Statistics/Data Analysis

name: **<unnamed>**
log: **C:\Users\Baha\OneDrive\Desktop\Stata\Lof files\Regression.smcl**
log type: **smcl**
opened on: **29 Nov 2023, 21:57:06**

1 . summarize, detail

A1

Percentiles		Smallest		
1%	48	47.2		
5%	57.8	48.8		
10%	70.4	54	Obs	100
25%	91.7	54.2	Sum of Wgt.	100
50%	106.2		Mean	107.75
		Largest	Std. Dev.	27.85768
75%	125.2	162.2		
90%	145.6	163.6	Variance	776.0504
95%	153.2	184.2	Skewness	.2283053
99%	184.6	185	Kurtosis	3.223777

A2

Percentiles		Smallest		
1%	25	22		
5%	31	28		
10%	35	29	Obs	100
25%	42.5	30	Sum of Wgt.	100
50%	50.5		Mean	52.44
		Largest	Std. Dev.	14.0528
75%	62	82		
90%	70	82	Variance	197.4812
95%	76.5	86	Skewness	.5000753
99%	92.5	99	Kurtosis	3.277941

A3

Percentiles		Smallest		
1%	3.58	3.58		
5%	3.85	3.58		
10%	3.9	3.74	Obs	100
25%	4.19	3.83	Sum of Wgt.	100
50%	4.49		Mean	4.5226
		Largest	Std. Dev.	.4711637
75%	4.855	5.38		
90%	5.11	5.43	Variance	.2219952
95%	5.3	5.57	Skewness	.407158
99%	5.84	6.11	Kurtosis	3.178499

A4

Percentiles		Smallest		
1%	29.985	29.53		
5%	30.7	30.44		
10%	31.05	30.54	Obs	100
25%	31.7	30.54	Sum of Wgt.	100
50%	32.3		Mean	32.257
		Largest	Std. Dev.	.8970732
75%	32.85	33.84		
90%	33.29	33.91	Variance	.8047404
95%	33.805	34.16	Skewness	-.1744164
99%	34.465	34.77	Kurtosis	3.367012

```
2 . summarize, detail
```

A1

	Percentiles	Smallest		
1%	**48**	**47.2**		
5%	**57.8**	**48.8**		
10%	**70.4**	**54**	Obs	**100**
25%	**91.7**	**54.2**	Sum of Wgt.	**100**
50%	**106.2**		Mean	**107.75**
		Largest	Std. Dev.	**27.85768**
75%	**125.2**	**162.2**		
90%	**145.6**	**163.6**	Variance	**776.0504**
95%	**153.2**	**184.2**	Skewness	**.2283053**
99%	**184.6**	**185**	Kurtosis	**3.223777**

A2

	Percentiles	Smallest		
1%	**25**	**22**		
5%	**31**	**28**		
10%	**35**	**29**	Obs	**100**
25%	**42.5**	**30**	Sum of Wgt.	**100**
50%	**50.5**		Mean	**52.44**
		Largest	Std. Dev.	**14.0528**
75%	**62**	**82**		
90%	**70**	**82**	Variance	**197.4812**
95%	**76.5**	**86**	Skewness	**.5000753**
99%	**92.5**	**99**	Kurtosis	**3.277941**

A3

	Percentiles	Smallest		
1%	**3.58**	**3.58**		
5%	**3.85**	**3.58**		
10%	**3.9**	**3.74**	Obs	**100**
25%	**4.19**	**3.83**	Sum of Wgt.	**100**
50%	**4.49**		Mean	**4.5226**
		Largest	Std. Dev.	**.4711637**
75%	**4.855**	**5.38**		
90%	**5.11**	**5.43**	Variance	**.2219952**
95%	**5.3**	**5.57**	Skewness	**.407158**
99%	**5.84**	**6.11**	Kurtosis	**3.178499**

A4

	Percentiles	Smallest		
1%	**29.985**	**29.53**		
5%	**30.7**	**30.44**		
10%	**31.05**	**30.54**	Obs	**100**
25%	**31.7**	**30.54**	Sum of Wgt.	**100**
50%	**32.3**		Mean	**32.257**
		Largest	Std. Dev.	**.8970732**
75%	**32.85**	**33.84**		
90%	**33.29**	**33.91**	Variance	**.8047404**
95%	**33.805**	**34.16**	Skewness	**-.1744164**
99%	**34.465**	**34.77**	Kurtosis	**3.367012**

```
3 . histogram A1, bin(10) normal
  (bin=10, start=47.2, width=13.78)
```

```
4 . regress A1 A2 A3 A4
```

Source	SS	df	MS		
Model	4417.49752	3	1472.49917	Number of obs	= 100
Residual	72411.4925	96	754.28638	F(3, 96)	= 1.95
				Prob > F	= 0.1264
Total	76828.99	99	776.050404	R-squared	= 0.0575
				Adj R-squared	= 0.0280
				Root MSE	= 27.464

A1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
A2	-.1816692	.2048578	-0.89	0.377	-.5883087	.2249702
A3	8.565666	6.502293	1.32	0.191	-4.341283	21.47262
A4	2.891518	3.302254	0.88	0.383	-3.663404	9.446441
_cons	-14.73406	102.0254	-0.14	0.885	-217.253	187.7849

```
5 . regress A1 A2
```

