

No. :

Date :

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202220011

### Tugas Pekan 2

Harga Panen Bawang Merah dan Harga tiap rata-rata kg

thn	x	y	thn	x	y
1920	3.2	1.5	1935	3.9	0.9
30	3.4	1.3	36	3.3	1.4
31	3.8	0.9	37	4.0	0.7
32	3.7	0.8	38	3.8	0.9
34	4.1	0.7	40	4.5	1.2

Penyelesaian :

$$\bar{x} = 40.2 \quad \bar{x}^2 = 348.28$$

$$\bar{y} = 10.3 \quad \bar{y}^2 = 11.39$$

$$\bar{xy} = 50.82 \quad n = 10$$

$$b = \frac{n \sum u_i y_i - \bar{x}_i \cdot \bar{y}_i}{n \sum u_i^2 - (\sum u_i)^2} = \frac{10(50.82) - (40.2)(10.3)}{10(348.28) - (40.2)^2}$$

$$= \frac{508.2 - 496.46}{3482.8 - 2323.24} = \frac{38.74}{1159.56} = 0.033409$$

= k g

$$a = \bar{y} - b(\bar{x})$$

$$= 1.03 - 0.0334(40.2) = 1.03 - 0.1609 = 0.8691$$

$$\hat{y} = a + bx = 0.8691 + 0.0334x$$

Uji koefisien regresi dan uji tuntas

$$\text{Regres } a = \frac{(\sum y_i)^2}{n} = \frac{(10.3)^2}{10} = 10.609$$

$$\text{Regres } b/a = b \left[ \frac{\sum u_i y_i - \bar{x}_i \bar{y}_i}{n} \right]$$

$$= 0.01012 \left[ \frac{50.82 - (40.2)(10.3)}{10} \right]$$

$$= 0.01012 \left[ \frac{50.82 - 496.46}{10} \right]$$

$$= 0.01012 [50.82 - 49.646]$$

$$= 0.01012 [1.174] = 0.01188088$$

No. :

Date :

$x$	$y$	$\sum \sum (y_{ju} - \bar{y}_j)^2$
3.2	1.5	0
3.4	1.3	0
3.8	0.9	0
3.7	0.8	0
4.1	0.7	0
2.9	0.9	0
3.3	1.4	0
4.0	0.7	0
1.5	1.2	0
total		0

$k=9$

Sehingga :

Sumber	DK	Jk	RJK
Regresi a	1	10.609	<del>0.1188088</del>
Regresi b/a	1	0.01188088	0.01188088
Residu	$n-2$	$\sum y_i^2 - (\sum y_i)^2/n - b \sum x_i y_i - (\sum x_i)^2/n$	Jk Residu $n-2$
		$11.39 - (10.3)^2/10 - 0.01188088(50.8) - 5.082$	$= -4.8152984$
		$50.82 = 11.39 - 10.609 - 0.5142984$	$= -0.609123$
		$-5.082 = -4.8152984$	
Tuna Cocok	$k-2$ $= 7$	Jk Residu - Jk Galat	Jk Residu $k-2$
		$-4.8152984 - 0 = -4.8152984$	$= -4.8152984$
			$= 0.19738556$
Galat	$n-k$ $= 1$	$\sum \sum (y_{ju} - \bar{y}_j)^2$ $= 0$	
Total	$n-1$ $= 9$	$\sum y_i^2$ $= 11.39$	

# Koefisien Regresi

F Perhitungan =  $\frac{\text{Jk Regresi b/a}}{\text{Jk Residu} / (n-2)} = \frac{0.01188088}{-4.8152984/8} = \frac{0.01188088}{-0.6019123} = -0.019738556$

No. : \_\_\_\_\_

Date : \_\_\_\_\_

$$F_{\alpha; 1; n-2} = F$$

$$F_{\alpha; 1; 8}, F_{\text{tabel}} = 5,32$$

# uji linieritas

$$F_{\text{Perhitungan}} = \frac{(\sum k \text{ Tuna}) (\text{Cocok}) / k-2}{(\sum k \text{ Galat}) / n-2}$$

$$= \frac{-4,81298917}{0,8} = -0,60174639375$$

$$F_{\alpha; 8; 8}, F_{\text{tabel}} = 3,44$$

Kesimpulan:

1. Untuk menguji koefisien regresi ternyata tidak diterima, berarti koefisien regresi mempunyai arti.
2. Untuk menguji linieritas tidak diterima / tidak relevan

No. : \_\_\_\_\_

Date : \_\_\_\_\_

$$F_{\alpha} = 1 / (n-2) = 0$$

$$F_{\alpha} = 1 / 8, F_{\text{tabel}} = 5,32$$

# uji (independen)

$$F_{\text{Perhitungan}} = \frac{(\sum k \text{ Tuna}) (\text{cocok}) / k-2}{(\sum k \text{ Galat}) / n-2}$$

$$= \frac{-4,815298417}{0,8} = -0,601910521$$

$$F_{\alpha} = 0,8, F_{\text{tabel}} = 3,44$$

Kesimpulan:

1. Untuk menguji koefisien regresi ternyata hasilnya diterima, berarti koefisien regresi mempunyai arti.
2. Untuk menguji (independen) tdk diterima / tdk relevan