

$$Y = a + bx + cx^2$$

Keterangan:

Y = Biaya Total (Total Cost)

X = Volume Produksi

b/c = Koefisien Regresi

a = Konstanta

Persamaan diatas dapat dicari dengan menggunakan:

$$\text{Persamaan I : } \Sigma Y = N \cdot a + b \cdot \Sigma x + c \cdot \Sigma x^2$$

$$\text{Persamaan II : } \Sigma XY = a \cdot \Sigma x + b \cdot \Sigma x^2 + c \cdot \Sigma x^3$$

$$\text{Persamaan III : } \Sigma X^2 Y = a \cdot \Sigma x^2 + b \cdot \Sigma x^3 + c \cdot \Sigma x^4$$

$$\text{Persamaan IV : Persamaan I} - \text{Persamaan II}$$

$$\text{Persamaan V : Persamaan II} - \text{Persamaan III}$$

$$\text{Persamaan VI : Persamaan IV} - \text{Persamaan V}$$

Nilai c dapat diperoleh dari persamaan VI, nilai b dapat diperoleh dari persamaan IV dan V, dan nilai a dapat diperoleh dari persamaan I, II, atau III. Persamaan-persamaan yang diperoleh dari lampiran 2:

$$\text{I} \quad : 23.051.303 = 12. a + 20.863.000 b + 36.378.019.000.000. c$$

$$\text{II} \quad : 40.125.455.260.000 = 20.863.000. a + 36.378.019.000.000 b + 63.609.918.247.000.000.000. c$$

$$\text{III} \quad : 70.048.405.268.260.000.000 = 36.378.019.000.000 a + 63.609.918.247.000.000.000 b + 111.529.318.871.011.000.000.000.000. c$$

Substitusikan Persamaan I dan Persamaan II, akan diperoleh Persamaan IV dengan cara:

**Persamaan IV:**

$$\text{I.} \quad 23.051.303 = 12. a + 20.863.000 b + 36.378.019.000.000 c$$

$$\text{II.} \quad 40.125.455.260.000 = 20.863.000 a + 36.378.019.000.000 b + 63.609.918.247.000.000.000 c$$

$$\text{I.} \quad \times 1.738.583$$

$$\text{II.} \quad \times 1$$

$$\begin{aligned}
 \text{I.} \quad & 40.076.603.523.649 = 20.863.000. a + 36.272.057.129.000. b + 63.246.205.407.077.000.000. c \\
 \text{II.} \quad & \underline{40.125.455.260.000 = 20.863.000. a + 36.378.019.000.000. b + 63.609.918.247.000.000.000. c} - \\
 & - 48.851.736.351 = 0 - 105.961.871.000. b - 363.712.839.923.000.000. c
 \end{aligned}$$

**Persamaan V:**

$$\begin{aligned}
 \text{II.} \quad & 40.125.455.260.000 = 20.863.000. a + 36.378.019.000.000. b + 63.609.918.247.000.000.000 c \\
 \text{III.} \quad & 70.048.405.268.260.000.000 = 36.378.019.000.000. a + 63.609.918.247.000.000.000. b + 111.529.318.871.011.000.000.000.000. c \\
 & \text{II.} \quad \times 1.743.662 \\
 & \text{III.} \quad \times 1 \\
 \text{II.} \quad & 69.965.231.569.562.120.000 = 36.378.019.000.000. a + 63.430.969.365.578.000.000. b + 110.914.197.270.400.514.000.000.000. c \\
 \text{III.} \quad & \underline{70.048.405.268.260.000.000 = 36.378.019.000.000. a + 63.609.918.247.000.000.000. b + 111.529.318.871.011.000.000.000.000. c} - \\
 & - 83.173.698.697.880.000 = 0 - 178.948.881.422.000.000. b - 615.121.600.610.486.000.000.000. c
 \end{aligned}$$

**Persamaan VI:**

$$\text{IV.} \quad -48.851.736.351 = 0 - 105.961.871.000. b - 363.712.839.923.000.000. c$$

$$\text{V.} \quad -83.173.698.697.880.000 = 0 - 178.948.881.422.000.000. b - 615.121.600.610.486.000.000.000. c$$

$$\text{IV.} \quad \times 1.688.804$$

$$\text{V.} \quad \times 1$$

$$\text{IV.} \quad -82.501.007.756.514.204 = -178.948.881.422.000.000. b - 614.239.698.913.322.092.000.000. c$$

$$\text{V.} \quad -83.173.698.697.880.000 = -178.948.881.422.000.000. b - 615.121.600.610.486.000.000.000. c \quad -$$

$$672.690.941.365.796 = 881.901.697.163.908.000.000. c$$

$$c = \frac{672.690.941.365.796}{881.901.697.163.908.000.000}$$

$$c = 0,000000762$$

Persamaan IV masukkan c:

$$\begin{aligned}
- \quad 48.851.736.351 &= -105.961.871.000. b - 363.712.839.923.000.000. c \\
- \quad 48.851.736.351 &= -105.961.871.000. b - 363.712.839.923.000.000. (0,000000762) \\
- \quad 48.851.736.351 &= -105.961.871.000. b - 277.149.184.021 \\
- \quad 48.851.736.351 + 277.149.184.021 &= -105.961.871.000. b \\
228.327.447.670 &= -105.961.871.000. b \\
b &= \frac{228.327.447.670}{-105.961.871.000} \\
b &= -2,1548076258
\end{aligned}$$

Dari persamaan I masukkan nilai b dan c akan diperoleh nilai a:

$$\begin{aligned}
\text{I} \quad 23.051.303 &= 12. a + 20.863.000 b + 36.378.019.000.000. c \\
23.051.303 &= 12. a + 20.863.000 (-2,1548076258) + 36.378.019.000.000 (0,000000762) \\
23.051.303 &= 12. a - 44.955.751 + 27.720.050 \\
23.051.303 &= 12. a - 17.235.701
\end{aligned}$$

$$23.051.303 + 17.235.701 = 12. a$$

$$40.287.004 = 12. a$$

$$a = \frac{40.287.004}{12}$$

$$a = 3.357.250,3333$$

Dengan diketahui nilai a, b dan c maka fungsi Penerimaan (TR) adalah:

$$TR = a + bx + cx^2$$

$$TR = 3.357.250,3333 - 2,1548076258 x + 0,000000762x^2$$