Source	SS	df	MS		
Model	1602.09239	1	1602.09239	Number of obs	= 100
Residual	75226.8976	98	767.621404	F(1, 98)	= 2.09
				Prob > F	= 0.1517
Total	76828.99	99	776.050404	R-squared	= 0.0209
				Adj R-squared	= 0.0109
				Root MSE	= 27.706

A1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
A2	-.2862617	.1981495	-1.44	0.152	-.679483	.1069596
_cons	122.7616	10.75399	11.42	0.000	101.4206	144.1025

```
6 . regress A1 A3
```

Source	SS	df	MS		
Model	3213.49471	1	3213.49471	Number of obs	= 100
Residual	73615.4953	98	751.178523	F(1, 98)	= 4.28
				Prob > F	= 0.0412
Total	76828.99	99	776.050404	R-squared	= 0.0418
				Adj R-squared	= 0.0320
				Root MSE	= 27.408

A1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
A3	12.09204	5.846315	2.07	0.041	.4902139	23.69386
_cons	53.06256	26.58221	2.00	0.049	.3110208	105.8141

```
7 . regress A1 A4
```

Source	SS	df	MS		
Model	1898.06542	1	1898.06542	Number of obs	= 100
Residual	74930.9246	98	764.601271	F(1, 98)	= 2.48
				Prob > F	= 0.1183
Total	76828.99	99	776.050404	R-squared	= 0.0247
				Adj R-squared	= 0.0148
				Root MSE	= 27.651

A1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
A4	4.881014	3.097933	1.58	0.118	-1.266733	11.02876
_cons	-49.69688	99.96827	-0.50	0.620	-248.0807	148.6869

8 . regress A4 A1 A2 A3

Source	SS	df	MS		
Model	**11.047749**	**3**	**3.68258301**	Number of obs	= **100**
Residual	**68.621551**	**96**	**.714807823**	F(3, 96)	= **5.15**
				Prob > F	= **0.0024**
Total	**79.6693**	**99**	**.804740404**	R-squared	= **0.1387**
				Adj R-squared	= **0.1118**
				Root MSE	= **.84546**

A4	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
A1	**.0027402**	**.0031294**	**0.88**	**0.383**	**-.0034717**	**.008952**
A2	**-.0011633**	**.006331**	**-0.18**	**0.855**	**-.0137303**	**.0114037**
A3	**.6465829**	**.190883**	**3.39**	**0.001**	**.2676831**	**1.025483**
_cons	**29.09851**	**1.022982**	**28.44**	**0.000**	**27.06791**	**31.12912**

9 . ttest A4 == 15

One-sample t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
A4	**100**	**32.257**	**.0897073**	**.8970732**	**32.079**	**32.435**

mean = mean(**A4**) t = **192.3700**
Ho: mean = **15** degrees of freedom = **99**

Ha: mean < **15** Ha: mean != **15** Ha: mean > **15**
Pr(T < t) = **1.0000** Pr(|T| > |t|) = **0.0000** Pr(T > t) = **0.0000**

10. ttest A2 == A4, unpaired unequal welch

Two-sample t test with unequal variances

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
A2	**100**	**52.44**	**1.40528**	**14.0528**	**49.65162**	**55.22838**
A4	**100**	**32.257**	**.0897073**	**.8970732**	**32.079**	**32.435**
combined	**200**	**42.3485**	**1.002484**	**14.17727**	**40.37164**	**44.32536**
diff		**20.183**	**1.40814**		**17.38923**	**22.97677**

diff = mean(**A2**) - mean(**A4**) t = **14.3331**
Ho: diff = 0 Welch's degrees of freedom = **99.8231**

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = **1.0000** Pr(|T| > |t|) = **0.0000** Pr(T > t) = **0.0000**

11. ttest A1 == A4, unpaired

Two-sample t test with equal variances

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
A1	**100**	**107.75**	**2.785768**	**27.85768**	**102.2224**	**113.2776**
A4	**100**	**32.257**	**.0897073**	**.8970732**	**32.079**	**32.435**
combined	**200**	**70.0035**	**3.015322**	**42.6431**	**64.05742**	**75.94958**
diff		**75.493**	**2.787212**		**69.99657**	**80.98943**

diff = mean(**A1**) - mean(**A4**) t = **27.0855**
Ho: diff = 0 degrees of freedom = **198**

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = **1.0000** Pr(|T| > |t|) = **0.0000** Pr(T > t) = **0.0000**

12. ttest A3 == A4

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
A3	**100**	**4.5226**	**.0471164**	**.4711637**	**4.429111**	**4.616089**
A4	**100**	**32.257**	**.0897073**	**.8970732**	**32.079**	**32.435**
diff	**100**	**-27.7344**	**.0848876**	**.848876**	**-27.90284**	**-27.56596**

mean(diff) = mean(**A3** - **A4**) t = **-3.3e+02**
Ho: mean(diff) = 0 degrees of freedom = **99**

Ha: mean(diff) < 0 Ha: mean(diff) != 0 Ha: mean(diff) > 0
Pr(T < t) = **0.0000** Pr(|T| > |t|) = **0.0000** Pr(T > t) = **1.0000**

13. rvpplot A4, ytitle(residuals) xtitle(predictors)
A4 is not in the model
r(398);

14. log close
name: **<unnamed>**
log: **C:\Users\Baha\OneDrive\Desktop\Stata\Lof files\Regression.smcl**
log type: **smcl**
closed on: **29 Nov 2023, 22:45:51**