

Laporan Praktikum 10

Statistika dan Probabilitas



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PROGRAM STUDI SISTEM INFORMASI
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UNIVERSITAS AHMAD DAHLAN
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1. Tujuan Praktikum

1. Mahasiswa dapat mengenal menu regresi pada SPSS
2. Mahasiswa dapat melakukan analisis regresi data dengan program SPSS

2. Dasar Teori

Analisis regresi digunakan terutama untuk tujuan peramalan, dimana dalam model tersebut ada variabel dependen (tergantung) dan independen (bebas). Regresi sering dibedakan menjadi dua, yaitu regresi sederhana (simple regression) jika hanya ada satu variabel independen dan regresi berganda jika lebih dari satu variabel independen.

3. Percobaan

```
GET  
FILE='D:\coolyeah\statprob\praktikum\E_2215016135_Taufan Ali_praktikum 10.sav'.  
DATASET NAME DataSet2 WINDOW=FRONT.  
REGRESSION  
/MISSING LISTWISE  
/STATISTICS COEFF OUTS R ANOVA  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT penjualan  
/METHOD=ENTER promosi  
/SCATTERPLOT=(*SRESID ,*ZPRED) (*ZPRED ,penjualan)  
/RESIDUALS DURBIN NORMPROB(ZRESID) ID(daerah)  
/CASEWISE PLOT(ZRESID) ALL.
```

➔ Regression

[DataSet2] D:\coolyeah\statprob\praktikum\E_2215016135_Taufan Ali_praktikum 10.sav

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	promosi ^b	.	Enter

a. Dependent Variable: penjualan

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.920 ^a	.847	.835	16.675	1.626

a. Predictors: (Constant), promosi

b. Dependent Variable: penjualan

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20048.927	1	20048.927	72.105	.000 ^b
	Residual	3614.673	13	278.052		
	Total	23663.600	14			

a. Dependent Variable: penjualan

b. Predictors: (Constant), promosi

Coefficients^a

Model	Unstandardized Coefficients		Beta	t	Sig.
	B	Std. Error			
1	(Constant)	109.355	16.704	6.547	.000
	promosi	3.931	.463	8.491	.000

a. Dependent Variable: penjualan

Casewise Diagnostics^a

Case Number	daerah	Std. Residual	penjualan	Predicted Value	Residual	Status
1	Jakarta	-.393	205	211.55	-6.549	
2	Tangerang	-.804	206	219.41	-13.410	
3	Bekasi	.424	254	246.92	7.076	
4	Bogor	.180	246	242.99	3.006	
5	Bandung	.546	201	191.90	9.104	
6	Semarang	-.657	291	301.95	-10.952	
7	Solo	.404	234	227.27	6.729	
8	Yogya	-1.096	209	227.27	-18.271	
9	Surabaya	.019	204	203.69	.312	
10	Purwokerto	-.912	216	231.20	-15.202	
11	Madiun	.592	245	235.13	9.868	
12	Tuban	-.485	286	294.09	-8.091	
13	Malang	-.576	312	321.60	-9.604	
14	Kudus	-.095	265	266.58	-1.577	
15	Pekalongan	2.852	322	274.44	47.562	
16		M ^b
17		M ^b
18		M ^b
19		M ^b
20		M ^b

