

Lampiran 1

**Tabel 1. Daftar Hasil Pengukuran Lingkar *Thorax* (X<sub>2</sub>)**

<b>No.</b>	<b>Nama</b>	<b>Upper</b>	<b>Middle</b>	<b>Lower</b>
1	Samuel Simamora	94	89	82
		98	94	87
2	Dimas Pamungkas	88	85	79
		92	88	84
3	Agus Sutiana	87	85	77
		91	90	81
4	Ramadhan Prasadhi	90	86	81
		94	91	85
5	Chrisnendi Pangestu	90	88	85
		94	94	90
6	Ray Fernandes	93	90	87
		97	95	93
7	M. Krisna Desto	84	82	79
		88	85	84
8	Hardimas Setia	88	85	84
		92	90	91
9	Helwi Januar	99	93	82
		103	98	88
10	Edy Susanto	90	85	83
		95	89	90
11	Sentot Suranto	94	90	88
		98	95	92
12	Eko Budi Yanto	83	80	73
		88	84	80
13	Irkham Ahmad	87	84	82
		91	90	89

14	Reno Prayoga	88	86	83
		92	90	89
15	Ayuda Rispati P	84	80	74
		86	86	79
16	M Anggana Sulaiman	108	107	94
		111	110	98
17	Fajar Muhammad R	93	88	80
		96	92	84
18	Rifki Risanggeni	87	83	73
		92	87	77
19	Miftahul Ulum	89	86	85
		94	90	90
20	Mardiansyah Adhi	83	79	73
		87	82	78

## Lampiran 2

**Tabel 2. Hasil Tes Pengukuran  
Kapasitas Vital Paru ( $X_1$ ), Pengembangan Rongga *Thorax* ( $X_2$ ) dan  
Kapasitas Aerobik Maksimal (Y)**

No.	Nama	$X_1$	$X_2$	Y
1	Samuel Simamora	3900	14	48.4
2	Dimas Pamungkas	3600	13	43.9
3	Agus Sutiana	3700	13	44.5
4	Ramadhan Prasadhi	3900	14	48
5	Chrisnendi Pangestu	4200	15	50.2
6	Ray Fernandes	4100	15	49.9
7	M. Krisna Desto	3500	12	46.8
8	Hardimas Setia P	4600	16	51.6
9	Helwi Januar	4000	15	50.5
10	Edy Susanto	4200	16	47.1
11	Sentot Suranto	3900	13	40.2
12	Eko Budi Yanto	4500	16	49.9
13	Irkham Ahmad	4600	17	52.2
14	Reno Prayoga	3900	14	40.8
15	Ayuda Rispati P	3500	13	38.9
16	M Anggana Sulaiman	3200	10	36.8
17	Fajar Muhammad R	3300	11	38.9
18	Rifki Risanggeni	3500	13	40.8
19	Miftahul Ulum	3900	14	45.2
20	Mardiansyah Adhi	3400	12	40.2

### Lampiran 3

#### Langkah-langkah perhitungan Distribusi Frekuensi

##### A. Variabel Kapasitas Vital Paru ( $X_1$ )

$$\begin{aligned}
 \text{Rentang (R)} &: \text{Data Terbesar} - \text{Data Terkecil} \\
 &: 4600 - 3200 \\
 &: 1400 \\
 \text{Banyak Kelas (BK)} &: 1 + (3.3) \log n \\
 &: 1 + (3.3) \log 20 \\
 &: 1 + (3.3) 1.301 \\
 &: 1 + 4.29 \\
 &: 5.29 (5) \\
 \text{Panjang Kelas (PK)} &: \frac{R}{BK} \\
 &: \frac{1400}{5} \\
 &: 280
 \end{aligned}$$

