

fugas

% kenaikan biaya promosi	1	2	3	4	5
% kenaikan penjualan	1	3	4	6	7

→ Bagaimana hubungan antara variabel x & y ?

→ Buatlah Persamaan $\hat{y} = a + \beta x$!

→ Berdasarkan data diatas, dg $x = 0,05$

Ujilah koefisien B, apakah x mempengaruhi y ?

→ Berapa ramalan \hat{y} jika $x = 10$?

Jawab !

• hubungan antara x & y ?

x	y	xy	x^2	y^2	
1	1	1	1	1	$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{n\sum x^2 - (\sum x)^2} \sqrt{n\sum y^2 - (\sum y)^2}}$ $= \frac{5(78) - (15)(21)}{\sqrt{5(55) - 15^2} \sqrt{5(111) - 21^2}}$ $= \frac{390 - 315}{\sqrt{(50)} \sqrt{(114)}} = 75$
2	3	6	4	9	
3	4	12	9	16	
4	6	24	16	36	
5	7	35	25	49	
$\sum x = 15$	$\sum y = 21$	$\sum xy = 78$	$\sum x^2 = 55$	$\sum y^2 = 111$	$\sqrt{(50)} \sqrt{(114)} \quad (7,07) (10,67)$

$$= 75 = 0,99$$

75,43

nilai $r = 0,99$ yang mana

menunjukkan hubungan x & y kuat

Date : _____

No : _____

→ persamaan $\hat{y} = a + \beta x$

$$\beta = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

$$= \frac{5(78) - (15)(21)}{5(55) - (15)^2} = \frac{390 - 315}{275 - 225} = \frac{75}{50} = 1,5$$

$$a = \frac{\sum y}{n} - b \frac{\sum x}{n} = \frac{21}{5} - 1,5 \left(\frac{15}{5} \right)$$

$$= 4,2 - 4,5 = -0,3 \quad \hat{y} = -0,3 + 1,5x$$

• uji koefisien

$$t = \frac{r \sqrt{n-2}}{\sqrt{1-r^2}} = \frac{0,99 \sqrt{5-2}}{\sqrt{1-(0,99)^2}} = \frac{0,99 \cdot 1,73}{\sqrt{0,0199}}$$

$$= \frac{1,7127}{0,14} = 12,23$$

karena $t_{7/2} = 12,23 > 0,05$ maka variabel x tidak signifikan, maka variabel x tidak mempengaruhi variabel y .

→ Hamalan : $\hat{y} = -0,3 + 1,5x$

$$= -0,3 + 1,5(10)$$

$$= 14,7$$