a. Dependent Variable: penjualan

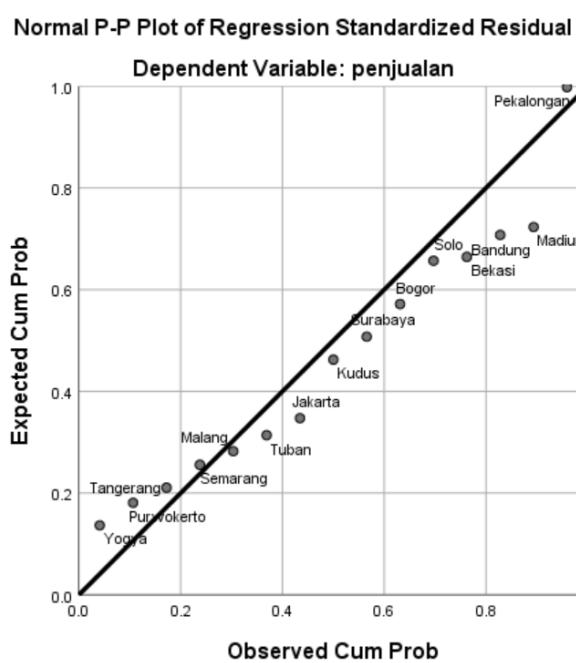
b. Missing Case

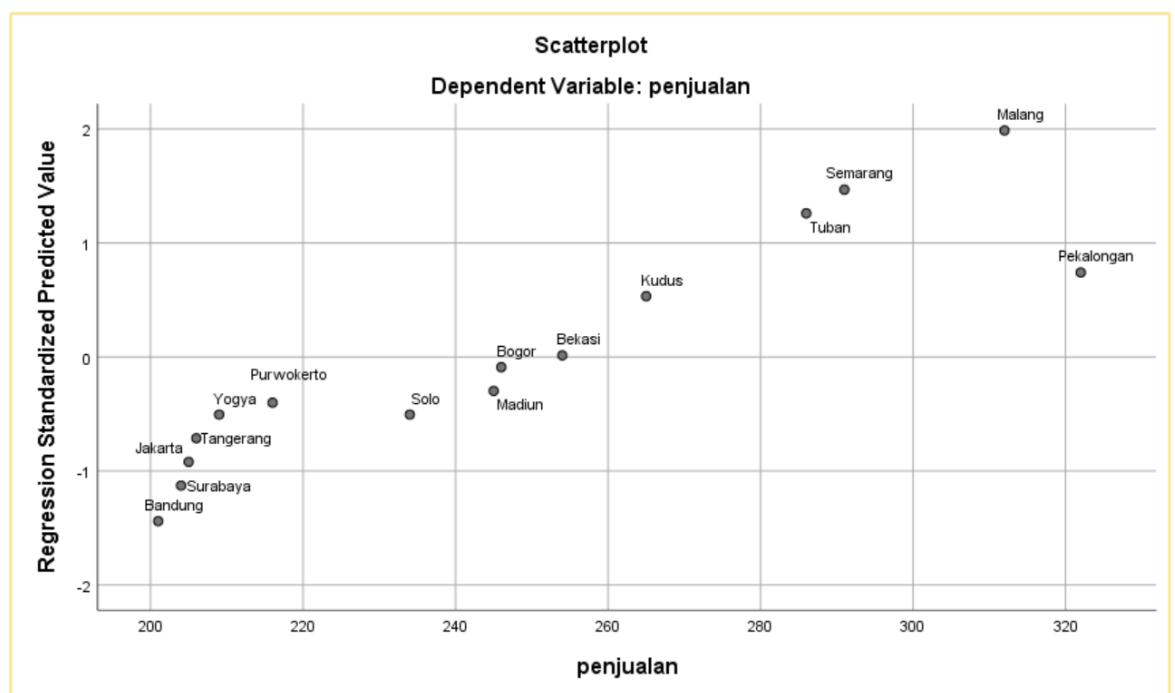
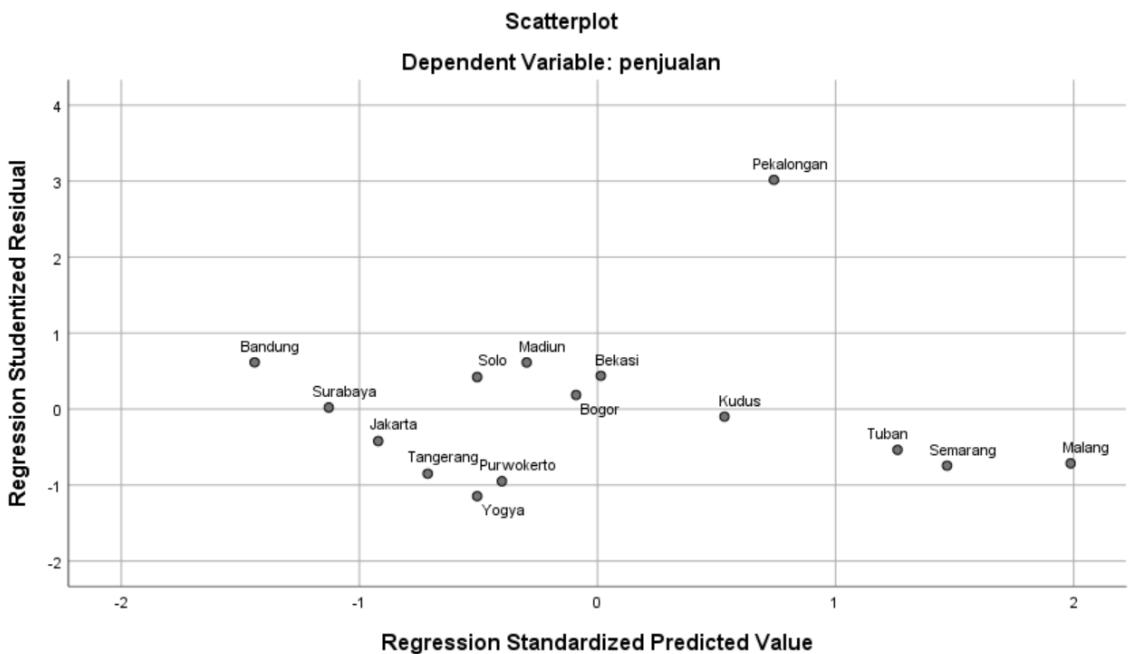
Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	191.90	321.60	246.40	37.843	15
Std. Predicted Value	-1.440	1.987	.000	1.000	15
Standard Error of Predicted Value	4.306	9.848	5.884	1.620	15
Adjusted Predicted Value	189.41	326.75	246.76	38.892	15
Residual	-18.271	47.562	.000	16.068	15
Std. Residual	-1.096	2.852	.000	.964	15
Stud. Residual	-1.145	3.016	-.009	1.026	15
Deleted Residual	-19.967	53.194	-.356	18.251	15
Stud. Deleted Residual	-1.161	5.291	.142	1.540	15
Mahal. Distance	.000	3.949	.933	1.107	15
Cook's Distance	.000	.539	.068	.135	15
Centered Leverage Value	.000	.282	.067	.079	15

