

**Data Hasil Perhitungan Uji Validitas kembali antara Skor Butir dengan Skor Total
Variabel Y (kinerja guru)**

$\Sigma Y = 3420$

$\Sigma Y^2 = 398790$

| No. Butir | ΣY | ΣY^2 | $\Sigma Y \cdot Y_t$ | Σy^2 | $\Sigma y \cdot y_t$ | Σy_t^2 | r_{hitung} | r_{tabel} | Kesimp. |
|-----------|------------|--------------|----------------------|--------------|----------------------|----------------|--------------|-------------|---------|
| 1 | 104 | 384 | 12123 | 23.47 | 267.00 | 8910.00 | 0.584 | 0.361 | Valid |
| 2 | 107 | 399 | 12522 | 17.37 | 324.00 | 8910.00 | 0.824 | 0.361 | Valid |
| 3 | 89 | 295 | 10429 | 30.97 | 283.00 | 8910.00 | 0.539 | 0.361 | Valid |
| 4 | 114 | 446 | 13112 | 12.80 | 116.00 | 8910.00 | 0.443 | 0.361 | Valid |
| 5 | 114 | 460 | 13356 | 26.80 | 360.00 | 8910.00 | 0.737 | 0.361 | Valid |
| 6 | 109 | 409 | 12575 | 12.97 | 149.00 | 8910.00 | 0.438 | 0.361 | Valid |
| 7 | 116 | 462 | 13391 | 13.47 | 167.00 | 8910.00 | 0.482 | 0.361 | Valid |
| 8 | 115 | 461 | 13430 | 20.17 | 320.00 | 8910.00 | 0.755 | 0.361 | Valid |
| 9 | 116 | 470 | 13530 | 21.47 | 306.00 | 8910.00 | 0.700 | 0.361 | Valid |
| 10 | 111 | 423 | 12869 | 12.30 | 215.00 | 8910.00 | 0.649 | 0.361 | Valid |
| 11 | 115 | 463 | 13488 | 22.17 | 378.00 | 8910.00 | 0.851 | 0.361 | Valid |
| 12 | 124 | 532 | 14361 | 19.47 | 225.00 | 8910.00 | 0.540 | 0.361 | Valid |
| 13 | 100 | 374 | 11781 | 40.67 | 381.00 | 8910.00 | 0.633 | 0.361 | Valid |
| 14 | 130 | 588 | 15090 | 24.67 | 270.00 | 8910.00 | 0.576 | 0.361 | Valid |
| 15 | 95 | 359 | 11350 | 58.17 | 520.00 | 8910.00 | 0.722 | 0.361 | Valid |
| 16 | 115 | 457 | 13305 | 16.17 | 195.00 | 8910.00 | 0.514 | 0.361 | Valid |
| 17 | 122 | 518 | 14127 | 21.87 | 219.00 | 8910.00 | 0.496 | 0.361 | Valid |
| 18 | 125 | 531 | 14437 | 10.17 | 187.00 | 8910.00 | 0.621 | 0.361 | Valid |
| 19 | 121 | 509 | 14064 | 20.97 | 270.00 | 8910.00 | 0.625 | 0.361 | Valid |
| 20 | 112 | 456 | 13161 | 37.87 | 393.00 | 8910.00 | 0.677 | 0.361 | Valid |
| 21 | 112 | 442 | 13095 | 23.87 | 327.00 | 8910.00 | 0.709 | 0.361 | Valid |
| 22 | 123 | 521 | 14298 | 16.70 | 276.00 | 8910.00 | 0.716 | 0.361 | Valid |
| 23 | 138 | 648 | 15884 | 13.20 | 152.00 | 8910.00 | 0.443 | 0.361 | Valid |
| 24 | 113 | 485 | 13258 | 59.37 | 376.00 | 8910.00 | 0.517 | 0.361 | Valid |
| 25 | 114 | 484 | 13390 | 50.80 | 394.00 | 8910.00 | 0.586 | 0.361 | Valid |
| 26 | 116 | 496 | 13677 | 47.47 | 453.00 | 8910.00 | 0.697 | 0.361 | Valid |
| 27 | 119 | 499 | 13898 | 26.97 | 332.00 | 8910.00 | 0.677 | 0.361 | Valid |
| 28 | 111 | 443 | 12935 | 32.30 | 281.00 | 8910.00 | 0.524 | 0.361 | Valid |
| 29 | 100 | 382 | 11798 | 48.67 | 398.00 | 8910.00 | 0.604 | 0.361 | Valid |
| 30 | 120 | 512 | 14056 | 32.00 | 376.00 | 8910.00 | 0.704 | 0.361 | Valid |

Data Penelitian
Variabel X (kepemimpinan Transformasional Kepala sekolah)

| No. Resp. | Butir Pernyataan | | | | | | | | | | | | | | | | | | | | | | | | | | Skor Total |
|--------------|------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | |
| 1 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 112 |
| 2 | 5 | 4 | 3 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 112 |
| 3 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 115 |
| 4 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 109 |
| 5 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 3 | 4 | 3 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 106 |
| 6 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 109 |
| 7 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 3 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 116 |
| 8 | 5 | 5 | 5 | 5 | 3 | 4 | 4 | 5 | 4 | 3 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 111 |
| 9 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 4 | 4 | 4 | 4 | 100 |
| 10 | 4 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 5 | 4 | 95 |
| 11 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 102 |
| 12 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 4 | 3 | 4 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 3 | 2 | 3 | 3 | 4 | 3 | 4 | 83 |
| 13 | 5 | 5 | 5 | 5 | 4 | 4 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 3 | 2 | 4 | 3 | 2 | 3 | 2 | 2 | 3 | 94 |
| 14 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 110 |
| 15 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 103 |
| 16 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 121 |
| 17 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 5 | 5 | 4 | 2 | 105 |
| 18 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 107 |
| 19 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 3 | 2 | 2 | 2 | 3 | 101 |
| 20 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 130 |
| 21 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 3 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 103 |
| 22 | 3 | 3 | 4 | 3 | 4 | 4 | 5 | 4 | 3 | 4 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 2 | 2 | 3 | 2 | 3 | 4 | 2 | 4 | 89 |
| 23 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 4 | 102 |
| 24 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 3 | 3 | 5 | 5 | 5 | 116 |
| 25 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 117 |
| 26 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 117 |
| 27 | 4 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 114 |
| 28 | 5 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 106 |
| 29 | 4 | 4 | 2 | 2 | 4 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 92 |
| 30 | 5 | 5 | 4 | 5 | 4 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 111 |

| No. Resp. | Butir Pernyataan | | | | | | | | | | | | | | | | | | | | | | | | | Skor | |
|--------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | Total |
| 31 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 95 |
| 32 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 116 |
| 33 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 104 |
| 34 | 4 | 4 | 4 | 3 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 106 |
| 35 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 4 | 3 | 4 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 3 | 2 | 3 | 4 | 4 | 4 | 4 | 85 |
| 36 | 5 | 5 | 5 | 5 | 1 | 5 | 5 | 5 | 5 | 1 | 1 | 4 | 5 | 4 | 5 | 1 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 112 |
| 37 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 98 |
| 38 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 3 | 3 | 5 | 5 | 5 | 5 | 2 | 3 | 2 | 3 | 2 | 2 | 4 | 2 | 3 | 5 | 2 | 5 | 98 |
| 39 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 104 |
| Σ | 168 | 166 | 168 | 170 | 158 | 154 | 163 | 174 | 154 | 152 | 156 | 159 | 169 | 165 | 158 | 156 | 159 | 165 | 149 | 154 | 149 | 143 | 148 | 159 | 153 | 157 | 4126 |