##### B. Variabel Pengembangan Rongga Thorax ( $X_2$ )

$$\begin{aligned}
 \text{Rentang (R)} &: \text{Data Terbesar} - \text{Data Terkecil} \\
 &: 17 - 10 \\
 &: 7 \\
 \text{Banyak Kelas (BK)} &: 1 + (3.3) \log n \\
 &: 1 + (3.3) \log 20 \\
 &: 1 + (3.3) 1.301 \\
 &: 1 + 4.29
 \end{aligned}$$

$$: 5.29 (5)$$

$$\text{Panjang Kelas (PK)} : \frac{R}{BK}$$

$$: \frac{7}{5}$$

$$: 1.4$$

### C. Variabel Kapasitas Aerobik Maksimal (Y)

$$\text{Rentang (R)} : \text{Data Terbesar} - \text{Data Terkecil}$$

$$: 52.2 - 36.8$$

$$: 15.4$$

$$\text{Banyak Kelas (BK)} : 1 + (3.3) \log n$$

$$: 1 + (3.3) \log 20$$

$$: 1 + (3.3) 1.301$$

$$: 1 + 4.29$$

$$: 5.29 (5)$$

$$\text{Panjang Kelas (PK)} : \frac{R}{BK}$$

$$: \frac{15.4}{5}$$

$$: 3.08$$

## Lampiran 4

**Tabel 3. Hasil Tes Pengukuran Dikuadratkan**

No.	Nama	$X_1$	$X_2$	Y	$X_1^2$	$X_2^2$	$Y^2$
1	Muel	3900	14	48.4	15210000	196	2342.56
2	Dimas	3600	13	43.9	12960000	169	1927.21
3	Agus	3700	13	44.5	13690000	169	1980.25
4	Adhi	3900	14	48	15210000	196	2304
5	Chris	4200	15	50.2	17640000	225	2520.04
6	Ray	4100	15	49.9	16810000	225	2490.01
7	Krisna	3500	12	46.8	12250000	144	2190.24
8	Hardimas	4600	16	51.6	21160000	256	2662.56
9	Helwi	4000	15	50.5	16000000	225	2550.25
10	Edy	4200	16	47.1	17640000	256	2218.41
11	Sentot	3900	13	40.2	15210000	169	1616.04
12	Eko	4500	16	49.9	20250000	256	2490.01
13	Irkham	4600	17	52.2	21160000	289	2724.84
14	Reno	3900	14	40.8	15210000	196	1664.64
15	Ayuda	3500	13	38.9	12250000	169	1513.21
16	Angga	3200	10	36.8	10240000	100	1354.24
17	Fajar	3300	11	38.9	10890000	121	1513.21
18	Kiki	3500	13	40.8	12250000	169	1664.64
19	Ulum	3900	14	45.2	15210000	196	2043.04
20	Mardi	3400	12	40.2	11560000	144	1616.04
<b>JUMLAH</b>		<b>77400</b>	<b>276</b>	<b>904.8</b>	<b>302800000</b>	<b>3870</b>	<b>41385.44</b>

## Lampiran 5

Langkah-langkah perhitungan T-Skor Hasil Pengukuran Kapasitas Vital Paru, Pengembangan Rongga *Thorax*, dan Kapasitas Aerobik Maksimal (VO<sub>2</sub>Max).

Menggunakan rumus :

$$\text{T-Skor} = 50 \pm 10 \left( \frac{X_1 - \bar{X}_1}{STD} \right)$$

Langkah-langkah perhitungan :

### A. Menghitung Rata-Rata dan Simpangan Baku

#### a. Variabel Kapasitas Vital Paru (X<sub>1</sub>)

Diketahui :  $\sum X_1 = 77400$

$$\sum X_1^2 = 302800000$$

$$n = 20$$

$$\begin{aligned} 1. \text{ Rata-Rata } X_1 &= \frac{\sum X_1}{n} \\ &= \frac{77400}{20} \\ &= 3870 \end{aligned}$$

$$2. \text{ Simpangan Baku} = \sqrt{\frac{n \sum X_1^2 - (\sum X_1)^2}{n(n-1)}}$$

$$\begin{aligned}
&= \sqrt{\frac{20 (302800000) - (77400)^2}{20 (20 - 1)}} \\
&= \sqrt{\frac{6056000000 - 5990760000}{380}} \\
&= \sqrt{171684.21} \\
&= 414.35
\end{aligned}$$

b. Variabel Pengembangan Rongga *Thorax* ( $X_2$ )

