \tilde{r_1}, \widetilde{P_{U4}} \otimes \tilde{r_1}\right] \oplus \left[\widetilde{H_1} \otimes \tilde{r} \otimes \frac{\widetilde{L_1}}{2} \oplus \widetilde{O_1} \otimes \frac{\widetilde{D_1}}{\tilde{r}}, \widetilde{H_2} \otimes \frac{\tilde{r} \otimes \widetilde{L_2}}{2} \oplus \widetilde{O_2} \otimes \frac{\widetilde{D_2}}{\tilde{r}}, \widetilde{H_3} \otimes \frac{\tilde{r} \otimes \widetilde{L_3}}{2} \oplus \widetilde{O_3} \otimes \frac{\widetilde{D_3}}{\tilde{r}}, \widetilde{H_4} \otimes \frac{\tilde{r} \otimes \widetilde{L_4}}{2} \oplus \widetilde{O_4} \otimes \frac{\widetilde{D_4}}{\tilde{r}}\right] \quad (5)$$

Let $\tilde{r} = \left(1 - D_{f\%}\right)$

$\tilde{r}^* = \left(D_{f\%}\right) \quad here, D_{f\%} = a + b$(6)

$\tilde{r}^{**} = b$

Repairable and recyclable scrap and Up Process Total cost=Holding cost + Testing and Dismantling (depreciation cost)+ Labor cost + Additional Material cost/ Upgrading and quality test cost + Scrap cost + Clearing charges[1].

To find the Total cost of Recycling/Clearing scrap Process,

$$\left[\widetilde{TRC}\right] = \left[\left(\widetilde{H_1}, \widetilde{H_2}, \widetilde{H_3}, \widetilde{H_4}\right) \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2\right] \oplus \left[(R_4 \otimes \widetilde{r^{**}}) \oplus (Cc \otimes \widetilde{r^{**}})\right.$$

$$= \left[\widetilde{H_1} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2, \widetilde{H_2} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2, \widetilde{H_3} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2, \widetilde{H_4} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \right.$$
$$\left. \oslash 2\right] \oplus \left[(R_4 \otimes \widetilde{r^{**}}) \oplus (Cc \otimes \widetilde{r^{**}})\right.$$

$$\left[\widetilde{TRC}\right] = \left[\widetilde{H_1} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2 \ \oplus \left[\left(R_4 \otimes \widetilde{r^{**}}\right) \oplus (Cc \otimes \widetilde{r^{**}})\right], \widetilde{H_2} \otimes \widetilde{r^{**}} \otimes \tilde{L}_3 \oslash 2\right.$$
$$\oplus \left[(R_4 \otimes \widetilde{r^{**}}) \oplus (Cc \otimes \widetilde{r^{**}})\right], \widetilde{H_3} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2 \ \oplus \left[(R_4 \otimes \widetilde{r^{**}}) \right.$$
$$\left. \oplus (Cc \otimes \widetilde{r^{**}})\right], \quad \widetilde{H_4} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2 \ \oplus \left[(R_4 \otimes \widetilde{r^{**}}) \oplus (Cc \otimes \widetilde{r^{**}})\right]$$

$$\left[\widetilde{TRC}\right] = \left[\widetilde{H_1} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2 \ \oplus [(R_4 \otimes b) \oplus (Cc \otimes b)], \widetilde{H_2} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2\right.$$
$$\oplus [(R_4 \otimes b) \oplus (Cc \otimes b)], \widetilde{H_3} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3 \oslash 2 \ \oplus [(R_4 \otimes b) \oplus (Cc \otimes b)],$$
$$\widetilde{H_4} \otimes \widetilde{r^{**}} \otimes \widetilde{L}_3$$
$$\oslash 2[(R_4 \otimes b)(C$$
$$\left. \otimes \widetilde{r^{**}})]\right] \qquad (6)$$

To find the Revenue in Down Process,

Let V=V_1,V_2,V_3 in three revenue periods up, down and Scrap clearing sections

$Let \tilde{r} = (\tilde{r}_1, \tilde{r}_2, \tilde{r}_3, \tilde{r}_4) and \widetilde{SV_G} = \left(\widetilde{SV_1}, \widetilde{SV_2}, \widetilde{SV_3}, \widetilde{SV_4}\right)$ are trapezoidal Fuzzy numbers then,