Data Penelitian
Variabel Y (kinerja guru)

| No. Resp. | Butir Pernyataan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Skor Total | |
|--------------|------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | |
| 1 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 138 |
| 2 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 137 |
| 3 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 141 |
| 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 144 |
| 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 144 |
| 6 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 139 |
| 7 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 129 |
| 8 | 3 | 5 | 4 | 5 | 3 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 3 | 3 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 132 | |
| 9 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 5 | 4 | 4 | 128 |
| 10 | 4 | 4 | 4 | 4 | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 117 |
| 11 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 126 |
| 12 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 3 | 3 | 5 | 5 | 4 | 4 | 122 |
| 13 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 116 |
| 14 | 4 | 4 | 5 | 5 | 3 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 2 | 4 | 5 | 132 | |
| 15 | 4 | 4 | 4 | 4 | 3 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 124 |
| 16 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 4 | 140 | |
| 17 | 4 | 4 | 5 | 4 | 4 | 3 | 5 | 4 | 4 | 5 | 5 | 4 | 3 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 3 | 4 | 123 | |
| 18 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 133 |
| 19 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 2 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 126 | |
| 20 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 129 | |
| 21 | 2 | 4 | 4 | 4 | 2 | 5 | 2 | 5 | 4 | 2 | 2 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 118 | |
| 22 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 4 | 4 | 3 | 3 | 4 | 5 | 4 | 3 | 5 | 4 | 5 | 4 | 3 | 5 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 121 | |
| 23 | 4 | 4 | 4 | 4 | 2 | 5 | 4 | 4 | 5 | 2 | 3 | 4 | 5 | 4 | 5 | 4 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 126 | |
| 24 | 5 | 5 | 4 | 4 | 2 | 5 | 5 | 4 | 5 | 3 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 137 | |
| 25 | 5 | 4 | 4 | 4 | 3 | 5 | 5 | 4 | 5 | 2 | 3 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 132 | |
| 26 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 145 | |
| 27 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 145 | |
| 28 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 126 | |
| 29 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 125 | |
| 30 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 136 | |
| 31 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 133 | |

| No. | Butir Pernyataan | | | | | | | | | | | | | | | | | | | | | | | | | | | | Skor | | |
|-----|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|------|
| 32 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 136 |
| 33 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 134 |
| 34 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 132 | |
| 35 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 128 | |
| 36 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 135 |
| 37 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 2 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 126 |
| 38 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 129 |
| 39 | 2 | 4 | 4 | 4 | 2 | 5 | 2 | 5 | 4 | 2 | 2 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 120 | |
| Σ | 164 | 176 | 169 | 168 | 140 | 175 | 169 | 168 | 174 | 146 | 161 | 160 | 171 | 183 | 189 | 165 | 157 | 178 | 174 | 174 | 172 | 173 | 186 | 166 | 171 | 180 | 177 | 178 | 173 | 167 | 5104 |

**Proses Perhitungan Menggambar Grafik Histogram
Variabel X (kepemimpinan Transformasional Kepala sekolah)**

1. Menentukan Rentang

$$\begin{aligned}\text{Rentang} &= \text{Data terbesar} - \text{data terkecil} \\ &= 130 - 83 \\ &= 47\end{aligned}$$

2. Banyaknya Interval Kelas

$$\begin{aligned}K &= 1 + (3,3) \text{ Log } n \\ &= 1 + (3,3) \log 39 \\ &= 1 + (3,3) 1,59 \\ &= 1 + 5,25 \\ &= 6,25 \text{ (dibulatkan menjadi } 6 \text{)}\end{aligned}$$

3. Panjang Kelas Interval

$$\begin{aligned}P &= \frac{\text{Rentang}}{\text{Kelas}} \\ &= \frac{47}{6} = 7.833 \text{ (ditetapkan menjadi } 8 \text{)}\end{aligned}$$

| Kelas Interval | Batas Bawah | Batas Atas | Frek. Absolut | Frek. Relatif |
|-----------------------|--------------------|-------------------|----------------------|----------------------|
| 83 - 90 | 82.5 | 90.5 | 3 | 7.7% |
| 91 - 98 | 90.5 | 98.5 | 6 | 15.4% |
| 99 - 106 | 98.5 | 106.5 | 12 | 30.8% |
| 107 - 114 | 106.5 | 114.5 | 10 | 25.6% |
| 115 - 122 | 114.5 | 122.5 | 7 | 17.9% |
| 123 - 130 | 122.5 | 130.5 | 1 | 2.6% |
| Jumlah | | | 39 | 100% |

**Proses Perhitungan Menggambar Grafik Histogram
Variabel Y (kinerja guru)**

1. Menentukan Rentang

$$\begin{aligned}\text{Rentang} &= \text{Data terbesar} - \text{data terkecil} \\ &= 145 - 116 \\ &= 29\end{aligned}$$

2. Banyaknya Interval Kelas

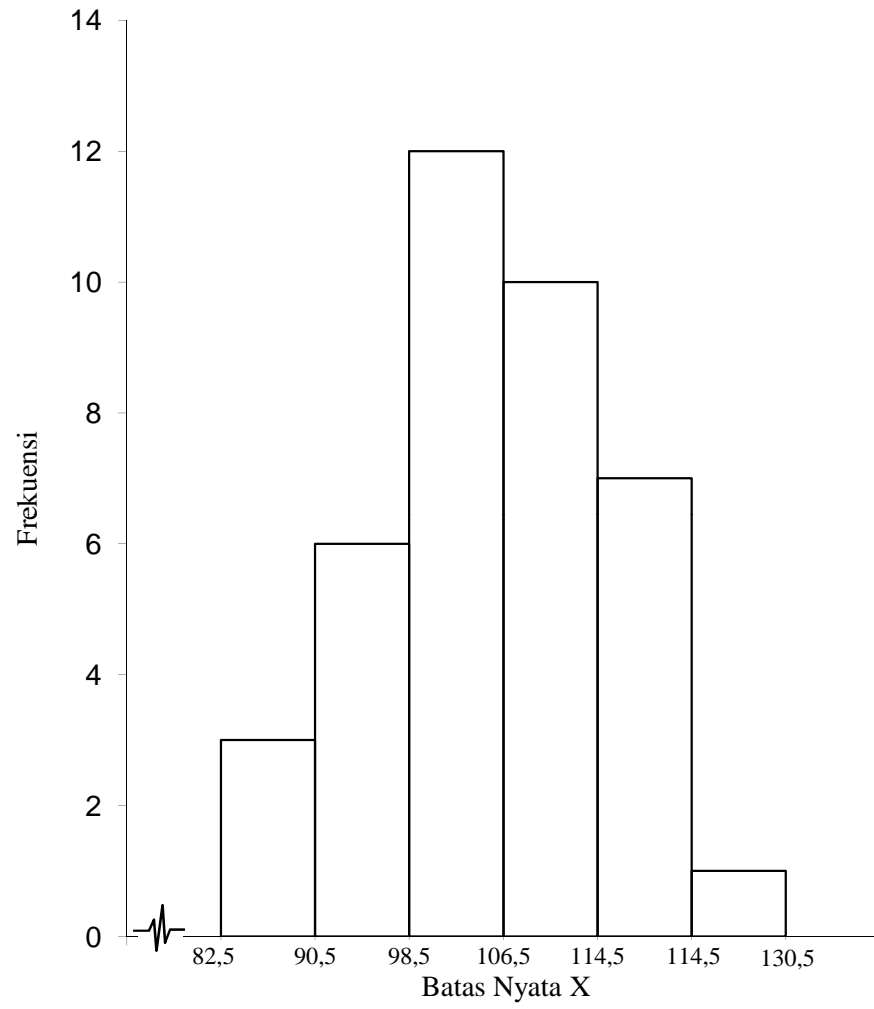
$$\begin{aligned}K &= 1 + (3,3) \text{ Log } n \\ &= 1 + (3,3) \log 39 \\ &= 1 + (3,3) 1,59 \\ &= 1 + 5,25 \\ &= 6,25 \text{ (dibulatkan menjadi } 6 \text{)}\end{aligned}$$

