

Lampiran 1

Data Mentah Hasil Tes

Tabel :Daftar hasil Tes Persepsi Kinestetis, Tes Koordinasi Mata Tangan,
Tes Ketepatan *Open Smash*

No	Persepsi kinestetis (point)	Tes koordinasi mata- tangan(point)	Tes ketepatan <i>open smash</i> (point)
1	5	28	21
2	5	24	20
3	5	23	15
4	5	23	12
5	3	23	5
6	3	24	4
7	4	24	7
8	3	21	6
9	3	22	4
10	4	24	8
11	3	22	4
12	3	21	6
13	4	20	6
14	3	25	15
15	4	21	4
16	4	20	5
17	3	19	3
18	4	21	4
19	4	22	3
20	4	21	4
Jumlah	76	448	156

Lampiran 2

Langkah-langkah Perhitungan Distribusi FrekuensiA. Variabel Persepsi Kinestetis (X_1)

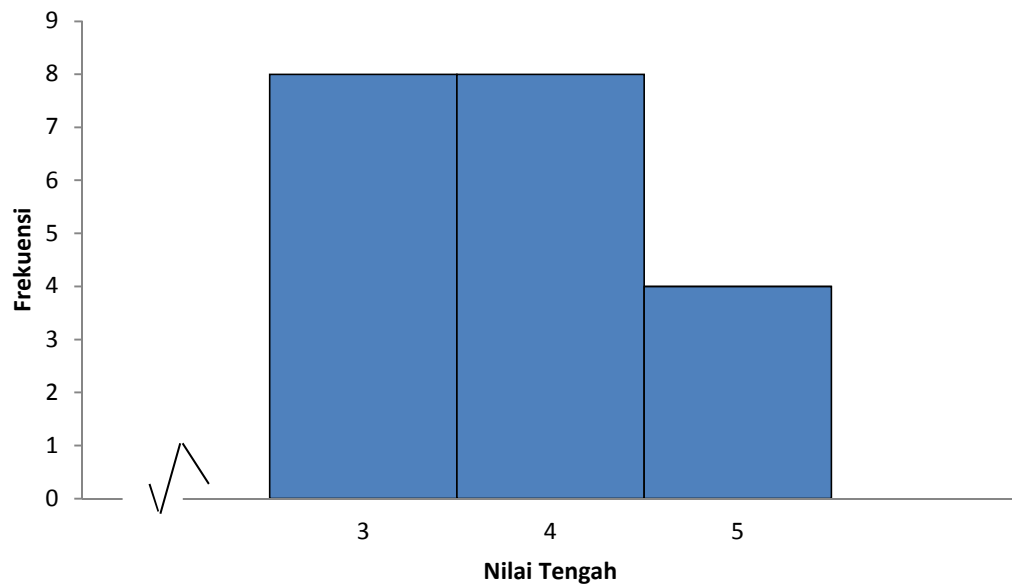
$$\begin{aligned}\text{Rentang (R)} &= \text{Data Terbesar} - \text{Data Terkecil} \\ &= 5 - 3 \\ &= 2\end{aligned}$$

$$\begin{aligned}\text{Banyak Kelas (BK)} &= 1 + (3,3) \log n \\ &= 1 + (3,3) \log 20 \\ &= 1 + (3,3) 1,3 \\ &= 1 + 4,29 \\ &= 5,29 \\ &= 5 \text{ kelas}\end{aligned}$$

$$\begin{aligned}\text{Panjang Kelas (PK)} &= \frac{R}{BK} \\ &= \frac{2}{5} \\ &= 0,4(1)\end{aligned}$$

Grafik Distribusi Frekuensi

Interval	Nilaitengah	Frekuensi	Persentase
3	3	8	40%
4	4	8	40%
5	5	4	20%
Total		20	100%