a. Dependent Variable: penjualan

Charts





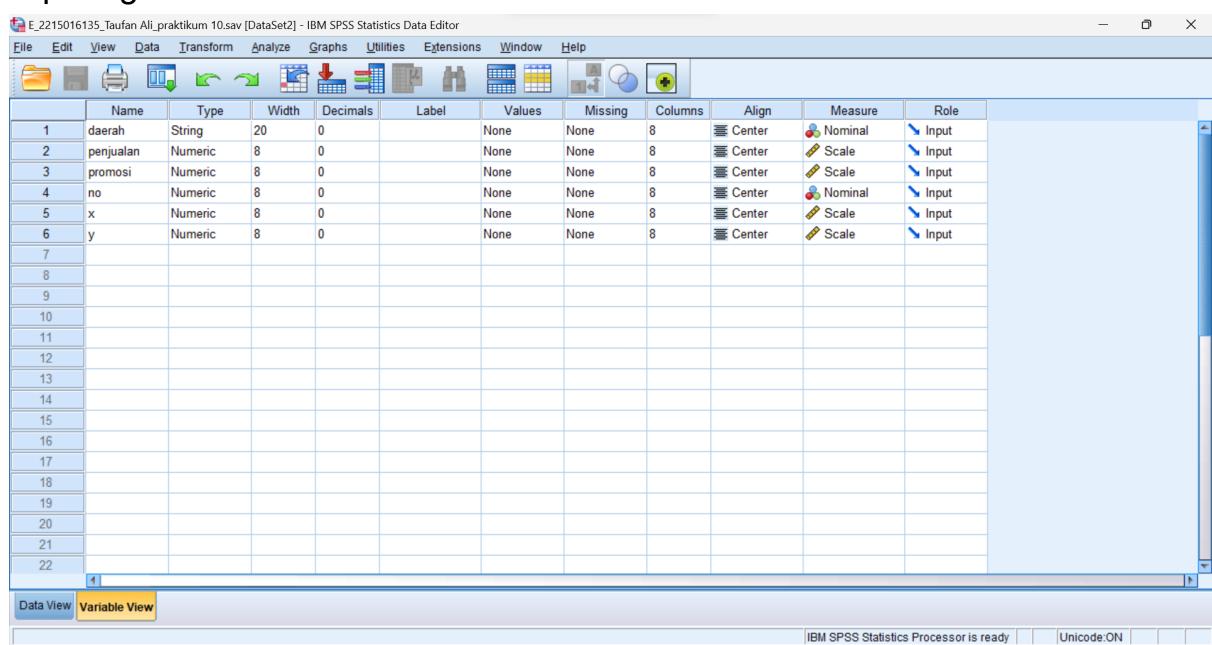
4. Tugas

Tentukan persamaan regresi dari data sebagai berikut :

No	X	Y
1	47	37
2	72	69
3	59	70
4	50	35
5	60	71
6	70	72
7	50	40
8	65	40
9	54	69
10	57	68
11	50	38
12	72	56
13	68	57
14	63	58
15	60	55
16	58	56
17	68	57
18	74	62
19	57	50
20	47	50
Jml	1201	1110

JAWAB :