3. Panjang Kelas Interval

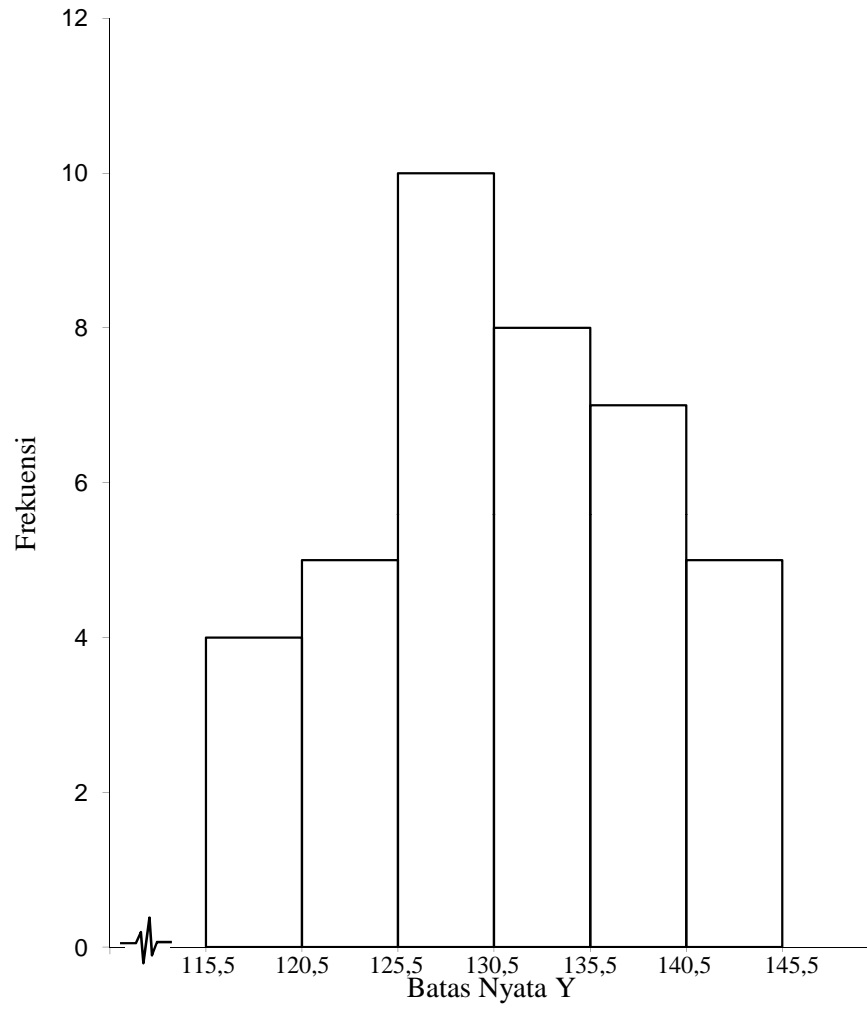
$$\begin{aligned}P &= \frac{\text{Rentang}}{\text{Kelas}} \\ &= \frac{29}{6} = 4.83 \text{ (ditetapkan menjadi } 5 \text{)}\end{aligned}$$

| Kelas Interval | Batas Bawah | Batas Atas | Frek. Absolut | Frek. Relatif |
|-----------------------|--------------------|-------------------|----------------------|----------------------|
| 116 - 120 | 115.5 | 120.5 | 4 | 10.3% |
| 121 - 125 | 120.5 | 125.5 | 5 | 12.8% |
| 126 - 130 | 125.5 | 130.5 | 10 | 25.6% |
| 131 - 135 | 130.5 | 135.5 | 8 | 20.5% |
| 136 - 140 | 135.5 | 140.5 | 7 | 17.9% |
| 141 - 145 | 140.5 | 145.5 | 5 | 12.8% |
| Jumlah | | | 39 | 100% |

**Grafik Histogram
Variabel X**



Grafik Histogram Variabel Y



**Hasil Data Mentah Variabel X (kepemimpinan Transformasional
Kepala sekolah) dan Varibel Y (kinerja guru)**

| NO. | VARIABEL X | VARIABEL Y |
|------------|-------------------|-------------------|
| 1 | 112 | 138 |
| 2 | 112 | 137 |
| 3 | 115 | 141 |
| 4 | 109 | 144 |
| 5 | 106 | 144 |
| 6 | 109 | 139 |
| 7 | 116 | 129 |
| 8 | 111 | 132 |
| 9 | 100 | 128 |
| 10 | 95 | 117 |
| 11 | 102 | 126 |
| 12 | 83 | 122 |
| 13 | 94 | 116 |
| 14 | 110 | 132 |
| 15 | 103 | 124 |
| 16 | 121 | 140 |
| 17 | 105 | 123 |
| 18 | 107 | 133 |
| 19 | 101 | 126 |
| 20 | 130 | 129 |
| 21 | 103 | 118 |
| 22 | 89 | 121 |
| 23 | 102 | 126 |
| 24 | 116 | 137 |
| 25 | 117 | 132 |
| 26 | 117 | 145 |
| 27 | 114 | 145 |
| 28 | 106 | 126 |
| 29 | 92 | 125 |
| 30 | 111 | 136 |
| 31 | 95 | 133 |
| 32 | 116 | 136 |
| 33 | 104 | 134 |
| 34 | 106 | 132 |
| 35 | 85 | 128 |
| 36 | 112 | 135 |

| NO. | VARIABEL X | VARIABEL Y |
|------------|-------------------|-------------------|
| 37 | 98 | 126 |
| 38 | 98 | 129 |
| 39 | 104 | 120 |