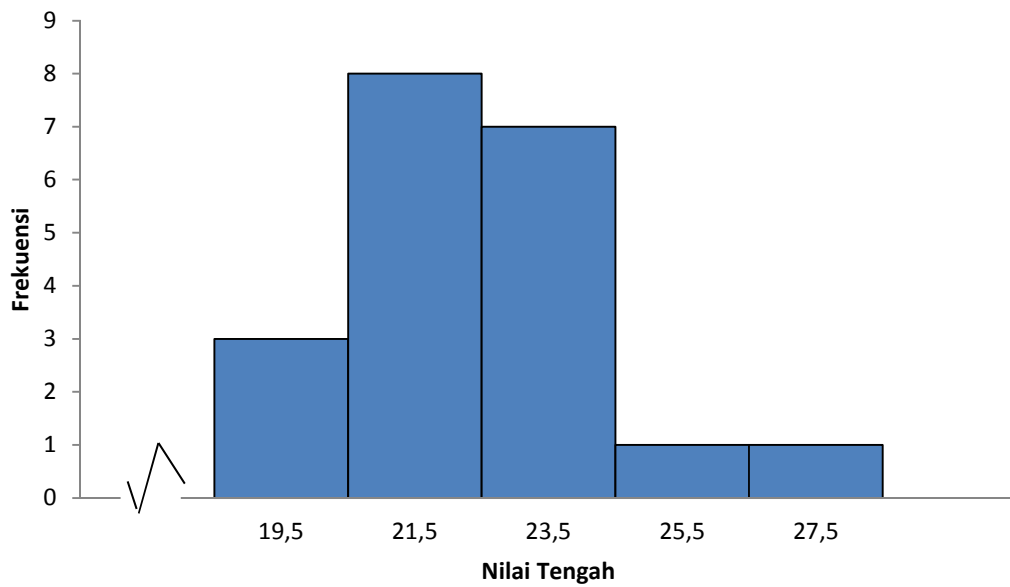
B. Variabel Koordinasi Mata Tangan (X₂)

$$\begin{aligned}\text{Rentang (R)} &= \text{Data Terbesar} - \text{Data Terkecil} \\ &= 28 - 19 \\ &= 9\end{aligned}$$

$$\begin{aligned}\text{Banyak Kelas (BK)} &= 1 + (3,3) \log n \\ &= 1 + (3,3) \log 20 \\ &= 1 + (3,3) 1,3 \\ &= 1 + 4,29 \\ &= 5,29 \\ &= 5 \text{ kelas}\end{aligned}$$

$$\begin{aligned}\text{Panjang Kelas (PK)} &= \frac{R}{BK} \\ &= \frac{9}{5} \\ &= 1,8 (2)\end{aligned}$$

Interval	Nilaitengah	Frekuensi	Persentase
19 - 20	19.5	3	15%
21 - 22	21.5	8	40%
23 - 24	23.5	7	35%
25 - 26	25.5	1	5%
27 - 28	27.5	1	5%
Total		20	100%



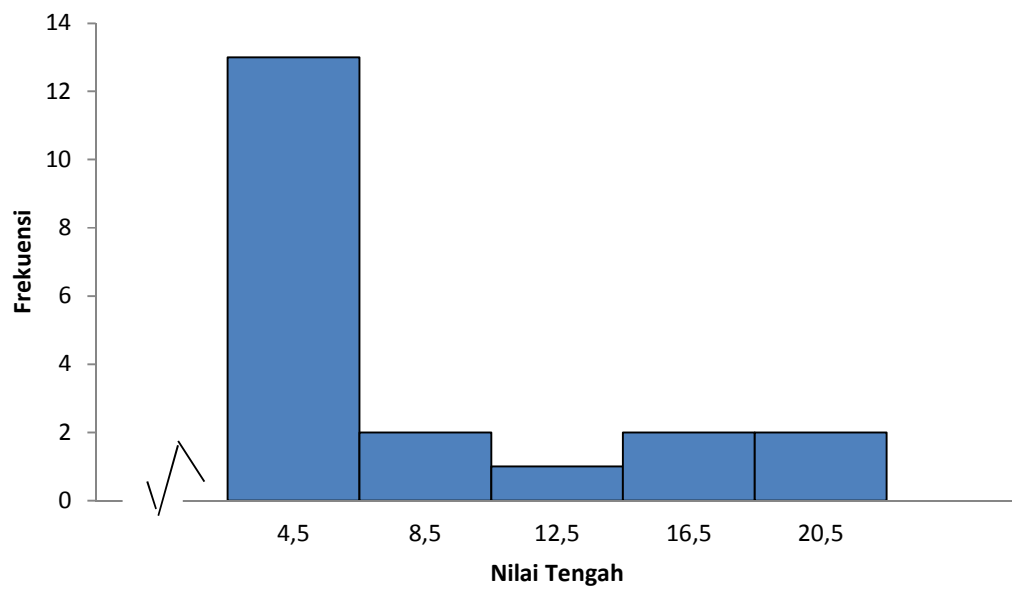
C. Variabel Ketepatan Open Smash (Y)

