Notes:
1. Unicode is supported; see help unicode_advice.
2. More than 2 billion observations are allowed; see help obs_advice.
3. Maximum number of variables is set to 30,000 but can be increased; see help set_maxvar.

Running D:\stata18\profile.do ...

```
1 . import delimited "C:\Users\Administrator\Desktop\marketing_sales_data.csv", clear
(encoding automatically selected: ISO-8859-2)
(5 vars, 572 obs)

2 . describe

Contains data
 Observations:           572
    Variables:             5
```

Variable name	Storage type	Display format	Value label	Variable label
tv	str6	%9s		**TV**
radio	double	%10.0g		**Radio**
socialmedia	double	%10.0g		**Social Media**
influencer	str5	%9s		**Influencer**
sales	double	%10.0g		**Sales**

Sorted by:
Note: **Dataset has changed since last saved.**

```
3 . summarize
```

Variable	Obs	Mean	Std. dev.	Min	Max
tv	**0**				
radio	**571**	**18.64647**	**9.65074**	**.1945765**	**48.87116**
socialmedia	**572**	**3.248471**	**2.195696**	**.0132301**	**11.26043**
influencer	**0**				
sales	**571**	**193.5169**	**90.51615**	**31.19941**	**358.4207**

```
4 . list in 1/10
```

	tv	radio	socialm~a	influe~r	sales
1.	**Low**	**1.2183539**	**1.2704439**	**Micro**	**90.054222**
2.	**Medium**	**14.949791**	**.27445075**	**Macro**	**222.74167**
3.	**Low**	**10.377258**	**.06198388**	**Mega**	**102.77479**
4.	**High**	**26.469274**	**7.0709451**	**Micro**	**328.23938**
5.	**High**	**36.876302**	**7.6186051**	**Mega**	**351.80733**
6.	**High**	**25.56191**	**5.4597181**	**Micro**	**261.96681**
7.	**High**	**37.263819**	**6.8865348**	**Nano**	**349.86158**
8.	**Low**	**13.187256**	**2.7663523**	**Macro**	**140.41529**
9.	**High**	**29.52017**	**2.3331574**	**Nano**	**264.59223**
10.	**Low**	**3.7732868**	**.1350743**	**Nano**	**55.674214**

```
 5 . graph matrix radio socialmedia sales, half

 6 . regress sales radio
```

Source	SS	df	MS	Number of obs	=	570
				F(1, 568)	=	1781.33
Model	3530880.56	1	3530880.56	Prob > F	=	0.0000
Residual	1125868.35	568	1982.16258	R-squared	=	0.7582
				Adj R-squared	=	0.7578
Total	4656748.91	569	8184.09299	Root MSE	=	44.521

sales	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
radio	8.179911	.1938102	42.21	0.000	7.799239	8.560583
_cons	41.44879	4.061259	10.21	0.000	33.47187	49.42571

```
 7 . scatter sales radio

 8 . twoway (scatter sales radio)

 9 . estimates store radio_sales_model

10 . predict residuals, residuals
   (2 missing values generated)

11 . local b0 = _b[_cons]

12 . local b1 = _b[radio]

13 . local equation "sales = `b0' + `b1' * radio"

14 . display "`equation'"
   sales = 41.44879257996345 + 8.17991101982137 * radio

15 . estimates table radio_sales_model, stats(N r2 r2_a rmse)
```

Variable	radio_sa~l
radio	8.179911
_cons	41.448793
N	570
r2	.75822868
r2_a	.75780302
rmse	44.521484

```
16 . estat hettest

   Breusch-Pagan/Cook-Weisberg test for heteroskedasticity
   Assumption: Normal error terms
   Variable: Fitted values of sales

   H0: Constant variance

       chi2(1) =   0.10
   Prob > chi2 = 0.7531
```

```
17 . estat imtest, white

   White's test
   H0: Homoskedasticity
   Ha: Unrestricted heteroskedasticity

       chi2(2) =  13.35
   Prob > chi2 = 0.0013

   Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	**13.35**	**2**	**0.0013**
Skewness	**3.61**	**1**	**0.0574**
Kurtosis	**2.32**	**1**	**0.1277**
Total	**19.29**	**4**	**0.0007**

```
18 . estat vif
```

Variable	VIF	1/VIF
radio	**1.00**	**1.000000**
Mean VIF	**1.00**	

```
19 . estat summarize

   Estimation sample regress                 Number of obs =        570
```

Variable	Mean	Std. dev.	Min	Max
sales	**193.7195**	**90.46598**	**31.19941**	**358.4207**
radio	**18.61521**	**9.630233**	**.1945765**	**48.87116**

```
20 . estimates table radio_sales_model, stats(N r2 r2_a rmse F p)
```

Variable	radio_sa~l
radio	**8.179911**
_cons	**41.448793**
N	**570**
r2	**.75822868**
r2_a	**.75780302**
rmse	**44.521484**
F	**1781.3274**
p	

```
21 . estat ic

   Akaike's information criterion and Bayesian information criterion
```

Model	N	ll(null)	ll(model)	df	AIC	BIC
radio_sale~l	**570**	**-3376.13**	**-2971.497**	**2**	**5946.994**	**5955.686**

```
   Note: BIC uses N = number of observations. See [R] IC note.
```

```
22 . predict sales_hat
   (option xb assumed; fitted values)
   (1 missing value generated)

23 .
24 . summarize sales sales_hat
```

Variable	Obs	Mean	Std. dev.	Min	Max
sales	571	193.5169	90.51615	31.19941	358.4207
sales_hat	571	193.9753	78.9422	43.04041	441.2105

```
25 . predict residuals, residuals
   variable residuals already defined
   r(110);

26 .
27 . summarize residuals, detail
```

Residuals

Percentiles		Smallest		
1%	-110.2862	-131.2926		
5%	-76.25852	-128.8093		
10%	-56.14853	-123.5515	Obs	570
25%	-29.18037	-113.121	Sum of wgt.	570
50%	-1.131607		Mean	8.45e-15
		Largest	Std. dev.	44.48234
75%	31.35939	98.99744		
90%	58.18956	104.8795	Variance	1978.679
95%	73.60717	111.7483	Skewness	-.1046331
99%	95.78555	118.917	Kurtosis	2.775589

```
28 . generate abs_error = abs(residuals)
   (2 missing values generated)

29 .
30 . summarize abs_error
```

Variable	Obs	Mean	Std. dev.	Min	Max
abs_error	570	35.63068	26.58763	.2110983	131.2926

```
31 . generate squared_error = residuals^2
   (2 missing values generated)

32 .
33 . summarize squared_error
```

Variable	Obs	Mean	Std. dev.	Min	Max
squared_er~r	570	1975.208	2634.3	.0445625	17237.74

```
34 .
```