1. Buka Variable View dan masukkan variabel no, x, dan y. Lakukan seperti gambar dibawah ini :

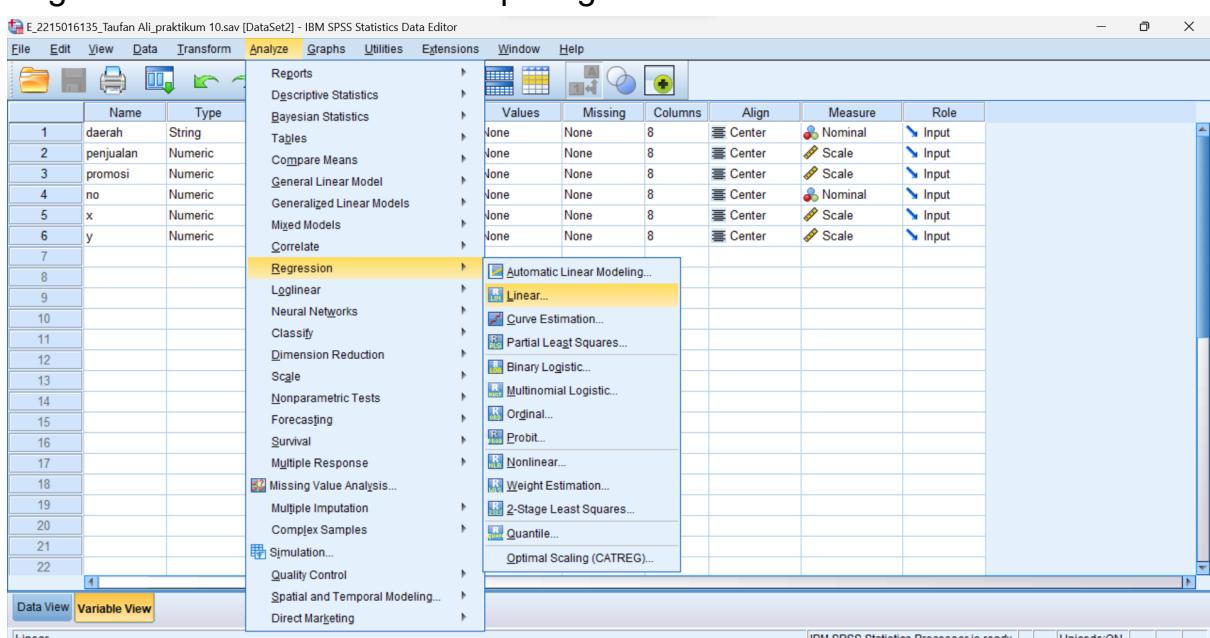


2. Buka Data View dan isikan seperti gambar dibawah ini :

The screenshot shows the SPSS Data View window. The dataset contains 22 rows of data with 6 variables. The variables are: daerah, penjualan, promosi, no, x, and y. The data includes city names like Jakarta, Tangerang, Bekasi, Bogor, Bandung, Semarang, Solo, Yogyakarta, Surabaya, Purwokerto, Madiun, Tuban, Malang, Kudus, and Pekalongan, along with numerical values for penjualan, promosi, no, x, and y.

	daerah	penjualan	promosi	no	x	y	var										
1	Jakarta	205	26	1	47	37											
2	Tangerang	206	28	2	72	69											
3	Bekasi	254	35	3	59	70											
4	Bogor	246	34	4	50	35											
5	Bandung	201	21	5	60	71											
6	Semarang	291	49	6	70	72											
7	Solo	234	30	7	50	40											
8	Yogyakarta	209	30	8	65	40											
9	Surabaya	204	24	9	54	69											
10	Purwokerto	216	31	10	57	68											
11	Madiun	245	32	11	50	38											
12	Tuban	286	47	12	72	56											
13	Malang	312	54	13	68	57											
14	Kudus	265	40	14	63	58											
15	Pekalongan	322	42	15	60	55											
16	.	.	16	58	56												
17	.	.	17	68	57												
18	.	.	18	74	62												
19	.	.	19	57	50												
20	.	.	20	47	50												
21																	
22																	

3. Lakukan pengujian regresi dengan menggunakan menu Analyze - Regression - Linear. Lakukan seperti gambar dibawah ini :



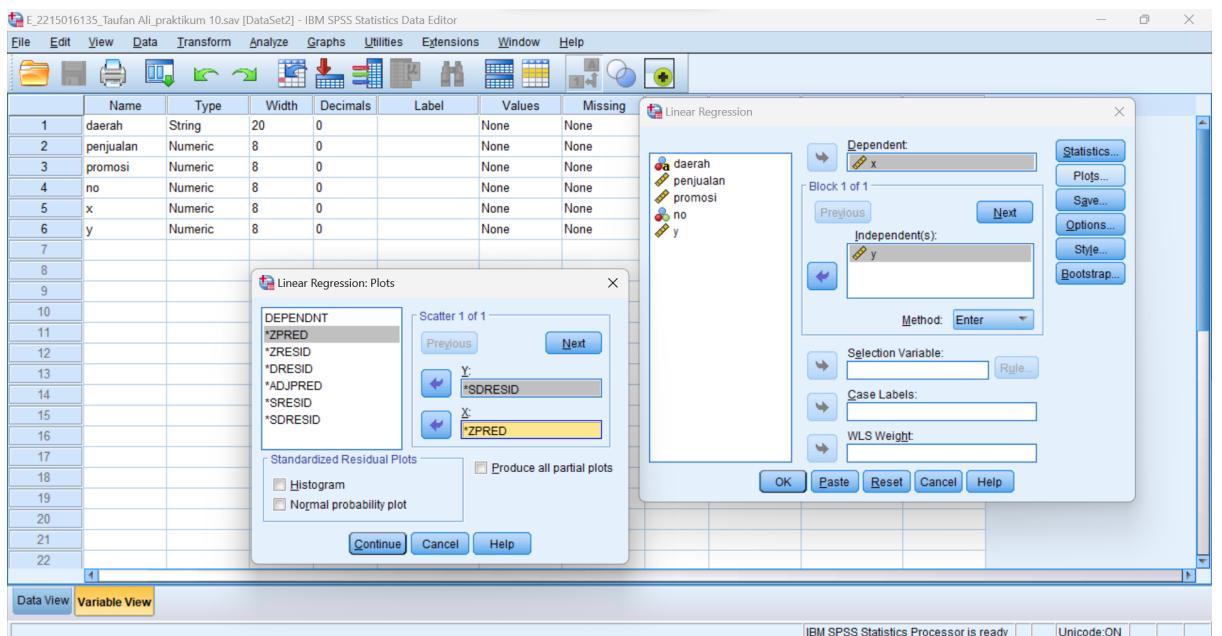
4. Pindahkan variabel x ke dalam Dependent dan variabel Y ke Independent. Pada option, untuk Stepping Method Criteria isi entry dengan .05. Lainnya pada option tidak perlu diubah. Lakukan seperti gambar di bawah :