**Tabel Perhitungan Rata-rata,
Varians dan Simpangan Baku, Variabel X dan Y**

| No. | X | Y | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ | $(Y - \bar{Y})^2$ |
|-----|-----|-----|---------------|---------------|-------------------|-------------------|
| 1 | 112 | 138 | 6.21 | 7.13 | 38.50 | 50.81 |
| 2 | 112 | 137 | 6.21 | 6.13 | 38.50 | 37.55 |
| 3 | 115 | 141 | 9.21 | 10.13 | 84.73 | 102.58 |
| 4 | 109 | 144 | 3.21 | 13.13 | 10.27 | 172.35 |
| 5 | 106 | 144 | 0.21 | 13.13 | 0.04 | 172.35 |
| 6 | 109 | 139 | 3.21 | 8.13 | 10.27 | 66.07 |
| 7 | 116 | 129 | 10.21 | -1.87 | 104.14 | 3.50 |
| 8 | 111 | 132 | 5.21 | 1.13 | 27.09 | 1.27 |
| 9 | 100 | 128 | -5.79 | -2.87 | 33.58 | 8.25 |
| 10 | 95 | 117 | -10.79 | -13.87 | 116.53 | 192.43 |
| 11 | 102 | 126 | -3.79 | -4.87 | 14.40 | 23.73 |
| 12 | 83 | 122 | -22.79 | -8.87 | 519.61 | 78.71 |
| 13 | 94 | 116 | -11.79 | -14.87 | 139.12 | 221.17 |
| 14 | 110 | 132 | 4.21 | 1.13 | 17.68 | 1.27 |
| 15 | 103 | 124 | -2.79 | -6.87 | 7.81 | 47.22 |
| 16 | 121 | 140 | 15.21 | 9.13 | 231.20 | 83.32 |
| 17 | 105 | 123 | -0.79 | -7.87 | 0.63 | 61.97 |
| 18 | 107 | 133 | 1.21 | 2.13 | 1.45 | 4.53 |
| 19 | 101 | 126 | -4.79 | -4.87 | 22.99 | 23.73 |
| 20 | 130 | 129 | 24.21 | -1.87 | 585.89 | 3.50 |
| 21 | 103 | 118 | -2.79 | -12.87 | 7.81 | 165.68 |
| 22 | 89 | 121 | -16.79 | -9.87 | 282.07 | 97.45 |
| 23 | 102 | 126 | -3.79 | -4.87 | 14.40 | 23.73 |
| 24 | 116 | 137 | 10.21 | 6.13 | 104.14 | 37.55 |
| 25 | 117 | 132 | 11.21 | 1.13 | 125.55 | 1.27 |
| 26 | 117 | 145 | 11.21 | 14.13 | 125.55 | 199.61 |
| 27 | 114 | 145 | 8.21 | 14.13 | 67.32 | 199.61 |
| 28 | 106 | 126 | 0.21 | -4.87 | 0.04 | 23.73 |
| 29 | 92 | 125 | -13.79 | -5.87 | 190.30 | 34.48 |
| 30 | 111 | 136 | 5.21 | 5.13 | 27.09 | 26.30 |
| 31 | 95 | 133 | -10.79 | 2.13 | 116.53 | 4.53 |
| 32 | 116 | 136 | 10.21 | 5.13 | 104.14 | 26.30 |
| 33 | 104 | 134 | -1.79 | 3.13 | 3.22 | 9.79 |
| 34 | 106 | 132 | 0.21 | 1.13 | 0.04 | 1.27 |
| 35 | 85 | 128 | -20.79 | -2.87 | 432.43 | 8.25 |
| 36 | 112 | 135 | 6.21 | 4.13 | 38.50 | 17.04 |
| 37 | 98 | 126 | -7.79 | -4.87 | 60.76 | 23.73 |
| 38 | 98 | 129 | -7.79 | -1.87 | 60.76 | 3.50 |
| 39 | 104 | 120 | -1.79 | -10.87 | 3.22 | 118.20 |

| No. | X | Y | $X - \bar{X}$ | $Y - \bar{Y}$ | $(X - \bar{X})^2$ | $(Y - \bar{Y})^2$ |
|---------------|------|------|---------------|---------------|-------------------|-------------------|
| Jumlah | 4126 | 5104 | | | 3768.36 | 2378.359 |

Perhitungan Rata-rata, Varians dan Simpangan Baku

Variabel X

Variabel Y

Rata-rata :

$$\begin{aligned}\bar{X} &= \frac{\sum X}{n} \\ &= \frac{4126}{39} \\ &= 105.79\end{aligned}$$

$$\begin{aligned}\bar{Y} &= \frac{\sum Y}{n} \\ &= \frac{5104}{39} \\ &= 130.87\end{aligned}$$

Varians :

$$\begin{aligned}S^2 &= \frac{\sum(X-\bar{X})^2}{n-1} \\ &= \frac{3768.36}{38} \\ &= 99.167\end{aligned}$$

$$\begin{aligned}S^2 &= \frac{\sum(Y-\bar{Y})^2}{n-1} \\ &= \frac{2378.36}{38} \\ &= 62.588\end{aligned}$$

Simpangan Baku :

$$\begin{aligned}SD &= \sqrt{S^2} \\ &= \sqrt{99.167} \\ &= 9.958\end{aligned}$$

$$\begin{aligned}SD &= \sqrt{S^2} \\ &= \sqrt{62.588} \\ &= 7.911\end{aligned}$$

Data Berpasangan Variabel X dan Variabel Y

| No. Resp | K | n | X | Y | X² | Y² | XY |
|-----------------|----------|----------|----------|----------|----------------------|----------------------|-----------|
| 1 | 1 | 1 | 83 | 122 | 6889 | 14884 | 10126 |
| 2 | 2 | 1 | 85 | 128 | 7225 | 16384 | 10880 |
| 3 | 3 | 1 | 89 | 121 | 7921 | 14641 | 10769 |
| 4 | 4 | 1 | 92 | 125 | 8464 | 15625 | 11500 |
| 5 | 5 | 1 | 94 | 116 | 8836 | 13456 | 10904 |
| 6 | 6 | 2 | 95 | 117 | 9025 | 13689 | 11115 |
| 7 | | | 95 | 133 | 9025 | 17689 | 12635 |
| 8 | 7 | 2 | 98 | 126 | 9604 | 15876 | 12348 |
| 9 | | | 98 | 129 | 9604 | 16641 | 12642 |
| 10 | 8 | 1 | 100 | 128 | 10000 | 16384 | 12800 |
| 11 | 9 | 1 | 101 | 126 | 10201 | 15876 | 12726 |
| 12 | 10 | 2 | 102 | 126 | 10404 | 15876 | 12852 |
| 13 | | | 102 | 126 | 10404 | 15876 | 12852 |
| 14 | 11 | 2 | 103 | 124 | 10609 | 15376 | 12772 |
| 15 | | | 103 | 118 | 10609 | 13924 | 12154 |
| 16 | 12 | 2 | 104 | 134 | 10816 | 17956 | 13936 |
| 17 | | | 104 | 120 | 10816 | 14400 | 12480 |
| 18 | 13 | 1 | 105 | 123 | 11025 | 15129 | 12915 |
| 19 | 14 | 3 | 106 | 144 | 11236 | 20736 | 15264 |
| 20 | | | 106 | 126 | 11236 | 15876 | 13356 |
| 21 | | | 106 | 132 | 11236 | 17424 | 13992 |
| 22 | 15 | 1 | 107 | 133 | 11449 | 17689 | 14231 |
| 23 | 16 | 2 | 109 | 144 | 11881 | 20736 | 15696 |
| 24 | | | 109 | 139 | 11881 | 19321 | 15151 |
| 25 | 17 | 1 | 110 | 132 | 12100 | 17424 | 14520 |
| 26 | 18 | 2 | 111 | 132 | 12321 | 17424 | 14652 |
| 27 | | | 111 | 136 | 12321 | 18496 | 15096 |
| 28 | 19 | 3 | 112 | 138 | 12544 | 19044 | 15456 |
| 29 | | | 112 | 137 | 12544 | 18769 | 15344 |
| 30 | | | 112 | 135 | 12544 | 18225 | 15120 |
| 31 | 20 | 1 | 114 | 145 | 12996 | 21025 | 16530 |
| 32 | 21 | 1 | 115 | 141 | 13225 | 19881 | 16215 |
| 33 | 22 | 3 | 116 | 129 | 13456 | 16641 | 14964 |
| 34 | | | 116 | 137 | 13456 | 18769 | 15892 |
| 35 | | | 116 | 136 | 13456 | 18496 | 15776 |
| 36 | 23 | 2 | 117 | 132 | 13689 | 17424 | 15444 |
| 37 | | | 117 | 145 | 13689 | 21025 | 16965 |
| 38 | 24 | 1 | 121 | 140 | 14641 | 19600 | 16940 |

