

POST TEST LAB 3

INTRODUCTION TO ECONOMETRICS 2022

FAKULTAS EKONOMI DAN BISNIS – UNIVERSITAS PADJADJARAN

PENYUSUN : TEACHING ASSISTANT OF ECONOMETRICS 2022
PRAKTIKUM 3 : Scatter Plot, Covariance, Correlation, Fitted Value, Residual & SLR
DATA : gpa1.dta & hprice1.dta
NAMA : Hisbi Asyihristani R
NPM : 120610210018

SLR

Ubah direktori ke folder kerja Anda. Buatlah global dan log-file dengan nama “nama_posttestlab3” dan gunakan data gpa1.dta dari boston college!

1. Berapa nilai rata-rata dari variabel ACT serta berapa nilai minimum dan maksimum dari variabel colGPA (10%)

Stata/MP 16.0 - http://fmwww.bc.edu/ec-p/data/wooldridge/gpa1.dta

File Edit Data Graphics Statistics User Window Help

History

Filter commands here

1 do "C:\Users\hisbi\AppData\Local\Temp\STD3514_000000.tmp"

2 do "C:\Users\hisbi\AppData\Local\Temp\STD3514_000000.tmp"

3 do "C:\Users\hisbi\AppData\Local\Temp\STD3514_000000.tmp"

4 do "C:\Users\hisbi\AppData\Local\Temp\STD3514_000000.tmp"

5 do "C:\Users\hisbi\AppData\Local\Temp\STD3514_000000.tmp"

6 do "C:\Users\hisbi\AppData\Local\Temp\STD3514_000000.tmp"

7 do "C:\Users\hisbi\AppData\Local\Temp\STD3514_000000.tmp"

Command

S

log on (smcl)

Variables

Filter variables here

Name

age

soph

junior

senior

senior3

male

campus

business

engineer

colGPA

Properties

Variables

Name

Label

Type

Format

Value label

Notes

Data

Frame

Filename

Label

Notes

Variables

Observations

Size

Memory

Line 19, Col 11 CAP NUM OVR

Untitled.do

17

18 sum ACT

19 sum colGPA

20

21 //2. Lakukan regresi sederhana dari ACT terhadap GPA perkuliahan (colGPA) dan tuliskan formal reportnya

22

23 //3. Interpretasikan R-Squared dan variabel ACT!

sum ACT
sum colGPA

Nilai rata-rata variabel ACT : 24.15603
Nilai Maksimum colGPA : 4
Nilai Minimum colGPA : 2.2

- Lakukan regresi sederhana dari ACT terhadap GPA perkuliahan (colGPA) dan tuliskan formal reportnya (20%)

end of do-file

```
. do "C:\Users\hisbi\AppData\Local\Temp\STD3514_000000.tmp"
```

```
. reg colGPA ACT
```

Source	SS	df	MS	Number of obs	=	141
Model	.829558811	1	.829558811	F(1, 139)	=	6.21
Residual	18.5765406	139	.133644177	Prob > F	=	0.0139
Total	19.4060994	140	.138614996	R-squared	=	0.0427
				Adj R-squared	=	0.0359
				Root MSE	=	.36557

colGPA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
ACT	.027064	.0108628	2.49	0.014	.0055862 .0485417
_cons	2.402979	.2642027	9.10	0.000	1.880604 2.925355

```
.
*SLR
//1. Berapa nilai rata-rata dari variabel ACT serta berapa nilai minimum dan maksimum dari variabel colGPA
sum ACT
sum colGPA
//2. Lakukan regresi sederhana dari ACT terhadap GPA perkuliahan (colGPA) dan tuliskan formal reportnya
reg colGPA ACT
//3. Interpretasikan R-Squared dan variabel ACT!
```

Formal Report

colGPA : $\alpha + \beta \text{ ACT}_i + \omega$
colGPA : $2.402979 + 0.027064 \text{ ACT}_i$
stderror : $0.2642027 + 0.0108628$
t ratio : $(9.10)(2.49)$
P-Value : $(0.000)(0.014)$
 R^2 : 0.0427

- Interpretasikan R-Squared dan variabel ACT! (satuan skor ACT: poin) (20%)

Interpretasi

R^2 : **0.0427**

Variasi dari variabel ACT mampu menjelaskan variasi dari variabel colGPA sebesar 4.27%, sementara sisanya sebesar 95.37% oleh variabel-variabel lain diluar model tersebut

ACT : 0.027064

Apabila terdapat 2 individu dengan karakter fisik yang sama, namun salah satu individu memiliki ACT (lama jabatan) yang lebih tinggi 1 dibandingkan yang lain, maka individu tersebut memiliki colGPA lebih tinggi rata-rata sebesar 0.027064 dibandingkan dengan individu lainnya 'ceteris paribus'

MLR

4. Gunakan data HPRICE1.dta dari boston college! (10%)

clear

bcuse HPRICE1.dta

The screenshot shows the Stata 16.0 interface. The top menu bar includes File, Edit, Data, Graphics, Statistics, User, Window, and Help. The History window on the left shows a list of commands. The main window displays the command 'bcuse http://fmwww.bc.edu/ec-p/data/wooldridge/hprice1.dta' and its output, which includes the number of observations (88) and variables (10). Below this, a table lists the variables and their properties.