The screenshot shows the SPSS Data Editor window with the 'Linear Regression' dialog box open. In the main dialog, 'daerah' is set as the dependent variable and 'x' is set as the independent variable. The 'Method' is set to 'Enter'. The 'Statistics...' button is highlighted. An 'Options' sub-dialog is open, showing the 'Stepping Method Criteria' section with 'Use probability of F' selected (Entry: .05, Removal: .10) and 'Include constant in equation' checked. Other sections like 'Missing Values', 'Exclude cases listwise', and 'Replace with mean' are also visible.

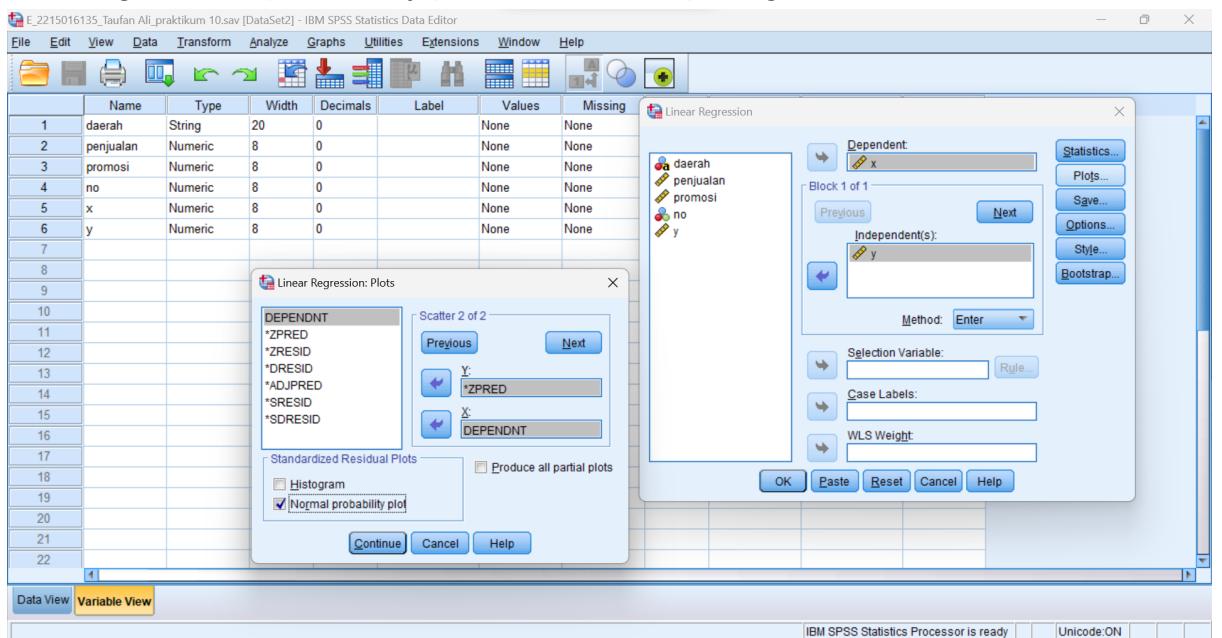
5. Pada Statistic, pilih aktifkan Estimates, Model Fit, Durbin-Watson, Casewise Diagnose, dan pilih All Cases. Lakukan seperti gambar dibawah :