Diketahui :  $\sum X_2 = 276$

$$\sum X_2^2 = 3870$$

$$n = 20$$

$$\begin{aligned}
1. \text{ Rata-Rata } X_1 &= \frac{\sum X_2}{n} \\
&= \frac{276}{20} \\
&= 13.8
\end{aligned}$$

$$\begin{aligned}
2. \text{ Simpangan Baku} &= \sqrt{\frac{n \sum X_2^2 - (\sum X_2)^2}{n(n-1)}} \\
&= \sqrt{\frac{20 (3870) - (276)^2}{20 (20 - 1)}} \\
&= \sqrt{\frac{77400 - 76176}{380}} \\
&= \sqrt{3.22} \\
&= 1.79
\end{aligned}$$



## c. Variabel Kapasitas Aerobik Maksimal (Y)

$$\begin{aligned}\text{Diketahui} \quad : \Sigma Y &= 904.8 \\ \Sigma Y^2 &= 41385.44 \\ n &= 20\end{aligned}$$

$$\begin{aligned}1. \text{ Rata-Rata } Y &= \frac{\Sigma Y}{n} \\ &= \frac{904.8}{20} \\ &= 45.24\end{aligned}$$

$$\begin{aligned}2. \text{ Simpangan Baku} &= \sqrt{\frac{n \Sigma Y^2 - (\Sigma Y)^2}{n(n-1)}} \\ &= \sqrt{\frac{20(41385.44) - (904.8)^2}{20(20-1)}} \\ &= \sqrt{\frac{827708.8 - 818663.04}{380}} \\ &= \sqrt{23.8} \\ &= 4.88\end{aligned}$$

## B. Menentukan T-Skor

Contoh : n ke-1 dari  $X_1$

$$\begin{aligned}\text{T-Skor} &= 50 + 10 \left( \frac{3900 - 3870}{414.35} \right) \\ &= 50 + 10 (0.07) \\ &= 50 + (0.7) \\ &= 50.7\end{aligned}$$

Contoh : n ke-1 dari  $X_2$

$$\begin{aligned}\text{T-Skor} &= 50 + 10 \left( \frac{14 - 13.8}{1.79} \right) \\ &= 50 + 10 (0.11) \\ &= 50 + 1.1 \\ &= 51.1\end{aligned}$$

Contoh : n ke-1 dari Y

$$\begin{aligned}\text{T-Skor} &= 50 + 10 \left( \frac{48.4 - 45.24}{4.88} \right) \\ &= 50 + 10 (0.65) \\ &= 50 + 6.5 \\ &= 56.5\end{aligned}$$