$$\begin{aligned}\text{Rentang (R)} &= \text{Data Terbesar} - \text{Data Terkecil} \\ &= 21 - 3 \\ &= 18\end{aligned}$$

$$\begin{aligned}\text{Banyak Kelas (BK)} &= 1 + (3,3) \log n \\ &= 1 + (3,3) \log 20 \\ &= 1 + (3,3) 1,3 \\ &= 1 + 4,29 \\ &= 5,29 \\ &= 5 \text{ kelas}\end{aligned}$$

$$\begin{aligned}\text{Panjang Kelas (PK)} &= \frac{R}{BK} \\ &= \frac{18}{5} \\ &= 3,6 \text{ (4)}\end{aligned}$$

Interval	Nilai tengah	Frekuensi	Persentase
19 - 20	4.5	13	65%
21 - 22	8.5	2	10%
23 - 24	12.5	1	5%
25 - 26	16.5	2	10%
27 - 28	20.5	2	10%
Total		20	100%



Lampiran 3

Tabel : Data hasil tes persepsi kinestetis, tes koordinasi mata tangan, dan tes ketepatan *open smash*.

No.	X_1	X_2	Y	X_1^2	X_2^2	Y^2
1	5	28	21	25	784	441
2	5	24	20	25	576	400
3	5	23	15	25	529	225
4	5	23	12	25	529	144
5	3	23	5	9	529	25
6	3	24	4	9	576	16
7	4	24	7	16	576	49
8	3	21	6	9	441	36
9	3	22	4	9	484	16
10	4	24	8	16	576	64
11	3	22	4	9	484	16
12	3	21	6	9	441	36
13	4	20	6	16	400	36
14	3	25	15	9	625	225
15	4	21	4	16	441	16
16	4	20	5	16	400	25
17	3	19	3	9	361	9
18	4	21	4	16	441	16
19	4	22	3	16	484	9
20	4	21	4	16	441	16
Σ	76	448	156	300	10118	1820

Lampiran 4

A. Menghitung Rata-rata dan simpangan baku1. Variabel Persepsi Kinestetis (X_1)

$$\text{Dik: } \Sigma X_1 = 76 \quad \Sigma X_1^2 = 300 \quad n = 20$$

$$\text{a. Rata-rata } X_1 = \frac{\Sigma X_1}{n} = \frac{76}{20} = 3,8$$

$$\text{b. Simpangan baku} = \sqrt{\frac{n \Sigma X_1^2 - (\Sigma X_1)^2}{n(n-1)}}$$

$$= \sqrt{\frac{20(300) - (76)^2}{20(20-1)}}$$

$$= \sqrt{\frac{6000 - 5776}{380}}$$

$$= \sqrt{0,5894}$$

$$= 0.76$$

$$\text{c. Varians} = 0,58$$

2. Variabel Koordinasi Mata Tangan (X_2)

$$\text{Dik: } \Sigma X_2 = 448 \quad \Sigma X_2^2 = 10118 \quad n = 20$$

$$\text{a. Rata-rata } X_1 = \frac{\Sigma X_1}{n} = \frac{448}{20} = 22,4$$

$$\begin{aligned}
 \text{b. Simpangan Baku} &= \sqrt{\frac{n \sum X_2^2 - (\sum X_2)^2}{n(n-1)}} \\
 &= \sqrt{\frac{20(10118) - (448)^2}{20(20-1)}} \\
 &= \sqrt{\frac{202360 - 200704}{380}} \\
 &= \sqrt{4,357} \\
 &= 2,08
 \end{aligned}$$