| No. Resp | K | n | X | Y | X² | Y² | XY |
|-----------------|-----------|-----------|-------------|-------------|----------------------|----------------------|---------------|
| 39 | 25 | 1 | 130 | 129 | 16900 | 16641 | 16770 |
| Jumlah | 25 | 39 | 4126 | 5104 | 440278 | 670348 | 541780 |

Perhitungan Uji Linieritas dengan Persamaan Regresi Linier

Diketahui

$$\begin{aligned}n &= 39 \\ \Sigma X &= 4126 \\ \Sigma X^2 &= 440278 \\ \Sigma Y &= 5104 \\ \Sigma Y^2 &= 670348 \\ \Sigma XY &= 541780\end{aligned}$$

Dimasukkan ke dalam rumus :

$$\begin{aligned}a &= \frac{(\Sigma Y)(\Sigma X^2) - (\Sigma X)(\Sigma XY)}{n \Sigma X^2 - (\Sigma X)^2} \\ &= \frac{5104 \cdot 440278 - 4126 \cdot 541780}{39 \cdot 440278 - 4126^2} \\ &= \frac{2247178912 - 2235384280}{17170842 - 17023876} \\ &= \frac{11794632}{146966} \\ &= 80.2542\end{aligned}$$

$$\begin{aligned}b &= \frac{n \Sigma XY - (\Sigma X)(\Sigma Y)}{n \Sigma X^2 - (\Sigma X)^2} \\ &= \frac{39 \cdot 541780 - 4126 \cdot 5104}{39 \cdot 440278 - 4126^2} \\ &= \frac{21129420 - 21059104}{17170842 - 17023876} \\ &= \frac{70316}{146966} \\ &= 0.47845\end{aligned}$$

Jadi persamaanya adalah :

$$\hat{Y} = 80.25 + 0.478 X$$

Tabel Perhitungan Rata-rata, Varians dan Simpangan Baku

Regresi $\hat{Y} = 80,25 + 0,478X$

| No. | X | Y | \hat{Y} | $(Y - \hat{Y})$ | $(Y - \hat{Y}) - \overline{(Y - \hat{Y})}$ | $[(Y - \hat{Y}) - \overline{(Y - \hat{Y})}]^2$ |
|-----|-----|-----|-----------|-----------------|--|--|
| 1 | 83 | 122 | 119.97 | 2.0344 | 2.0344 | 4.1389 |
| 2 | 85 | 128 | 120.92 | 7.0775 | 7.0775 | 50.0914 |
| 3 | 89 | 121 | 122.84 | -1.8363 | -1.8363 | 3.3719 |
| 4 | 92 | 125 | 124.27 | 0.7284 | 0.7284 | 0.5305 |
| 5 | 94 | 116 | 125.23 | -9.2285 | -9.2285 | 85.1657 |
| 6 | 95 | 117 | 125.71 | -8.7070 | -8.7070 | 75.8115 |
| 7 | 95 | 133 | 125.71 | 7.2930 | 7.2930 | 53.1881 |
| 8 | 98 | 126 | 127.14 | -1.1423 | -1.1423 | 1.3049 |
| 9 | 98 | 129 | 127.14 | 1.8577 | 1.8577 | 3.4509 |
| 10 | 100 | 128 | 128.10 | -0.0992 | -0.0992 | 0.0098 |
| 11 | 101 | 126 | 128.58 | -2.5777 | -2.5777 | 6.6445 |
| 12 | 102 | 126 | 129.06 | -3.0561 | -3.0561 | 9.3400 |
| 13 | 102 | 126 | 129.06 | -3.0561 | -3.0561 | 9.3400 |
| 14 | 103 | 124 | 129.53 | -5.5346 | -5.5346 | 30.6316 |
| 15 | 103 | 118 | 129.53 | -11.5346 | -11.5346 | 133.0467 |
| 16 | 104 | 134 | 130.01 | 3.9870 | 3.9870 | 15.8959 |
| 17 | 104 | 120 | 130.01 | -10.0130 | -10.0130 | 100.2609 |
| 18 | 105 | 123 | 130.49 | -7.4915 | -7.4915 | 56.1224 |
| 19 | 106 | 144 | 130.97 | 13.0301 | 13.0301 | 169.7825 |
| 20 | 106 | 126 | 130.97 | -4.9699 | -4.9699 | 24.7003 |
| 21 | 106 | 132 | 130.97 | 1.0301 | 1.0301 | 1.0610 |
| 22 | 107 | 133 | 131.45 | 1.5516 | 1.5516 | 2.4075 |
| 23 | 109 | 144 | 132.41 | 11.5947 | 11.5947 | 134.4373 |
| 24 | 109 | 139 | 132.41 | 6.5947 | 6.5947 | 43.4902 |
| 25 | 110 | 132 | 132.88 | -0.8837 | -0.8837 | 0.7810 |
| 26 | 111 | 132 | 133.36 | -1.3622 | -1.3622 | 1.8556 |
| 27 | 111 | 136 | 133.36 | 2.6378 | 2.6378 | 6.9580 |
| 28 | 112 | 138 | 133.84 | 4.1594 | 4.1594 | 17.3002 |
| 29 | 112 | 137 | 133.84 | 3.1594 | 3.1594 | 9.9815 |
| 30 | 112 | 135 | 133.84 | 1.1594 | 1.1594 | 1.3441 |
| 31 | 114 | 145 | 134.80 | 10.2025 | 10.2025 | 104.0901 |
| 32 | 115 | 141 | 135.28 | 5.7240 | 5.7240 | 32.7642 |
| 33 | 116 | 129 | 135.75 | -6.7544 | -6.7544 | 45.6225 |
| 34 | 116 | 137 | 135.75 | 1.2456 | 1.2456 | 1.5514 |
| 35 | 116 | 136 | 135.75 | 0.2456 | 0.2456 | 0.0603 |
| 36 | 117 | 132 | 136.23 | -4.2329 | -4.2329 | 17.9174 |

| No. | X | Y | \hat{Y} | $(Y - \hat{Y})$ | $(Y - \hat{Y}) - \overline{(Y - \hat{Y})}$ | $[(Y - \hat{Y}) - \overline{(Y - \hat{Y})}]^2$ |
|---------------|-----|-----|-----------|-----------------|--|--|
| 37 | 117 | 145 | 136.23 | 8.7671 | 8.7671 | 76.8621 |
| 38 | 121 | 140 | 138.15 | 1.8533 | 1.8533 | 3.4347 |
| 39 | 130 | 129 | 142.45 | -13.4528 | -13.4528 | 180.9767 |
| Jumlah | | | | 0.00 | | 1515.72 |