## Lampiran 6

Tabel 4. Hasil T-Skor

No.	Nama	T-Skor $X_1$	T-Skor $X_2$	T-Skor Y	$X_1^2$	$X_2^2$	$Y^2$
1	Muel	50.72	51.11	56.52	2572.52	2612.232	3194.5
2	Dimas	43.46	45.53	47.25	1888.77	2072.981	2232.6
3	Agus	45.92	45.53	48.48	2108.65	2072.981	2350.3
4	Adhi	50.72	51.11	55.66	2572.52	2612.232	3098
5	Chris	57.96	56.71	60.16	3359.36	3216.024	3619.2
6	Ray	55.56	56.71	59.55	3086.91	3216.024	3546.2
7	Krisna	41.12	39.94	52.97	1690.85	1595.204	2805.8
8	Hardimas	67.62	62.29	63.03	4572.46	3880.044	3972.8
9	Helwi	53.12	56.71	60.78	2821.73	3216.024	3694.2
10	Edy	57.96	62.29	53.81	3359.36	3880.044	2895.5
11	Sentot	50.72	45.53	39.67	2572.52	2072.981	1573.7
12	Eko	65.21	62.29	59.55	4252.34	3880.044	3546.2
13	Irkham	67.62	67.88	64.26	4572.46	4607.694	4129.3
14	Reno	50.72	51.11	40.99	2572.52	2612.232	1680.2
15	Ayuda	41.07	45.53	37.02	1686.74	2072.981	1370.5
16	Angga	33.81	28.78	32.71	1143.12	828.2884	1069.9
17	Fajar	36.24	34.36	37.01	1313.34	1180.61	1369.7
18	Kiki	41.07	45.53	40.99	1686.74	2072.981	1680.2
19	Ulum	50.72	51.12	49.92	2572.52	2613.254	2492
20	Mardi	38.66	39.94	39.67	1494.6	1595.204	1573.7
<b>JUMLAH</b>		<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>51900</b>	<b>51900</b>	<b>51900</b>

## Lampiran 7

## Menghitung Rata-Rata dan Simpangan Baku

a. Variabel Kapasitas Vital Paru ( $X_1$ )

Diketahui :  $\sum X_1 = 1000$

$$\sum X_1^2 = 51900$$

$$n = 20$$

$$1. \text{ Rata-Rata } X_1 = \frac{\sum X_1}{n}$$

$$= \frac{1000}{20}$$

$$= 50$$

$$2. \text{ Simpangan Baku} = \sqrt{\frac{n \sum X_1^2 - (\sum X_1)^2}{n(n-1)}}$$

$$= \sqrt{\frac{20 (51900) - (1000)^2}{20(20-1)}}$$

$$= \sqrt{\frac{1038000 - 1000000}{380}}$$

$$= \sqrt{100}$$

$$= 10$$

b. Variabel Pengembangan Rongga *Thorax* ( $X_2$ )

Diketahui :  $\sum X_2 = 1000$

$$\sum X_2^2 = 51900$$

$$n = 20$$

$$1. \text{ Rata-Rata } X_2 = \frac{\sum X_2}{n}$$

$$= \frac{1000}{20}$$

$$= 50$$

$$2. \text{ Simpangan Baku} = \sqrt{\frac{n \sum X_2^2 - (\sum X_2)^2}{n(n-1)}}$$

$$= \sqrt{\frac{20 (51900) - (1000)^2}{20(20-1)}}$$

$$= \sqrt{\frac{1038000 - 1000000}{380}}$$

$$= \sqrt{100}$$

$$= 10$$

## c. Variabel Kapasitas Aerobik Maksimal (Y)

Diketahui :  $\sum Y = 1000$

$$\sum Y^2 = 51900$$

$$n = 20$$

$$1. \text{ Rata-Rata } Y = \frac{\sum Y}{n}$$

$$= \frac{1000}{20}$$

$$= 50$$

$$2. \text{ Simpangan Baku} = \sqrt{\frac{n \sum Y^2 - (\sum Y)^2}{n(n-1)}}$$

$$= \sqrt{\frac{20 (51900) - (1000)^2}{20(20-1)}}$$

$$= \sqrt{\frac{1038000 - 1000000}{380}}$$

$$= \sqrt{100}$$

$$= 10$$

## Lampiran 8

## Mencari Persamaan Regresi

1. Regresi Y atas  $X_1$ 

Diketahui	:	$\sum X_1 = 1000$	$\sum X_1^2 = 51900$
		$\sum Y = 1000$	$\sum Y^2 = 51900$
		$\sum X_1 Y = 51588.82$	$n = 20$

$$\begin{aligned}
 a &= \frac{(\sum Y)(\sum X_1^2) - (\sum X_1)(\sum X_1 Y)}{n \sum X_1^2 - (\sum X_1)^2} \\
 &= \frac{(1000)(51900) - (1000)(51588.82)}{20(51900) - (1000)^2} \\
 &= \frac{51900000 - 51588820}{1038000 - 1000000} \\
 &= \frac{311180}{38000} \\
 &= 8.189
 \end{aligned}$$