$$\text{c. Varians} = 4,35$$

3. Variabel Ketepatan Open Smash (Y)

$$\text{Dik: } \sum Y = 156 \quad \sum Y^2 = 1108 \quad n = 20$$

$$\text{a. Rata-rata Y} = \frac{\sum Y}{n} = \frac{156}{20} = 7,8$$

$$\begin{aligned}
 \text{b. Simpangan Baku} &= \sqrt{\frac{n \sum Y^2 - (\sum Y)^2}{n(n-1)}} \\
 &= \sqrt{\frac{20(1108) - (156)^2}{20(20-1)}} \\
 &= \sqrt{\frac{36400 - 24336}{380}} \\
 &= \sqrt{31,747} \\
 &= 5,63
 \end{aligned}$$

$$\text{c. Varians} = 31,74$$

Table : Data Perhitungan Korelasi dan Regresi

No.	X_1	X_2	Y	X_1^2	X_2^2	Y^2	X_1Y	X_2Y	X_1X_2
1	5	28	21	25	784	441	105	588	140
2	5	24	20	25	576	400	100	480	120
3	5	23	15	25	529	225	75	345	115
4	5	23	12	25	529	144	60	276	115
5	3	23	5	9	529	25	15	115	69
6	3	24	4	9	576	16	12	96	72
7	4	24	7	16	576	49	28	168	96
8	3	21	6	9	441	36	18	126	63
9	3	22	4	9	484	16	12	88	66
10	4	24	8	16	576	64	32	192	96
11	3	22	4	9	484	16	12	88	66
12	3	21	6	9	441	36	18	126	63
13	4	20	6	16	400	36	24	120	80
14	3	25	15	9	625	225	45	375	75
15	4	21	4	16	441	16	16	84	84
16	4	20	5	16	400	25	20	100	80
17	3	19	3	9	361	9	9	57	57
18	4	21	4	16	441	16	16	84	84
19	4	22	3	16	484	9	12	66	88
20	4	21	4	16	441	16	16	84	84
Jumlah	76	448	156	300	10118	1820	645	3658	1713

Lampiran 5

Mencari Persamaan Regresi

1. Regresi Y atas X_1

$$\text{Diketahui : } \Sigma X_1 = 76$$

$$\Sigma X_1^2 = 300$$

$$\Sigma Y = 156$$

$$\Sigma Y^2 = 1820$$

$$\Sigma X_1 Y = 645$$

$$n = 20$$

$$\begin{aligned} \text{a. } &= \frac{(\Sigma Y)(\Sigma X_1^2) - (\Sigma X_1)(\Sigma X_1 Y)}{n(\Sigma X_1^2) - (\Sigma X_1)^2} \\ &= \frac{(156)(300) - (76)(645)}{20(300) - (76)^2} \\ &= \frac{4680 - 4920}{6000 - 5776} \\ &= \frac{-2220}{224} \\ &= -9,911 \end{aligned}$$

$$\begin{aligned}
 b. &= \frac{n(\sum X_1 Y) - (\sum X_1)(\sum Y)}{n(\sum X_1^2) - (\sum X_1)^2} \\
 &= \frac{20(645) - (76)(156)}{20(300) - (76)^2} \\
 &= \frac{12900 - 11856}{6000 - 5776} \\
 &= \frac{1044}{224} \\
 &= 4,661
 \end{aligned}$$