Perhitungan Rata-rata, Varians dan Simpangan Baku

Regresi $\hat{Y} = 80,25 + 0,478X$

1. Rata-rata = $\overline{Y - \hat{Y}} = \frac{\Sigma(Y - \hat{Y})}{n}$
 $= \frac{0,00}{39}$
 $= 0,0000$

2. Varians = $S^2 = \frac{\Sigma\{(Y - \hat{Y}) - \overline{(Y - \hat{Y})}\}^2}{n - 1}$
 $= \frac{1515,724}{38}$
 $= 39,887$

3. Simpangan Baku = $S = \sqrt{S^2}$
 $= \sqrt{39,887}$
 $= 6,31565$

Perhitungan Normalitas Galat Taksiran Y Atas X

Regresi $\hat{Y} = 80,25 + 0,478X$

| No. | $(Y - \hat{Y})$ (Xi) | $(Y - \hat{Y}) - \overline{(Y - \hat{Y})}$ (Xi - \bar{Xi}) | Zi | Zt | F(zi) | S(zi) | [F(zi) - S(zi)] |
|-----|-------------------------|--|---------|--------|--------|--------|-----------------|
| 1 | -13.4528 | -13.4528 | -2.1301 | 0.4834 | 0.0166 | 0.0256 | 0.009 |
| 2 | -11.5346 | -11.5346 | -1.8263 | 0.4656 | 0.0344 | 0.0513 | 0.017 |
| 3 | -10.0130 | -10.0130 | -1.5854 | 0.4429 | 0.0571 | 0.0769 | 0.020 |
| 4 | -9.2285 | -9.2285 | -1.4612 | 0.4279 | 0.0721 | 0.1026 | 0.030 |
| 5 | -8.7070 | -8.7070 | -1.3786 | 0.4147 | 0.0853 | 0.1282 | 0.043 |
| 6 | -7.4915 | -7.4915 | -1.1862 | 0.3810 | 0.1190 | 0.1538 | 0.035 |
| 7 | -6.7544 | -6.7544 | -1.0695 | 0.3554 | 0.1446 | 0.1795 | 0.035 |
| 8 | -5.5346 | -5.5346 | -0.8763 | 0.3078 | 0.1922 | 0.2051 | 0.013 |
| 9 | -4.9699 | -4.9699 | -0.7869 | 0.2823 | 0.2177 | 0.2308 | 0.013 |
| 10 | -4.2329 | -4.2329 | -0.6702 | 0.2486 | 0.2514 | 0.2564 | 0.005 |
| 11 | -3.0561 | -3.0561 | -0.4839 | 0.1844 | 0.3156 | 0.2821 | 0.034 |
| 12 | -3.0561 | -3.0561 | -0.4839 | 0.1844 | 0.3156 | 0.3077 | 0.008 |
| 13 | -2.5777 | -2.5777 | -0.4081 | 0.1554 | 0.3446 | 0.3333 | 0.011 |
| 14 | -1.8363 | -1.8363 | -0.2907 | 0.1141 | 0.3859 | 0.3590 | 0.027 |
| 15 | -1.3622 | -1.3622 | -0.2157 | 0.0832 | 0.4168 | 0.3846 | 0.032 |
| 16 | -1.1423 | -1.1423 | -0.1809 | 0.0714 | 0.4286 | 0.4103 | 0.018 |
| 17 | -0.8837 | -0.8837 | -0.1399 | 0.0517 | 0.4483 | 0.4359 | 0.012 |
| 18 | -0.0992 | -0.0992 | -0.0157 | 0.0040 | 0.4960 | 0.4615 | 0.034 |
| 19 | 0.2456 | 0.2456 | 0.0389 | 0.0120 | 0.5120 | 0.4872 | 0.025 |
| 20 | 0.7284 | 0.7284 | 0.1153 | 0.0438 | 0.5438 | 0.5128 | 0.031 |
| 21 | 1.0301 | 1.0301 | 0.1631 | 0.0636 | 0.5636 | 0.5385 | 0.025 |
| 22 | 1.1594 | 1.1594 | 0.1836 | 0.0714 | 0.5714 | 0.5641 | 0.007 |
| 23 | 1.2456 | 1.2456 | 0.1972 | 0.0754 | 0.5754 | 0.5897 | 0.014 |
| 24 | 1.5516 | 1.5516 | 0.2457 | 0.0948 | 0.5948 | 0.6154 | 0.021 |
| 25 | 1.8533 | 1.8533 | 0.2934 | 0.1141 | 0.6141 | 0.6410 | 0.027 |
| 26 | 1.8577 | 1.8577 | 0.2941 | 0.1141 | 0.6141 | 0.6667 | 0.053 |
| 27 | 2.0344 | 2.0344 | 0.3221 | 0.1255 | 0.6255 | 0.6923 | 0.067 |
| 28 | 2.6378 | 2.6378 | 0.4177 | 0.1591 | 0.6591 | 0.7179 | 0.059 |
| 29 | 3.1594 | 3.1594 | 0.5002 | 0.1915 | 0.6915 | 0.7436 | 0.052 |
| 30 | 3.9870 | 3.9870 | 0.6313 | 0.2357 | 0.7357 | 0.7692 | 0.034 |
| 31 | 4.1594 | 4.1594 | 0.6586 | 0.2422 | 0.7422 | 0.7949 | 0.053 |
| 32 | 5.7240 | 5.7240 | 0.9063 | 0.3159 | 0.8159 | 0.8205 | 0.005 |
| 33 | 6.5947 | 6.5947 | 1.0442 | 0.3508 | 0.8508 | 0.8462 | 0.005 |
| 34 | 7.0775 | 7.0775 | 1.1206 | 0.3686 | 0.8686 | 0.8718 | 0.003 |
| 35 | 7.2930 | 7.2930 | 1.1548 | 0.3749 | 0.8749 | 0.8974 | 0.023 |
| 36 | 8.7671 | 8.7671 | 1.3882 | 0.4162 | 0.9162 | 0.9231 | 0.007 |

| No. | $(Y - \hat{Y})$ (X_i) | $(Y - \hat{Y}) - \overline{(Y - \hat{Y})}$ $(X_i - \bar{X}_i)$ | Z_i | Z_t | $F(z_i)$ | $S(z_i)$ | $[F(z_i) - S(z_i)]$ |
|-----|----------------------------|---|--------|--------|----------|----------|---------------------|
| 37 | 10.2025 | 10.2025 | 1.6154 | 0.4463 | 0.9463 | 0.9487 | 0.002 |
| 38 | 11.5947 | 11.5947 | 1.8359 | 0.4664 | 0.9664 | 0.9744 | 0.008 |
| 39 | 13.0301 | 13.0301 | 2.0631 | 0.4803 | 0.9803 | 1.0000 | 0.020 |

Dari perhitungan, didapat nilai L_{hitung} terbesar = 0.067, L_{tabel} untuk $n = 39$ dengan taraf signifikan 0,05 adalah 0,142. $L_{hitung} < L_{tabel}$. Dengan demikian dapat disimpulkan data berdistribusi Normal.

