

Tugas Ancova

No.	Treatment a		Treatment b	
	x	y	x	y
1	175	135	205	165
2	175	145	175	195
3	235	205	230	160
4	215	175	190	155
5	195	140	155	150
6	195	190	105	170

Kriteria Pengujian

tolak H_0 jika $A > F(\alpha, Df_A, Df_B)$

tolak H_0 jika $A < F(\alpha, Df_A, Df_B)$

Tabel Statistik

No.	Treatment A				Treatment B			
	x	x ²	y	y ²	x	x ²	y	y ²
1	175	30.625	205	10.225	205	42.025	165	27.225
2	175	30.625	175	21.025	175	30.625	195	38.025
3	235	54.225	230	42.025	230	52.900	160	25.600
4	215	46.225	190	36.625	190	14.100	155	24.025
5	195	38.025	155	14.800	155	24.625	150	22.500
6	195	38.025	125	36.500	185	34.225	170	28.900
	1.190	238.750	990	167.680	1.140	219.900	995	166.275

$$4. \text{Korelasi } r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

$$= \frac{2629,16}{\sqrt{6741,66}} = 0,42$$

$$5. \text{JK regresi} = \beta \times \sum xy$$

$$= 0,42 \times 2629,16 = 4918,67$$

b. Sumber Variasi dalam (JK dalam rerata)

$$1. \text{JK yd} = \sum y^2 - \frac{(\sum yA)^2}{NA}$$

$$= 335.875 - \left(\frac{990^2}{6} + \frac{995^2}{6} \right) = 5520,83$$

$$2. \text{JK xd} = \sum x^2 - \frac{(\sum xA)^2}{NA}$$

$$= 458,650 - \left(\frac{1.190^2}{6} + \frac{1.190^2}{6} \right)$$

$$3. \text{JK xy} = \sum xy - \frac{(\sum xA)(\sum yA)}{NA}$$

$$= 388,050 - \left(\frac{1190 \times 950}{6} + \frac{1.190 \times 995}{6} \right)$$

$$= 2650$$

$$4. \text{Beta } d = \frac{\sum xy}{\sum x_i^2}$$

$$= \frac{2,650}{6033,33} = 0,43$$

$$5. \text{JK reg } d = \beta d \times \sum xy$$

$$= 0,43 \times 2,650 = 1139,5$$

$$6. \text{JK rest} = \text{JK } y_d - \text{JK reg } d$$

$$= 5520,83 - 1139,5 = 4381,33$$

C. Sumber Variasi Antar

$$\text{JK}_A = \text{JK rest} - \text{JK reg } d$$

$$= 4418,67 - 4381,33 = 37,34$$

D. Menghitung derajat kebebasan.

$$DK_A = a - 1 \qquad DK_E = N - 1 - M$$

$$= 2 - 1 = 1 \qquad = 12 - 1 - 1 = 10$$

$$DK_D = N - a - M$$

$$= 12 - 2 - 1 = 9$$

E. Menghitung rata-rata Kuadrat (RK)

$$RK_A = \text{JK}_A / DK_A \qquad RK_D = \text{JK}_D / DK_D$$

$$= \frac{37,34}{1} = 37,34 \qquad = \frac{4381,33}{9}$$

$$= 486,81$$

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F. Menghitung harga F

$$F^* = \frac{R_{KA}}{R_{KB}}$$
$$= \frac{37,34}{486,81} = 0,07$$

Rangkuman Ancova 1 faktor

Statistik	JK	DK	RK	F	Ftabel	
Antar	37,34	1	37,34	0,07	5,12	-
Dim(Error)	481,33	9	486,81	-	-	-
total (keseluruhan)	4410,67	10	-	-	-	-

Perhitungan F dihitung = 0,07 dan Ftabel

1 - 0,05 ; 1 ; 9 = 5,12

maka F hitung < Ftabel, maka H₀ diterima.

Rebrand Athand D.F

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Tugas Analisis Korelasi

x	y
Test score (out of 10)	Hours playing Video games/week
8	2
3	2
5	1.5
7	1
1	2.5
2	3
6	1.5
7	2
4	2
9	1.5

No.	x_i	y_i	$x_i y_i$	$x_i y_i^2$	y_i^2
1	8	2	16	64	4
2	3	2	6	9	4
3	5	1.5	7.5	25	2.25
4	7	1	7	49	1
5	1	2.5	2.5	1	6.25
6	2	3	6	4	9
7	6	1.5	9	36	2.25
8	7	2	14	49	4
9	4	2	8	16	4
10	9	1.5	13.5	81	2.25
total	52	19	89.5	33.4	29

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$$r_{xy} = \frac{n \sum x_i y_i - \sum x_i \cdot \sum y_i}{\sqrt{(n \sum x_i^2 - (\sum x_i)^2) (n \sum y_i^2 - (\sum y_i)^2)}}$$

$$= r_{xy} = \frac{10 (895) - (52) \cdot (49)}{\sqrt{10 (334 - (52)^2) (10 (39) - (19)^2)}}$$

$$= \frac{895 - 988}{\sqrt{(636)(29)}} = \frac{-93}{\sqrt{18444}}$$

$$= \frac{-93}{135980} = 0.68$$