Jadi, persamaan regresi Y terhadap X_1 adalah $Y = - 9,911 + 4,661X_1$

2. Regresi Y atas X_2

$$\text{Diketahui : } \sum X_2 = 448$$

$$\sum X_2^2 = 10118$$

$$\sum Y = 156$$

$$\sum Y^2 = 1820$$

$$\sum X_2 Y = 3658$$

$$n = 20$$

$$\begin{aligned}
 \text{a.} &= \frac{(\Sigma Y)(\Sigma X_2)^2 - (\Sigma X_2)(\Sigma X_2 Y)}{n(\Sigma X_2^2) - (\Sigma X_2)^2} \\
 &= \frac{(156)(10118) - (448)(3658)}{20(10118) - (448)^2} \\
 &= \frac{1578408 - 1638784}{202360 - 200704} \\
 &= \frac{-60376}{1656} \\
 &= -36,459
 \end{aligned}$$

$$\begin{aligned}
 \text{b.} &= \frac{n(\Sigma X_2 Y) - (\Sigma X_2)(\Sigma Y)}{n(\Sigma X_2^2) - (\Sigma X_2)^2} \\
 &= \frac{20(3658) - (448)(156)}{20(10118) - (448)^2} \\
 &= \frac{73160 - 69888}{202360 - 200704} \\
 &= \frac{3272}{1656} \\
 &= 1,976
 \end{aligned}$$

Jadi persamaan regresi Y terhadap X_2 adalah $\hat{Y} = -36,459 + 1,976X_2$

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:

$$\bar{X}_1 = 3,8 \quad \Sigma X_1^2 = 300$$

$$\bar{X}_2 = 22,4 \quad \Sigma X_2^2 = 10118$$

$$\bar{Y} = 7,8 \quad \Sigma Y^2 = 1820$$

$$\Sigma X_1 = 76 \quad \Sigma X_1 Y = 645$$

$$\Sigma X_2 = 448 \quad \Sigma X_2 Y = 3658$$

$$\Sigma Y = 156 \quad \Sigma X_1 X_2 = 1713$$

Jadi:

$$\begin{aligned} \Sigma y^2 &= \Sigma Y^2 - \frac{(\Sigma Y)^2}{n} \\ &= 1820 - \frac{156^2}{20} \\ &= 1108 - 1216,8 \\ &= 603,2 \end{aligned}$$

$$\begin{aligned} \Sigma x_1^2 &= \Sigma X_1^2 - \frac{(\Sigma X_1)^2}{n} \\ &= 300 - \frac{76^2}{20} \\ &= 300 - 288,8 \\ &= 11,2 \end{aligned}$$

$$\begin{aligned}
\Sigma X_2^2 &= \Sigma X_2^2 - \frac{(\Sigma X_2)^2}{n} \\
&= 10118 - \frac{(448)^2}{20} \\
&= 10118 - 10035,2 \\
&= 82,8
\end{aligned}$$

$$\begin{aligned}
\Sigma X_1Y &= \Sigma X_1Y - \frac{(\Sigma X_1)(\Sigma Y)}{n} \\
&= 645 - \frac{(76)(156)}{20} \\
&= 645 - 592,8 \\
&= 52,2
\end{aligned}$$

$$\begin{aligned}
\Sigma X_2Y &= \Sigma X_2Y - \frac{(\Sigma X_2)(\Sigma Y)}{n} \\
&= 3658 - \frac{(448)(156)}{20} \\
&= 3658 - 3494,4 \\
&= 163,6
\end{aligned}$$

$$\begin{aligned}
\Sigma X_1X_2 &= \Sigma X_1X_2 - \frac{(\Sigma X_1)(\Sigma X_2)}{n} \\
&= 1713 - \frac{(76)(448)}{20} \\
&= 1713 - 1702,4 \\
&= 10,6
\end{aligned}$$

$$\begin{aligned}
 b_1 &= \frac{(\sum X_2^2)(\sum X_1 Y) - (\sum X_1 X_2)(\sum X_2 Y)}{(\sum X_1^2)(\sum X_2^2) - (\sum X_1 X_2)^2} \\
 &= \frac{(52,2)(82,8) - (10,6)(163,6)}{(11,2)(82,8) - (10,6)^2} \\
 &= \frac{4322,16 - 1734,16}{927,36 - 112,36} \\
 &= \frac{2588,00}{815,00} \\
 &= 3,175
 \end{aligned}$$