$\left[\widetilde{R_{ev}DN}\right] =$ Selling PriceXQuantity of items in Down process

$$\left[\widetilde{R_{ev}DN}\right] = \left[\widetilde{SV_G} \otimes \tilde{r}\right]$$

$$= \left[\left(\widetilde{SV_1}, \widetilde{SV_2}, \widetilde{SV_3}, \widetilde{SV_4}\right) \otimes (\tilde{r}_1, \tilde{r}_2, \tilde{r}_3, \tilde{r}_4)\right]$$

$$\left[\widetilde{R_{ev1}DN}\right] = \left[\left(\widetilde{SV_1} \otimes \tilde{r}_1, \widetilde{SV_2} \otimes \tilde{r}_2, \widetilde{SV_3} \otimes \tilde{r}_3, \widetilde{SV_4} \otimes \tilde{r}_4\right)\right] (9)$$

To find the Gain in Down Process,

Let F=F_1, F_2, F_3 are the Profit in three places are Down ,Up and Scrap clearing sections.

Profit = Revenue - Total Cost[1]

$$[\widetilde{P_F DN}] = [\widetilde{R_{ev} DN}] \ominus \left[\widetilde{TDN}\right]$$

$$[\widetilde{P_1 DN}] = \Big[\left[\widetilde{SV_1}\otimes\tilde{r}_1, \widetilde{SV_2}\otimes\tilde{r}_2, \widetilde{SV_3}\otimes\tilde{r}_3, \widetilde{SV_4}\otimes\tilde{r}_4\right] \ominus \left[\widetilde{\mathrm{P_{U1}}}\otimes\widetilde{\mathrm{r}_1}, \widetilde{\mathrm{P_{U2}}}\otimes\widetilde{\mathrm{r}_1}, \widetilde{\mathrm{P_{U3}}}\otimes\widetilde{\mathrm{r}_1}, \widetilde{\mathrm{P_{U4}}}\otimes\widetilde{\mathrm{r}_1}\right] \oplus \left[\widetilde{H_1}\otimes\tilde{r}\otimes\tilde{L}_1 \oslash 2 \oplus \widetilde{O_1}\otimes\widetilde{D_1}\oslash\tilde{r},\ \widetilde{H_2}\otimes\tilde{r}\otimes\tilde{L}_2\oslash 2\oplus\widetilde{O_2}\otimes\widetilde{D_2}\oslash\tilde{r}, \widetilde{H_3}\otimes\tilde{r}\otimes\tilde{L}_3\oslash 2\oplus\widetilde{O_3}\otimes\widetilde{D_3}\oslash\tilde{r}, \widetilde{H_4}\otimes\tilde{r}\otimes\tilde{L}_4\oslash 2\oplus\widetilde{O_4}\otimes\widetilde{D_4}\oslash\tilde{r}\right]\Big]$$

$$= \Big[\left[\left(\widetilde{SV_1}\otimes\tilde{r}_1, \widetilde{SV_2}\otimes\tilde{r}_2, \widetilde{SV_3}\otimes\tilde{r}_3, \widetilde{SV_4}\otimes\tilde{r}_4\right)\right] \ominus \left[\widetilde{\mathrm{P_{U1}}}\otimes\widetilde{\mathrm{r}_1}, \widetilde{\mathrm{P_{U2}}}\otimes\widetilde{\mathrm{r}_1}, \widetilde{\mathrm{P_{U3}}}\otimes\widetilde{\mathrm{r}_1}, \widetilde{\mathrm{P_{U4}}}\otimes\widetilde{\mathrm{r}_1}\right] \oplus \left[\widetilde{H_1}\otimes\tilde{r}\otimes\tilde{L}_1\oslash 2\oplus\widetilde{O_1}\otimes\widetilde{D_1}\oslash\tilde{r}, \widetilde{H_2}\otimes\tilde{r}\otimes\tilde{L}_2\oslash 2\oplus\widetilde{O_2}\otimes\widetilde{D_2}\oslash\tilde{r}, \widetilde{H_3}\otimes\tilde{r}\otimes\tilde{L}_3\oslash 2\oplus\widetilde{O_3}\otimes\widetilde{D_3}\oslash\tilde{r}, \widetilde{H_4}\otimes\tilde{r}\otimes\tilde{L}_4\oslash 2\oplus\widetilde{O_4}\otimes\widetilde{D_4}\oslash\tilde{r}\right]\Big]$$