$$\begin{aligned}
 b &= \frac{n(\sum X_1 Y) - (\sum X_1)(\sum Y)}{n \sum X_1^2 - (\sum X_1)^2} \\
 &= \frac{(20)(51588.82) - (1000)(1000)}{20(51900) - (1000)^2} \\
 &= \frac{1031776.4 - 1000000}{1038000 - 1000000} \\
 &= \frac{31776.4}{38000} \\
 &= 0.836
 \end{aligned}$$

Jadi persamaan regresi Y terhadap  $X_1$  adalah  $\hat{Y} = 8.189 + 0.836X_1$

2. Regresi Y atas  $X_2$ 

$$\begin{array}{ll}
 \text{Diketahui} & : \sum X_2 = 1000 \qquad \qquad \qquad \sum X_2^2 = 51900 \\
 & \sum Y = 1000 \qquad \qquad \qquad \sum Y^2 = 51900 \\
 & \sum X_2 Y = 51594.98 \qquad \qquad n = 20
 \end{array}$$

$$\begin{aligned}
 a &= \frac{(\sum Y)(\sum X_2^2) - (\sum X_2)(\sum X_2 Y)}{n \sum X_2^2 - (\sum X_2)^2} \\
 &= \frac{(1000)(51900) - (1000)(51594.98)}{20(51900) - (1000)^2} \\
 &= \frac{51900000 - 51594980}{1038000 - 1000000} \\
 &= \frac{305020}{38000} \\
 &= 8.027
 \end{aligned}$$

$$\begin{aligned}
 b &= \frac{n(\sum X_2 Y) - (\sum X_2)(\sum Y)}{n \sum X_2^2 - (\sum X_2)^2} \\
 &= \frac{(20)(51594.98) - (1000)(1000)}{20(51900) - (1000)^2} \\
 &= \frac{1031899.6 - 1000000}{1038000 - 1000000} \\
 &= \frac{31899.6}{38000} \\
 &= 0.839
 \end{aligned}$$

Jadi persamaan regresi Y terhadap  $X_2$  adalah  $\hat{Y} = 8.027 + 0.839X_2$



### 3. Regresi Ganda Y atas $X_1$ dan $X_2$

Dicari dengan rumus sebagai berikut :

$$b_0 = \bar{Y} - b_1 \bar{X}_1 - b_2 \bar{X}_2$$

$$b_1 = \frac{(\sum x_2^2)(\sum x_1 y) - (\sum x_1 x_2)(\sum x_2 y)}{(\sum x_1^2)(\sum x_2^2) - (\sum x_1 x_2)^2}$$

$$b_2 = \frac{(\sum x_1^2)(\sum x_2 y) - (\sum x_1 x_2)(\sum x_1 y)}{(\sum x_1^2)(\sum x_2^2) - (\sum x_1 x_2)^2}$$

Dimana :

$$\sum y^2 = \sum Y^2 - \frac{(\sum Y)^2}{n}$$

$$\sum X_1^2 = \sum X_1^2 - \frac{(\sum X_1)^2}{n}$$

$$\sum X_2^2 = \sum X_2^2 - \frac{(\sum X_2)^2}{n}$$

$$\sum X_1 Y = \sum X_1 Y - \frac{(\sum X_1)(\sum Y)}{n}$$

$$\sum X_2 Y = \sum X_2 Y - \frac{(\sum X_2)(\sum Y)}{n}$$

$$\sum X_1 X_2 = \sum X_1 X_2 - \frac{(\sum X_1)(\sum X_2)}{n}$$

Diketahui :

$$\bar{X}_1 = 50 \quad \sum X_1 = 1000 \quad \sum X_1^2 = 51900 \quad \sum X_1 Y = 51588.82$$

$$\bar{X}_2 = 50 \quad \sum X_2 = 1000 \quad \sum X_2^2 = 51900 \quad \sum X_2 Y = 51594.98$$

$$\overline{Y} = 50 \quad \Sigma Y = 1000 \quad \Sigma Y^2 = 51900 \quad \Sigma X_1 X_2 = 51817.47$$