variable name	storage type	display format	value label
price	float	%9.0g	house price, \$1000s
assess	float	%9.0g	assessed value, \$1000s
bdrms	byte	%9.0g	number of bdrms
lotsize	float	%9.0g	size of lot in square feet
sqrf	int	%9.0g	size of house in square feet
colonial	byte	%9.0g	=1 if home is colonial style
lprice	float	%9.0g	log(price)
lassess	float	%9.0g	log(assess)
llotsize	float	%9.0g	log(lotsize)
lsqrf	float	%9.0g	log(sqrf)

The bottom window shows the command 'reg colGPA ACT' and its output, which includes the R-squared value (0.0427) and the ACT variable label (0.027064). The command window also shows the command 'mlr' and its output, which includes the command 'bcuse hprice1.dta'.

5. Lakukan regresi variabel jumlah kamar, *assessed value*, ukuran tanah, dan ukuran rumah terhadap harga rumah. Tuliskan formal reportnya dan interpretasikan variabel konstanta dan jumlah kamar! (20%)

Stata MP 16.0 - http://www.bcs.edu/ec-p/data/wooldridge/hprice1.dta

File Edit Data Graphics Statistics User Window Help

History Filter commands here

Command

1 do "C:\Users\hsibi\AppData...
2 do "C:\Users\hsibi\AppData... 111
3 do "C:\Users\hsibi\AppData... 111
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5 do "C:\Users\hsibi\AppData...
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8 do "C:\Users\hsibi\AppData...
9 do "C:\Users\hsibi\AppData...
10 do "C:\Users\hsibi\AppData... 198
11 do "C:\Users\hsibi\AppData... 604
12 do "C:\Users\hsibi\AppData... 604
13 do "C:\Users\hsibi\AppData...
14 do "C:\Users\hsibi\AppData... 198
15 do "C:\Users\hsibi\AppData... 198
16 do "C:\Users\hsibi\AppData...
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18 do "C:\Users\hsibi\AppData...
19 do "C:\Users\hsibi\AppData...
20 do "C:\Users\hsibi\AppData..."

. reg price bdrms assess lotsize sqrft

Source	SS	df	MS	Number of obs	=	88
Model	761089.801	4	190272.45	F(4, 83)	=	100.74
Residual	156764.704	83	1888.73138	Prob > F	=	0.0000
Total	917854.506	87	10550.0518	R-squared	=	0.8292
				Adj R-squared	=	0.8210
				Root MSE	=	43.46

	price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
bdrms		11.60249	6.549515	1.77	0.080	-1.424233 24.62921
assess		.9082991	.1040386	8.73	0.000	.7013706 1.115228
lotsize		.0005867	.0004963	1.18	0.240	-.0004004 .0015738
sqrft		-.0005175	.0170849	-0.03	0.976	-.0344986 .0334636
_cons		-38.88702	21.49853	-1.81	0.074	-81.64673 3.872696

Do-file Editor - Untitled.do*

File Edit View Language Project Tools

Untitled.do* x

```

22 reg colGPA ACT
23
24 //3. Interpretasikan R-Squared dan variabel ACT!
25 * R^2 : 0.0427
26 * Variasi dari variabel ACT mampu menjelaskan variasi dari variabel colGPA sebesar 4.27%, sementara sisanya sebesar 95.37% oleh
27 variabel-variabel lain diluar model tersebut
28
29 * ACT : 0.027064
30 * Apabila terdapat 2 individu dengan karakter fisik yang sama, namun salah satu individu memiliki ACT (lama jabatan) yang lebih tinggi
31 1 dibandingkan yang lain, maka individu tersebut memiliki colGPA lebih tinggi rata-rata sebesar 0.027064 dibandingkan dengan individu
32 lainnya 'ceteris paribus'
33
34 *MLR
35 //4. Gunakan data HPRICE1.dta dari boston college!
36 clear
37 bcuse hprice1.dta
38
39 //5. regresi variabel jumlah kamar, assessed value, ukuran tanah, dan ukuran rumah terhadap harga rumah
40 reg price bdrms assess lotsize sqrft

```

Line: 32, Col: 51 CAP NUM OVR

reg price bdrms assess lotsize sqrft

Formal Report

price : $\alpha_0 + \beta_{bdrms} + \beta_{assess} + \beta_{lotsize} + \beta_{sqrft} + u$

price: -38.88702+ 11.60249 + 0.9082991 +0.0005867+ (-0.0005175)

stderror : (21.49853)(6.549515)(0.1040386)(0.0004963)(0.0170849)

t-ratio : (-1.81)(1.77)(8.73)(1.18)(-0.03)

p-value : (0.074)(0.080)(0.000)(0.240)(0.976)

R^2 : 0.8292

6. Interpretasikan nilai R-squared! (20%)

$R^2 = 0.8292$, variasi dari variable bdrms asses lotsize sqrft mampu menjelaskan variasi dari variabel price sebesar 82.92% dan sisanya 17.08% dijelaskan oleh variabel lain di luar model