$$[\widetilde{P_1 DN}] = \left[\widetilde{SV_1}\otimes\tilde{r}_1 \ominus \widetilde{\mathrm{P_{U1}}}\otimes\widetilde{\mathrm{r}_1} \oplus \widetilde{H_1}\otimes\tilde{r}\otimes\tilde{L}_1\oslash 2\oplus\widetilde{O_1}\otimes\widetilde{D_1}\oslash\tilde{r}, \widetilde{SV_2}\otimes\tilde{r}_2 \ominus \widetilde{\mathrm{P_{U2}}}\otimes\widetilde{\mathrm{r}_2} \oplus \widetilde{H_2}\otimes\tilde{r}\otimes\tilde{L}_2\oslash 2\oplus\widetilde{O_2}\otimes\widetilde{D_2}\oslash\tilde{r}, \widetilde{\mathrm{P_{U3}}}\otimes\widetilde{\mathrm{r}_3} \oplus \widetilde{SV_3}\otimes\tilde{r}_3 \ominus \widetilde{H_3}\otimes\tilde{r}\otimes\tilde{L}_3\oslash 2\oplus\widetilde{O_3}\otimes\widetilde{D_3}\oslash\tilde{r}, \widetilde{\mathrm{P_{U4}}}\otimes\widetilde{\mathrm{r}_4} \oplus \widetilde{SV_4}\otimes\tilde{r}_4 \ominus \widetilde{H_4}\otimes\tilde{r}\otimes\tilde{L}_4\oslash 2\oplus\widetilde{O_4}\otimes\widetilde{D_4}\oslash\tilde{r}\right] \quad (7)$$

PROBLEM CALCULATIONS:

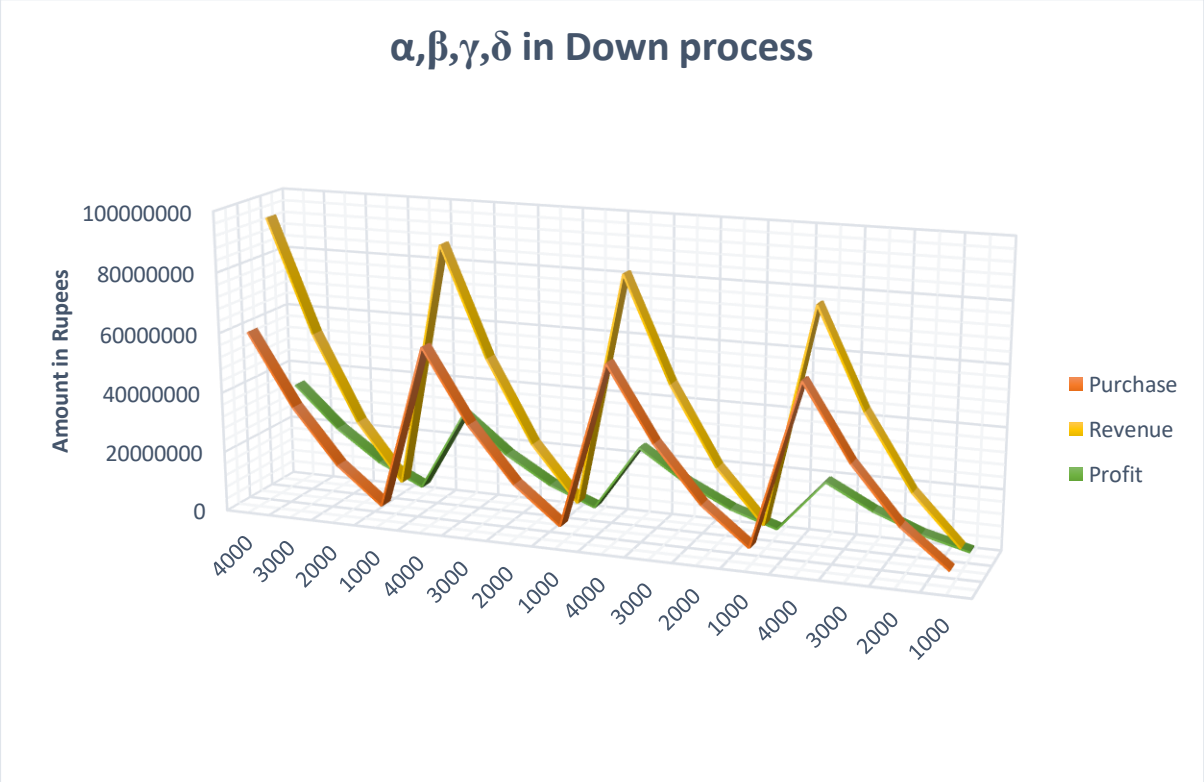
In a good reputed organization with four fast moving gadgets, Purchase cost is (15,000,12000,9000,6000), 40% marginal Profit and ordering cost is Rs.0.5 per unit price, holding cost Rs.2 per unit hold, selling value of four categories are in stages with $D_f(\alpha,\beta,\gamma,\delta) = (5,10,15,20)$%for defectives, loosing amount of 25% depreciation cost in the repairing process and 93% of losing value in Scrap Process.0.53%,2.7%,1.33%,4% and 2% are the Testing, Labor, Additional materials, scrap and clearing charges respectively. Here, (4000, 3000, 2000, 1000) are the Number of gadget and Guaranty, warranty and scrap Periods are 90,30 and 30days resp