Jadi,

$$\begin{aligned} \Sigma y^2 &= \Sigma Y^2 - \frac{(\Sigma Y)^2}{n} \\ &= 51900 - \frac{(1000)^2}{20} \\ &= 1900 \end{aligned}$$

$$\begin{aligned} \Sigma x_1^2 &= \Sigma X_1^2 - \frac{(\Sigma X_1)^2}{n} \\ &= 51900 - \frac{(1000)^2}{20} \\ &= 1900 \end{aligned}$$

$$\begin{aligned} \Sigma x_2^2 &= \Sigma X_2^2 - \frac{(\Sigma X_2)^2}{n} \\ &= 51900 - \frac{(1000)^2}{20} \\ &= 1900 \end{aligned}$$

$$\begin{aligned} \Sigma x_1 y &= \Sigma X_1 Y - \frac{(\Sigma X_1)(\Sigma Y)}{n} \\ &= 51588.82 - \frac{(1000)(1000)}{20} \\ &= 1588.82 \end{aligned}$$

$$\Sigma x_2 y = \Sigma X_2 Y - \frac{(\Sigma X_2)(\Sigma Y)}{n}$$

$$= 51594.98 - \frac{(1000)(1000)}{20}$$

$$= 1594.98$$

$$\sum x_1 x_2 = \sum X_1 X_2 - \frac{(\sum X_1)(\sum X_2)}{n}$$

$$= 51817.47 - \frac{(1000)(1000)}{20}$$

$$= 1817.47$$

$$b_1 = \frac{(\sum x_2^2)(\sum x_1 y) - (\sum x_1 x_2)(\sum x_2 y)}{(\sum x_1^2)(\sum x_2^2) - (\sum x_1 x_2)^2}$$

$$= \frac{(1900)(1588.82) - (1817.47)(1594.98)}{(1900)(1900) - (1817.47)^2}$$

$$= \frac{3018758 - 2898828.3}{3610000 - 3303197.2}$$

$$= \frac{119929.7}{306802.8}$$

$$= 0.391$$

$$b_2 = \frac{(\sum x_1^2)(\sum x_2 y) - (\sum x_1 x_2)(\sum x_1 y)}{(\sum x_1^2)(\sum x_2^2) - (\sum x_1 x_2)^2}$$

$$= \frac{(1900)(1594.98) - (1817.47)(1588.82)}{(1900)(1900) - (1817.47)^2}$$

$$= \frac{3030462 - 2887632.7}{3610000 - 3303197.2}$$

$$= \frac{142829.3}{306802.8}$$

$$= 0.465$$

$$\begin{aligned}b_0 &= \bar{Y} - b_1 \bar{X}_1 - b_2 \bar{X}_2 \\&= 50 - (0.391 \times 50) - (0.465 \times 50) \\&= 50 - 19.55 - 23.25 \\&= 7.2\end{aligned}$$

Jadi persamaan regresi ganda Y terhadap  $X_1$  dan  $X_2$  adalah  $\hat{Y} = 7.2 + 0.391X_1 + 0.465X_2$

## Lampiran 9

## Mencari Koefisien Korelasi dan Uji Keberartian Koefisien Korelasi

1. Koefisien Korelasi  $r_{X_1Y}$ 

$$\begin{aligned}
 r_{X_1Y} &= \frac{n \sum X_1 Y - (\sum X_1) (\sum Y)}{\sqrt{\{n \sum X_1^2 - (\sum X_1)^2\} \{n \sum Y^2 - (\sum Y)^2\}}} \\
 &= \frac{20 (51588.82) - (1000) (1000)}{\sqrt{\{20 (51900) - (1000)^2\} \{20 (51900) - (1000)^2\}}} \\
 &= \frac{1031776.4 - 1000000}{\sqrt{(1038000) - (1000000) (1038000) - (1000000)}} \\
 &= \frac{31776.4}{\sqrt{1444000000}} \\
 &= \frac{31776.4}{38000} \\
 &= 0.836
 \end{aligned}$$