$$\begin{aligned}
 b_2 &= \frac{(\sum X_1^2)(\sum X_2 Y) - (\sum X_1 X_2)(\sum X_1 Y)}{(\sum X_1^2)(\sum X_2^2) - (\sum X_1 X_2)^2} \\
 &= \frac{(163,60)(11,2) - (10,6)(52,2)}{(11,2)(82,8) - (10,6)^2} \\
 &= \frac{1832,32 - 553,32}{927,36 - 112,36} \\
 &= \frac{1279}{815} \\
 &= 1,569
 \end{aligned}$$

$$\begin{aligned}
 b_0 &= \bar{Y} - b_1 \bar{X}_1 - b_2 \bar{X}_2 \\
 &= 7,8 - \{(3,175)(3,8) - (1,569)(22,4)\} \\
 &= 7,8 - (12,067 - 35,153) \\
 &= 7,8 - (-23,086) \\
 &= -39,420
 \end{aligned}$$

Jadi, persamaan regresi ganda Y atas X_1 dan X_2 adalah $\hat{Y} = -39,420 + 3,175X_1 + 1,569X_2$

Tabel Nilai-nilai r Product Moment dari Pearson

N	Taraf Signifikan		N	Taraf Signifikan		N	Taraf Signifikan	
	5%	1%		5%	1%		5%	1%
3	0.997	0.999	26	0.388	0.496	55	0.266	0.345
4	0.950	0.990	27	0.381	0.487	60	0.254	0.330
5	0.878	0.959	28	0.374	0.478	65	0.244	0.317
6	0.811	0.917	29	0.367	0.470	70	0.235	0.306
7	0.754	0.874	30	0.361	0.463	75	0.227	0.296
8	0.707	0.834	31	0.355	0.456	80	0.220	0.286
9	0.666	0.798	32	0.349	0.449	85	0.213	0.278
10	0.632	0.765	33	0.344	0.442	90	0.207	0.270
11	0.602	0.735	34	0.339	0.436	95	0.202	0.263
12	0.576	0.708	35	0.334	0.430	100	0.194	0.256
13	0.553	0.684	36	0.329	0.424	125	0.176	0.230
14	0.532	0.661	37	0.325	0.418	150	0.159	0.210
15	0.514	0.641	38	0.320	0.413	175	0.148	0.194
16	0.497	0.623	39	0.316	0.408	200	0.138	0.181
17	0.482	0.606	40	0.312	0.403	300	0.113	0.148
18	0.463	0.590	41	0.308	0.398	400	0.098	0.128
19	0.456	0.575	42	0.304	0.393	500	0.088	0.115
20	0.444	0.561	43	0.301	0.389	600	0.080	0.105
21	0.433	0.549	44	0.297	0.384	700	0.074	0.097
22	0.423	0.537	45	0.294	0.380	800	0.070	0.091
23	0.413	0.526	46	0.291	0.376	900	0.065	0.086
24	0.404	0.515	47	0.288	0.372	1000	0.062	0.081
25	0.396	0.505	48	0.284	0.368			
			49	0.281	0.364			
			50	0.279	0.361			

Sumber : Conover, W.J., *Practical Nonparametric Statistics*, John Wiley & Sons, Inc., 1973

Lampiran 6

Mencari Koefisien Korelasi dan Uji Keberartian Koefisien Korelasi

1. Koefisien Korelasi r_{Y_1}

$$\begin{aligned}
 r &= \frac{n(\Sigma X_1 Y) - (\Sigma X_1)(\Sigma Y)}{\sqrt{([n(\Sigma X_1^2) - (\Sigma X_1)^2][n(\Sigma Y^2) - (\Sigma Y)^2])}} \\
 &= \frac{20(645) - (76)(156)}{\sqrt{([20(300) - (76)^2][20(1820) - (156)^2])}} \\
 &= \frac{12900 - 11856}{\sqrt{[224][12064]}} \\
 &= \frac{1044}{\sqrt{2702336}} \\
 &= \frac{1044}{1643,878} \\
 &= 0,635
 \end{aligned}$$

2. Uji Keberartian Koefisien Korelasi

$$\begin{aligned}
 t &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\
 &= \frac{0,635\sqrt{20-2}}{\sqrt{1-0,635^2}} \\
 &= \frac{0,635 \times 4,24}{\sqrt{1-0,403}} \\
 &= \frac{2,694}{0,772} \\
 &= 3,488
 \end{aligned}$$