TABLES AND GRAPHS

FOR DOWN PROCESS TABLE: 1

	$\tilde{r}$	$\widetilde{P_{ct}}$	$\widetilde{P_c}$	$\tilde{O}$	$\widetilde{H}$	$\widetilde{[TDN]}$	N$\tilde{r}$	$\widetilde{SV_G}$	$\widetilde{[R_{ev1}DN]}$	$\widetilde{[P_1DN]}$
α	4000	15000	60000000	2000	360000	362000	3800	25000	95000000	34638000
	3000	12000	36000000	1500	270000	271500	2850	20000	57000000	20728500
	2000	9000	18000000	1000	180000	181000	1900	15000	28500000	10319000
	1000	6000	6000000	500	90000	90500	950	10000	9500000	3409500
β	4000	15000	60000000	2000	360000	362000	3600	25000	90000000	29638000
	3000	12000	36000000	1500	270000	271500	2700	20000	54000000	17728500
	2000	9000	18000000	1000	180000	181000	1800	15000	27000000	8819000
	1000	6000	6000000	500	90000	90500	900	10000	9000000	2909500
γ	4000	15000	60000000	2000	360000	362000	3400	25000	85000000	24638000
	3000	12000	36000000	1500	270000	271500	2550	20000	51000000	14728500
	2000	9000	18000000	1000	180000	181000	1700	15000	25500000	7319000
	1000	6000	6000000	500	90000	90500	850	10000	8500000	2409500
δ	4000	15000	60000000	2000	360000	362000	3200	25000	80000000	19638000
	3000	12000	36000000	1500	270000	271500	2400	20000	48000000	11728500
	2000	9000	18000000	1000	180000	181000	1600	15000	24000000	5819000
	1000	6000	6000000	500	90000	90500	800	10000	8000000	1909500