## 2. Uji Keberartian Koefisien Korelasi

$$\begin{aligned}
 t &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\
 &= \frac{0.836\sqrt{20-2}}{\sqrt{1-(0.836)^2}} \\
 &= \frac{0.836 \times 4.24}{\sqrt{1-(0.836)^2}} \\
 &= \frac{0.836 \times 4.24}{\sqrt{1-0.699}}
 \end{aligned}$$

$$= \frac{3.545}{\sqrt{0.301}}$$

$$= \frac{3.545}{0.549}$$

$$= 6.457$$

$$\begin{aligned} \text{Tabel dk} &= n - 2 \\ &= 20 - 2 \\ &= 18 \end{aligned}$$

$$\begin{aligned} t_{\text{tabel}} &= dk : 1 - \frac{1}{2} \alpha \\ &= 18 : 1 - \frac{1}{2} 0.05 \\ &= 18 : 1 - 0.025 \\ &= 18 : 0.975 \\ &= 2.101 \end{aligned}$$

Berarti :

$t_{\text{tabel}}$  dengan  $\alpha = 0.05$  dan  $dk = 18$  diperoleh table sebesar 2.101, karena  $t_{\text{hitung}} = 6.457 > t_{\text{tabel}} = 2.101$  dengan demikian kita tolak  $H_0$ , berarti koefisien korelasi 0.836 adalah signifikan.

### 3. Koefisien Korelasi $r_{X_2Y}$

$$r_{X_2Y} = \frac{n \sum X_2 Y - (\sum X_2) (\sum Y)}{\sqrt{\{n \sum X_2^2 - (\sum X_2)^2\} \{n \sum Y^2 - (\sum Y)^2\}}}$$

$$\begin{aligned}
&= \frac{20 (51594.98) - (1000) (1000)}{\sqrt{\{20 (51900) - (1000)^2\} \{20 \cdot (51900) - (1000)^2\}}} \\
&= \frac{1031899.6 - 1000000}{\sqrt{(1038000) - (1000000) (1038000) - (1000000)}} \\
&= \frac{31899.6}{\sqrt{1444000000}} \\
&= \frac{31899.6}{38000} \\
&= 0.839
\end{aligned}$$

#### 4. Uji Keberartian Koefisien Korelasi

$$\begin{aligned}
t &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\
&= \frac{0.839\sqrt{20-2}}{\sqrt{1-(0.499)^2}} \\
&= \frac{0.839 \times 4.24}{\sqrt{1-(0.839)^2}} \\
&= \frac{0.839 \times 4.24}{\sqrt{1-0.704}} \\
&= \frac{3.557}{\sqrt{0.296}} \\
&= \frac{3.557}{0.544} \\
&= 6.539
\end{aligned}$$

$$\begin{aligned}
\text{Tabel dk} &= n - 2 \\
&= 20 - 2
\end{aligned}$$

$$= 18$$

$$\begin{aligned} t_{\text{tabel}} &= dk : 1 - \frac{1}{2} \alpha \\ &= 18 : 1 - \frac{1}{2} 0.05 \\ &= 18 : 1 - 0.025 \\ &= 18 : 0.975 \\ &= 2.101 \end{aligned}$$

Berarti :

$t_{\text{tabel}}$  dengan  $\alpha = 0.05$  dan  $dk = 18$  diperoleh table sebesar 2.101, karena  $t_{\text{hitung}} = 6.593 > t_{\text{tabel}} = 2.101$  dengan demikian kita tolak  $H_0$ , berarti koefisien korelasi 0.839 adalah signifikan.