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

$$\begin{aligned} t_{\text{tabel}} &= dk : 1 - \frac{1}{2}\alpha \\ &= 18 : 1 - \frac{1}{2} 0.05 \\ &= 18 : 1 - 0.025 \\ &= 18 : 0.975 \\ &= 2.10 \end{aligned}$$

Berarti:

T_{tabel} dengan $\alpha = 0,05$ dan $dk = 18$ diperoleh sebesar 2,101 karena $t_{\text{hitung}} = 3,488 > t_{\text{tabel}} = 2,101$ dengan demikian H_0 ditolak berarti koefisien korelasi 0,635 adalah signifikan.

3. Koefisien Korelasi r_{y_2}

$$\begin{aligned} r &= \frac{n(\Sigma X_2 Y) - (\Sigma X_2)(\Sigma Y)}{\sqrt{([n(\Sigma X_2^2) - (\Sigma X_2)^2][n(\Sigma Y^2) - (\Sigma Y)^2]}} \\ &= \frac{20(3658) - (448)(156)}{\sqrt{([20(10118) - (448)^2][20(1820) - (156)^2]}} \\ &= \frac{73160 - 69888}{\sqrt{[20869.94] [12064]}} \end{aligned}$$

$$\begin{aligned}
 &= \frac{3272}{\sqrt{19977984}} \\
 &= \frac{3272}{4469,674} \\
 &= 0.732
 \end{aligned}$$

4. Uji Keberartian Koefisien Korelasi

$$\begin{aligned}
 t &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\
 &= \frac{0.732\sqrt{20-2}}{\sqrt{1-0.732^2}} \\
 &= \frac{0.732 \times 4.243}{\sqrt{1-0.536}} \\
 &= \frac{3.106}{\sqrt{0.464}} \\
 &= \frac{3.106}{0.681} \\
 &= 4.559
 \end{aligned}$$

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

$$\begin{aligned}
 t_{\text{tabel}} &= dk : 1 - \frac{1}{2}\alpha \\
 &= 18 : 1 - \frac{1}{2} 0.05 \\
 &= 18 : 1 - 0.025 \\
 &= 18 : 0.975 \\
 &= 2.10
 \end{aligned}$$

Berarti:

t_{tabel} dengan $\alpha = 0,05$ dan $dk = 13$ diperoleh sebesar 4,559 karena $t_{\text{hitung}} = 4,559 > t_{\text{tabel}} = 2,10$ dengan demikian H_0 ditolak berarti koefisien korelasi 0,732 adalah signifikan.

5. Mencari R_{y_1-2} (Koefisien Korelasi Ganda)

$$\begin{aligned}
 JK(\text{Reg}) &= b_1 \sum x_1 y + b_2 \sum x_2 y \\
 &= 3.175(52.20) + 1.569(163.60) \\
 &= 165.759 + 256.742 \\
 &= 422.50
 \end{aligned}$$

$$\begin{aligned}
 R &= \sqrt{\frac{JK(\text{Reg})}{\sum y^2}} \\
 &= \sqrt{\frac{422.501}{603.200}}
 \end{aligned}$$

$$= \sqrt{0.700}$$

$$= 0,837$$

Uji Keberartian Koefisien Korelasi Ganda

$$\begin{aligned} FH &= \frac{R^2/K}{(1-R^2)/n-K-1} \\ &= \frac{0.837^2/2}{(1-0.837)/20-2-1} \\ &= \frac{0.700/2}{0.300/17} \\ &= \frac{0.350}{0.018} \\ &= 19,874 \end{aligned}$$

F_{tabel} dicari dengan cara melihat daftar distribusi F. F_{hitung} dengan cacah prediktor= 2 sebagai pembilang dan (n - K - 1) = 17 sebagai penyebut di dapat F_{hitung} = 19,874 > F_{tabel} = 3,56 maka koefisien korelasi ganda R_{y₁₋₂} = 0,837 adalah signifikan.