GRAPHICAL REPRESENTATION: 1

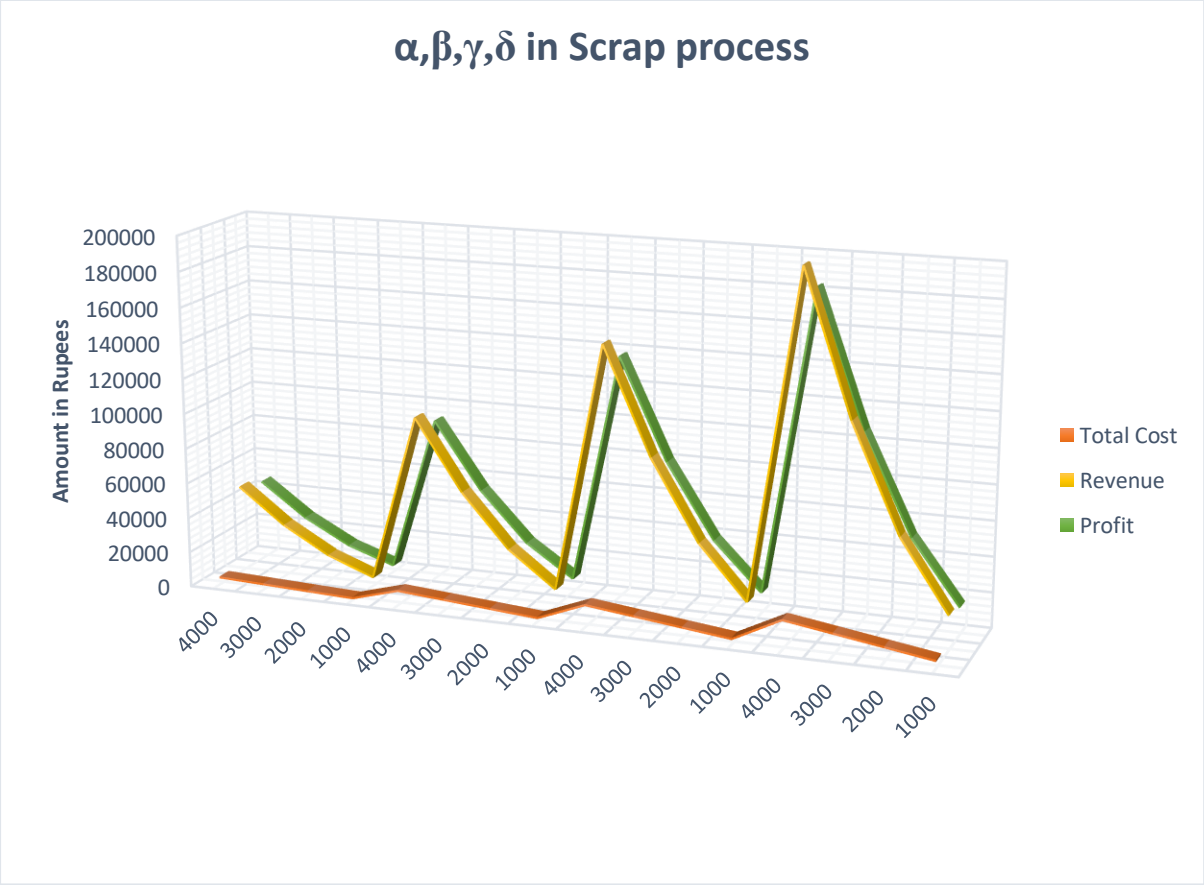


SCRAP/CLEARING PROCESS TABLE: 2:

	$\widetilde{r^{**}}$	$\widetilde{H}$	$\widetilde{SV_{sc}}$	R_4	C_c	$[\widetilde{TRC}]$	$[\widetilde{R_{ev3}Rc}]$	$[\widetilde{P_3RC}]$
α	40	1200	1250	2000	1000	4200	50000	45800
	30	900	1000	1500	750	3150	30000	26850
	20	600	750	1000	500	2100	15000	12900
	10	300	500	500	250	1050	5000	3950
	80	2400	1250	4000	2000	8400	100000	91600

β	60	1800	1000	3000	1500	6300	60000	53700
	40	1200	750	2000	1000	4200	30000	25800
	20	600	500	1000	500	2100	10000	7900
γ	120	3600	1250	6000	3000	12600	150000	137400
	90	2700	1000	4500	2250	9450	90000	80550
	60	1800	750	3000	1500	6300	45000	38700
	30	900	500	1500	750	3150	15000	11850
δ	160	4800	1250	8000	4000	16800	200000	183200
	120	3600	1000	6000	3000	12600	120000	107400
	80	2400	750	4000	2000	8400	60000	51600
	40	1200	500	2000	1000	4200	20000	15800

GRAPHICAL REPRESENATATION: 2



CONCLUSION

Loss of money occurs due to defective goods sometimes reaches assumed partial loss while others considered full loss. In real life, if all buyers are wait or go the next product. Then it is called total loss otherwise all the buyers will left the system however, in certain situations some customers will be able to wait for the next order in order to satisfy their demands during the warranty period (or) guaranty period while others so not wish to or cannot wait hence, they meet their demands from the other sources(partial loss case). From the table (4) heavy loss can be avoided with Up process and addition to that scrap revenue also filled the gap of the gain percentage Moreover, graphical representations show that complete loss reaches to profit percentage.

From the tables (1) AND (2), it can be observed that,

(i) Revenue is decreases when in the Down Process.

(ii) Profit is moderate when in the Down process

(iii) Good quality lot size is decreases when in down process but profit percentage increases

(iv) Again, lot size decreases in the scrap process but total profit percentage increases slightly.

(v) Selling Price is stable when down process

(vi) Selling price is highly decreases in scrap process.

(vii) Partial Loss is increase when in the scrap process instead of full loss.

(viii) Ordering and holding costs are same in all tables with respect to lot size but Profit percentage is varies due to defectives and losing the selling price and brand value.

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