

Lampiran 13. Analisis varian, Analisis regresi bertatar (*stepwise*), dan Analisis regresi linier berganda kelas diameter diatas 60 cm

**1. Analisis varian**

Regression Analysis: Y versus X1, X2, ...

\* X11 is highly correlated with other X variables  
\* X11 has been removed from the equation

\* X25 is highly correlated with other X variables  
\* X25 has been removed from the equation

\* X26 is highly correlated with other X variables  
\* X26 has been removed from the equation

\* X27 is highly correlated with other X variables  
\* X27 has been removed from the equation

\* X29 is highly correlated with other X variables  
\* X29 has been removed from the equation

\* X30 is highly correlated with other X variables  
\* X30 has been removed from the equation

The regression equation is

$$Y = 6426 + 0.29 X1 - 19.1 X2 - 19.2 X3 + 8.75 X4 + 5.49 X5 - 9.12 X6 + 48.1 X7 - 9.87 X8 - 8.7 X9 - 2.74 X10 - 655 X12 + 23.6 X13 + 162 X14 - 141 X15 + 54.8 X16 - 411 X17 + 14.9 X18 + 146 X19 + 6.2 X20 + 20.3 X21 + 484 X22 - 975 X23 - 680 X24 + 63 X28$$

Predictor	Coef	SE Coef	T	P
Constant	6426	5141	1.25	0.219
X1	0.289	8.103	0.04	0.972
X2	-19.05	15.89	-1.20	0.238
X3	-19.19	11.56	-1.66	0.105
X4	8.751	4.609	1.90	0.065
X5	5.486	2.705	2.03	0.050
X6	-9.124	2.840	-3.21	0.003
X7	48.118	8.514	5.65	0.000
X8	-9.874	5.423	-1.82	0.077
X9	-8.65	10.16	-0.85	0.400
X10	-2.744	1.671	-1.64	0.109
X12	-654.7	416.8	-1.57	0.125
X13	23.61	37.37	0.63	0.531
X14	162.03	48.85	3.32	0.002
X15	-140.7	111.2	-1.26	0.214
X16	54.85	26.17	2.10	0.043
X17	-411.0	706.7	-0.58	0.564
X18	14.90	29.52	0.50	0.617
X19	146.18	88.72	1.65	0.108
X20	6.16	29.55	0.21	0.836
X21	20.271	9.338	2.17	0.036
X22	484.0	611.8	0.79	0.434
X23	-975.4	697.2	-1.40	0.170
X24	-680.3	344.2	-1.98	0.055
X28	62.6	104.6	0.60	0.553

S = 343.8      R-Sq = 86.8%      R-Sq(adj) = 78.4%



## Lampiran 13. (Lanjutan)

X1	28.5	23.0	21.7	15.4	10.1		
T-Value	4.73	3.86	3.91	2.85	1.98		
P-Value	0.000	0.000	0.000	0.006	0.053		
X6		-7.0	-7.4	-8.6	-7.0	-8.0	
T-Value		-2.97	-3.36	-4.23	-3.69	-4.25	
P-Value		0.004	0.001	0.000	0.001	0.000	
X14			22.8	25.8	68.9	76.8	
T-Value			3.28	4.00	5.20	5.94	
P-Value			0.002	0.000	0.000	0.000	
X8				-2.94	-4.24	-4.94	
T-Value				-3.46	-4.99	-6.22	
P-Value				0.001	0.000	0.000	
X13					42	49	
T-Value					3.63	4.26	
P-Value					0.001	0.000	
S	551	474	446	413	379	344	352
R-Sq	45.51	60.30	65.45	70.86	75.93	80.50	79.14
R-Sq(adj)	44.62	58.97	63.70	68.85	73.81	78.41	77.31

**3. Analisis regresi berganda****Regression Analysis: Y versus X7, X1, X6, X14, X8, X13**

The regression equation is

$$Y = -1890 + 48.9 X7 + 10.1 X1 - 7.03 X6 + 68.9 X14 - 4.24 X8 + 42.4 X13$$

Predictor	Coef	SE Coef	T	P
Constant	-1890	1250	-1.51	0.136
X7	48.908	5.294	9.24	0.000
X1	10.119	5.108	1.98	0.053
X6	-7.025	1.903	-3.69	0.001
X14	68.86	13.25	5.20	0.000
X8	-4.2440	0.8506	-4.99	0.000
X13	42.38	11.69	3.63	0.001

S = 343.7      R-Sq = 80.5%      R-Sq(adj) = 78.4%

## Analysis of Variance

Source	DF	SS	MS	F	P
Regression	6	27314436	4552406	38.54	0.000
Residual Error	56	6615227	118129		
Total	62	33929663			

Source	DF	Seq SS
X7	1	15441873
X1	1	5016381
X6	1	1750310
X14	1	1834575
X8	1	1718373
X13	1	1552923

## Unusual Observations

Obs	X7	Y	Fit	SE Fit	Residual	St Resid
6	28.0	1590.0	2317.8	111.4	-727.8	-2.24R
42	36.0	2038.0	2822.8	95.1	-784.8	-2.38R
43	56.0	3619.0	4326.4	128.3	-707.4	-2.22R
54	36.0	4476.0	3554.8	102.7	921.2	2.81R
63	57.0	4904.0	5186.6	216.0	-282.6	-1.06 X

R denotes an observation with a large standardized residual

X denotes an observation whose X value gives it large influence.