Langkah Perhitungan Uji Normalitas Galat Taksiran

$$\text{Regresi } \hat{Y} = 80,25 + 0,478X$$

1. Kolom \hat{Y}

$$\begin{aligned}\hat{Y} &= 80,25 + 0,478 X \\ &= 80,25 + 0,478 [83] = 119,97\end{aligned}$$

2. Kolom $Y - \hat{Y}$

$$Y - \hat{Y} = 122 - 119,97 = 2,03$$

3. Kolom $(Y - \hat{Y}) - \overline{(Y - \hat{Y})}$

$$(Y - \hat{Y}) - \overline{(Y - \hat{Y})} = 2,03 - 0,0000 = 2,03$$

4. Kolom $[(Y - \hat{Y}) - \overline{(Y - \hat{Y})}]^2$

$$= 2,03^2 = 4,14$$

5. Kolom $Y - \hat{Y}$ atau (X_i) yang sudah diurutkan dari data terkecil

6. Kolom $(Y - \hat{Y}) - \overline{(Y - \hat{Y})}$ atau $(X_i - \bar{X}_i)$ yang sudah diurutkan dari data terkecil

7. Kolom Z_i

$$Z_i = \frac{(X_i - \bar{X}_i)}{S} = \frac{-13,45}{6,32} = -2,130$$

8. Kolom Z_t

Dari kolom Z_i kemudian dikonsultasikan tabel distribusi Z contoh :- 2,12; pada sumbu menurun cari angka 2,1; lalu pada sumbu mendatar angka 2 Diperoleh nilai $Z_t = 0,4834$

9. Kolom $F(z_i)$

$F(z_i) = 0,5 + Z_t$, jika $Z_i (+)$ & $= 0,5 - Z_t$, Jika $Z_i (-)$

$Z_i = -2,12$, maka $0,5 - Z_t = 0,5 - 0,4830 = 0,0166$

10. Kolom $S(z_i)$

$$\frac{\text{Nomor Responden}}{\text{Jumlah Responden}} = \frac{1}{39} = 0,026$$

11. Kolom $[F(z_i) - S(Z_i)]$

Nilai mutlak antara $F(z_i) - S(Z_i)$

$$= [0,017 - 0,026] = 0,009$$

Perhitungan Uji Keberartian Regresi

1. Mencari Jumlah Kuadrat Total JK (T)

$$\begin{aligned} \text{JK (T)} &= \Sigma Y^2 \\ &= 670348 \end{aligned}$$

2. Mencari jumlah kuadrat regresi a JK (a)

$$\begin{aligned} \text{JK (a)} &= \frac{(\Sigma Y)^2}{n} \\ &= \frac{5104^2}{39} \\ &= 667969.64 \end{aligned}$$

3. Mencari jumlah kuadrat regresi b JK (b/a)

$$\begin{aligned} \text{JK (b)} &= b \left\{ \Sigma XY - \frac{(\Sigma X) (\Sigma Y)}{N} \right\} \\ &= 0.478 \left\{ 541780 - \frac{(4126) (5104)}{39} \right\} \\ &= 862.635 \end{aligned}$$

4. Mencari jumlah kuadrat residu JK (S)

$$\begin{aligned} \text{JK (S)} &= \text{JK (T)} - \text{JK (a)} - \text{JK (b/a)} \\ &= 670348 - 667969.64 - 862.63 \\ &= 1515.724 \end{aligned}$$

5. Mencari Derajat Kebebasan

$$\begin{aligned} \text{dk}_{(T)} &= n = 39 \\ \text{dk}_{(a)} &= 1 \\ \text{dk}_{(b/a)} &= 1 \\ \text{dk}_{(\text{res})} &= n - 2 = 37 \end{aligned}$$

6. Mencari Rata-rata Jumlah Kuadrat

$$RJK_{(b/a)} = \frac{JK_{(b/a)}}{dk_{(b/a)}} = \frac{862.63}{1} = 862.63$$

$$RJK_{(res)} = \frac{JK_{(res)}}{dk_{(res)}} = \frac{1515.72}{37} = 40.97$$

7. Kriteria Pengujian

Terima H_0 jika $F_{hitung} < F_{tabel}$, maka regresi tidak berarti

Tolak H_0 jika $F_{hitung} > F_{tabel}$, maka regresi berarti

8. Pengujian

$$F_{hitung} = \frac{RJK_{(b/a)}}{RJK_{(res)}} = \frac{862.63}{40.97} = 21.06$$

9. Kesimpulan

Berdasarkan hasil perhitungan $F_{hitung} = 21.06$, dan $F_{tabel(0,05;1/37)} = 4,11$ sehingga $F_{hitung} > F_{tabel}$ maka dapat disimpulkan bahwa model persamaan regresi adalah signifikan

Perhitungan Uji Kelinearan Regresi

1. Mencari Jumlah Kuadrat Kekeliruan JK (G)

$$\begin{aligned} JK(G) &= \sum \left\{ \sum Y_k^2 - \frac{\sum Y_k^2}{n_k} \right\} \\ &= 564.167 \end{aligned}$$

2. Mencari Jumlah Kuadrat Tuna cocok JK (TC)

$$\begin{aligned} JK(TC) &= JK(S) - JK(G) \\ &= 1515.724 - 564.167 \\ &= 951.558 \end{aligned}$$

3. Mencari Derajat Kebebasan

$$\begin{aligned} k &= 25 \\ dk_{(TC)} &= k - 2 = 23 \\ dk_{(G)} &= n - k = 14 \end{aligned}$$

4. Mencari rata-rata jumlah kuadrat

$$\begin{aligned} RJK_{(TC)} &= \frac{951.56}{23} = 41.37 \\ RJK_{(G)} &= \frac{564.17}{14} = 40.30 \end{aligned}$$

5. Kriteria Pengujian

Tolak H_0 jika $F_{hitung} > F_{tabel}$, maka regresi tidak linier

Terima H_0 jika $F_{hitung} < F_{tabel}$, maka regresi linier

6. Pengujian

$$F_{hitung} = \frac{RJK_{(TC)}}{RJK_{(G)}} = \frac{41.37}{40.30} = 1.03$$

7. Kesimpulan

Berdasarkan hasil perhitungan $F_{hitung} = 1.03$, dan $F_{tabel(0,05;23/14)} = 2.46$ sehingga $F_{hitung} < F_{tabel}$ maka dapat disimpulkan bahwa model persamaan regresi adalah linier