The screenshot shows the SPSS Data Editor window with the 'Linear Regression' dialog box open. In the main dialog, 'daerah' is set as the dependent variable and 'x' is set as the independent variable. The 'Method' is set to 'Enter'. The 'Statistics...' button is highlighted. An 'Statistics' sub-dialog is open, showing the 'Regression Coefficients' section with 'Estimates' and 'Model fit' checked. The 'Residuals' section has 'Durbin-Watson' and 'Casewise diagnostics' checked, with 'All cases' selected for outliers. Other options like 'Confidence intervals', 'Descriptives', 'Part and partial correlations', and 'Covariance matrix' are available but not checked.

6. Pada plots, masukkan SDRESID ke Y dan ZPRED ke X, klik next.
Lakukan seperti gambar di bawah ini :



7. Langkah selanjutnya masukkan ZPRED ke Y dan DEPENDNT ke X.
Centang Normal probability plot. Lakukan seperti gambar dibawah ini :



8. Klik Continue, maka akan keluar output seperti berikut :

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT x
  /METHOD=ENTER y
  /SCATTERPLOT=(*SDRESID ,*ZPRED) (*ZPRED ,x)
  /RESIDUALS DURBIN NORMPROB(ZRESID) ID(no)
  /CASEWISE PLOT(ZRESID) ALL.
```

→ Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	y ^b	.	Enter

a. Dependent Variable: x

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.541 ^a	.292	.253	7.531	1.882

a. Predictors: (Constant), y

b. Dependent Variable: x

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	421.932	1	421.932	7.438	.014 ^b
	Residual	1021.018	18	56.723		
	Total	1442.950	19			

a. Dependent Variable: x

b. Predictors: (Constant), y

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	38.906	7.933	.541	4.904	.000
	y	.381	.140			

a. Dependent Variable: x

Casewise Diagnostics^a

Case Number	no	Std. Residual	x	Predicted Value	Residual
1	1	-.797	47	53.00	-6.002
2	2	.904	72	65.19	6.807
3	3	-.873	59	65.57	-6.574
4	4	-.297	50	52.24	-2.240
5	5	-.791	60	65.96	-5.955
6	6	.486	70	66.34	3.664
7	7	-.550	50	54.14	-4.145
8	8	1.441	65	54.14	10.855
9	9	-1.486	54	65.19	-11.193
10	10	-1.037	57	64.81	-7.812
11	11	-.449	50	53.38	-3.383
12	12	1.561	72	60.24	11.760
13	13	.980	68	60.62	7.379
14	14	.265	63	61.00	1.998
15	15	.019	60	59.86	.140
16	16	-.297	58	60.24	-2.240
17	17	.980	68	60.62	7.379
18	18	1.523	74	62.53	11.474
19	19	-.127	57	57.95	-.955
20	20	-1.455	47	57.95	-10.955

a. Dependent Variable: x

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	52.24	66.34	60.05	4.712	20
Std. Predicted Value	-1.657	1.334	.000	1.000	20
Standard Error of Predicted Value	1.686	3.322	2.318	.561	20
Adjusted Predicted Value	52.48	66.87	60.18	4.767	20
Residual	-11.193	11.760	.000	7.331	20
Std. Residual	-1.486	1.561	.000	.973	20
Stud. Residual	-1.578	1.602	-.008	1.022	20
Deleted Residual	-12.615	12.515	-.129	8.085	20
Stud. Deleted Residual	-1.652	1.681	-.002	1.049	20
Mahal. Distance	.002	2.747	.950	.888	20
Cook's Distance	.000	.183	.052	.050	20
Centered Leverage Value	.000	.145	.050	.047	20

a. Dependent Variable: x

Charts

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: x