##### 5. Koefisien Korelasi ganda $r_{y1-2}$

$$\begin{aligned} JK(\text{Reg}) &= b_1 \cdot \sum x_1 y + b_2 \cdot \sum x_2 y \\ &= 0.391 (1588.82) + 0.465 (1594.98) \\ &= 621.229 + 741.666 \\ &= 1362.895 \end{aligned}$$

$$\begin{aligned} r_{y1-2} &= \sqrt{\frac{JK(\text{Reg})}{\sum y^2}} \\ &= \sqrt{\frac{1362.895}{1900}} \end{aligned}$$



$$= \sqrt{0.717}$$

$$= 0.847$$

#### 6. Uji Keberartian Koefisien Korelasi ganda

$$F_{hitung} = \frac{(ry_{1-2}^2)/K}{(1 - (ry_{1-2}^2))/(n - 2 - 1)}$$

$$= \frac{(0,847^2)/2}{(1 - 0,847^2)/(20 - 2 - 1)}$$

$$= \frac{0.717/2}{0.283/17}$$

$$= \frac{0.358}{0.017}$$

$$= 21.059$$

Berarti :

$F_{tabel}$  dicari dengan melihat daftar distribusi F dengan cacah prediktor = 2 sebagai pembilang dan  $(n-k-1) = 17$  sebagai penyebut didapat  $F_{hitung} = 21.059 > F_{tabel} = 3.59$ , maka koefisien korelasi ganda  $ry_{1-2} = 0.847$  adalah signifikan.

## Lampiran10

### Perhitungan Uji Koefisien Determinasi

Untuk mencari seberapa besar variasi variabel Y yang ditentukan oleh variabel X, maka digunakan Uji Koefisien Determinasi dengan rumus :

$$\begin{aligned} \text{KD} &= r_{x_1y}^2 \times 100\% \\ &= 0.836^2 \times 100\% \\ &= 0.6989 \times 100\% \\ &= 69.89\% \end{aligned}$$

Dari hasil tersebut di interpretasikan bahwa Kapasitas Aerobik Maksimal ( $\text{VO}_2\text{Max}$ ) ditentukan oleh Kapasitas Vital Paru sebesar 69.89%.

$$\begin{aligned} \text{KD} &= r_{x_2y}^2 \times 100\% \\ &= 0.839^2 \times 100\% \\ &= 0.7039 \times 100\% \\ &= 70.39\% \end{aligned}$$

Dari hasil tersebut di interpretasikan bahwa Kapasitas Aerobik Maksimal ( $\text{VO}_2\text{Max}$ ) ditentukan oleh Pengembangan Rongga *Thorax* sebesar 70.39%.

$$\begin{aligned} \text{KD} &= r_{y_{1-2}}^2 \times 100\% \\ &= 0.847^2 \times 100\% \\ &= 0.7174 \times 100\% \\ &= 71.74\% \end{aligned}$$

Dari hasil tersebut di interpretasikan bahwa Kapasitas Aerobik Maksimal ( $\text{VO}_2\text{Max}$ ) ditentukan oleh Kapasitas Vital Paru dan Pengembangan Rongga *Thorax* secara bersama-sama sebesar 71.74%.

**Gambar 1. Foto pada saat berdoa**



**Gambar 2. Foto pada saat pengisian pernyataan menjadi sample**





**Gambar 3. Foto pengambilan Kapasitas Vital Paru**



**Gambar 4. Foto pengambilan Kapasitas Vital Paru**



**Gambar 5. Foto saat pengambilan Pengembangan Rongga *Thorax***



**Gambar 6. Foto saat pengambilan Pengembangan Rongga *Thorax***





**Gambar 7. Foto saat pengambilan data Kapasitas Aerobik Maksimal**



**Gambar 8. Foto saat pengambilan data Kapasitas Aerobik Maksimal**