Perhitungan JK (G)

| No. | K | n _i | X | Y | Y ² | XY | ΣYk ² | $\frac{(\Sigma Yk)^2}{n}$ | $\left\{ \Sigma Yk^2 - \frac{(\Sigma Yk)^2}{n} \right\}$ |
|-----|----|----------------|-----|-----|----------------|-------|------------------|---------------------------|--|
| 1 | 1 | 1 | 83 | 122 | 14884 | 10126 | | | |
| 2 | 2 | 1 | 85 | 128 | 16384 | 10880 | | | |
| 3 | 3 | 1 | 89 | 121 | 14641 | 10769 | | | |
| 4 | 4 | 1 | 92 | 125 | 15625 | 11500 | | | |
| 5 | 5 | 1 | 94 | 116 | 13456 | 10904 | | | |
| 6 | 6 | 2 | 95 | 117 | 13689 | 11115 | 31378 | 31250.00 | 128.00 |
| 7 | | | 95 | 133 | 17689 | 12635 | | | |
| 8 | 7 | 2 | 98 | 126 | 15876 | 12348 | 32517 | 32512.50 | 4.50 |
| 9 | | | 98 | 129 | 16641 | 12642 | | | |
| 10 | 8 | 1 | 100 | 128 | 16384 | 12800 | | | |
| 11 | 9 | 1 | 101 | 126 | 15876 | 12726 | | | |
| 12 | 10 | 2 | 102 | 126 | 15876 | 12852 | 31752 | 31752.00 | 0.00 |
| 13 | | | 102 | 126 | 15876 | 12852 | | | |
| 14 | 11 | 2 | 103 | 124 | 15376 | 12772 | 29300 | 29282.00 | 18.00 |
| 15 | | | 103 | 118 | 13924 | 12154 | | | |
| 16 | 12 | 2 | 104 | 134 | 17956 | 13936 | 32356 | 32258.00 | 98.00 |
| 17 | | | 104 | 120 | 14400 | 12480 | | | |
| 18 | 13 | 1 | 105 | 123 | 15129 | 12915 | | | |
| 19 | 14 | 3 | 106 | 144 | 20736 | 15264 | 54036 | 53868.00 | 168.00 |
| 20 | | | 106 | 126 | 15876 | 13356 | | | |
| 21 | | | 106 | 132 | 17424 | 13992 | | | |
| 22 | 15 | 1 | 107 | 133 | 17689 | 14231 | | | |
| 23 | 16 | 2 | 109 | 144 | 20736 | 15696 | 40057 | 40044.50 | 12.50 |
| 24 | | | 109 | 139 | 19321 | 15151 | | | |
| 25 | 17 | 1 | 110 | 132 | 17424 | 14520 | | | |
| 26 | 18 | 2 | 111 | 132 | 17424 | 14652 | 35920 | 35912.00 | 8.00 |
| 27 | | | 111 | 136 | 18496 | 15096 | | | |
| 28 | 19 | 3 | 112 | 138 | 19044 | 15456 | 56038 | 56033.33 | 4.67 |
| 29 | | | 112 | 137 | 18769 | 15344 | | | |
| 30 | | | 112 | 135 | 18225 | 15120 | | | |
| 31 | 20 | 1 | 114 | 145 | 21025 | 16530 | | | |
| 32 | 21 | 1 | 115 | 141 | 19881 | 16215 | | | |
| 33 | 22 | 3 | 116 | 129 | 16641 | 14964 | 53906 | 53868.00 | 38.00 |
| 34 | | | 116 | 137 | 18769 | 15892 | | | |
| 35 | | | 116 | 136 | 18496 | 15776 | | | |
| 36 | 23 | 2 | 117 | 132 | 17424 | 15444 | 38449 | 38364.50 | 84.50 |
| 37 | | | 117 | 145 | 21025 | 16965 | | | |

| No. | K | n_i | X | Y | Y^2 | XY | ΣYk^2 | $\frac{(\Sigma Yk)^2}{n}$ | $\left\{ \Sigma Yk^2 - \frac{(\Sigma Yk)^2}{n} \right\}$ |
|----------|----|-------|------|------|--------|--------|---------------|---------------------------|--|
| 38 | 24 | 1 | 121 | 140 | 19600 | 16940 | | | |
| 39 | 25 | 1 | 130 | 129 | 16641 | 16770 | | | |
| Σ | 25 | 39 | 4126 | 5104 | 670348 | 541780 | | | 564.17 |

Tabel Anava untuk Uji Keberartian dan Uji Kelinieran Regresi

| Sumber Varians | dk | Jumlah Kuadrat (JK) | Rata-rata Jumlah Kuadrat (RJK) | F_{hitung} | F_{tabel} |
|-----------------------|-----------|---|---------------------------------------|-------------------------------|---------------------------------|
| Total | n | ΣY^2 | | - | |
| Regresi (a) | 1 | $\frac{(\Sigma Y)^2}{n}$ | | | |
| Regresi (b/a) | 1 | $b \left\{ \Sigma XY - \frac{(\Sigma X)(\Sigma Y)}{N} \right\}$ | $\frac{JK(b)}{1}$ | $\frac{S^2_{reg}}{S^2_{res}}$ | Fo > Ft Maka regresi Berarti |
| Residu | n - 2 | JK (S) | $\frac{JK(S)}{n-2}$ | | |
| Tuna Cocok | k - 2 | JK (TC) | $\frac{JK (TC)}{k-2}$ | $\frac{S^2_{TC}}{S^2G}$ | Fo < Ft Maka Regresi Linier |
| Galat Kekeliruan | n - k | JK (G) | $\frac{JK (G)}{n - k}$ | | |

| Sumber Varians | dk | Jumlah Kuadrat (JK) | Rata-rata Jumlah Kuadrat (RJK) | F_{hitung} | F_{tabel} |
|-----------------------|-----------|----------------------------|---------------------------------------|---------------------------|--------------------------|
| Total | 39 | 670348.00 | | | |
| Regresi (a) | 1 | 667969.64 | | | |
| Regresi (b/a) | 1 | 862.63 | 862.63 | 21.06 | 4.11 |
| Sisa | 37 | 1515.72 | 40.97 | | |
| Tuna Cocok | 23 | 951.56 | 41.37 | 1.027 | 2.46 |
| Galat Kekeliruan | 14 | 564.17 | 40.30 | | |

Perhitungan Koefisien Korelasi Product Moment

Diketahui

$$\begin{aligned}n &= 39 \\ \Sigma X &= 4126 \\ \Sigma X^2 &= 440278 \\ \Sigma Y &= 5104 \\ \Sigma Y^2 &= 670348 \\ \Sigma XY &= 541780\end{aligned}$$

Dimasukkan ke dalam rumus :

$$\begin{aligned}r_{xy} &= \frac{n \Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{n \Sigma X^2 - (\Sigma X)^2\} \{n \cdot \Sigma Y^2 - (\Sigma Y)^2\}}} \\ &= \frac{39 \cdot 541780 - [4126] \cdot [5104]}{\sqrt{\{39 \cdot 440278 - 4126^2\} \{39 \cdot 670348 - 5104^2\}}} \\ &= \frac{21129420 - 21059104}{\sqrt{146966 \cdot 92756}} \\ &= \frac{70316}{116756.063} \\ &= 0.602\end{aligned}$$

Kesimpulan :

Pada perhitungan product moment di atas diperoleh $r_{hitung}(\rho_{xy}) = 0.602$ karena $\rho > 0$,

Dengan demikian dapat disimpulkan bahwa terdapat hubungan yang positif antara variabel X terhadap variabel Y.

BIODATA PENULIS



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