```
Python 3.8.8 (default, Apr 13 2021, 15:08:03) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.22.0 -- An enhanced Interactive Python.

Restarting kernel...
```

In [**1**]:   0   *'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'*
6.9748214882298925
[0.05546477]
9.748059988229892
[7.01364683 23.41457946]
Traceback (most recent call last):

  File "C:\Users\BHARGAV BHAT\Desktop\CODE FILES\Project - 1\untitled0.py", line 56, in
<module>
    lm=smf.ols(formula='Sales ~ TV',d=d).fit()

TypeError: from_formula() missing 1 required positional argument: 'data'

In [**2**]:   0   *'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'*
6.9748214882298925
[0.05546477]
9.748059988229892
[7.01364683 23.41457946]
Traceback (most recent call last):

  File "C:\Users\BHARGAV BHAT\Desktop\CODE FILES\Project - 1\untitled0.py", line 56, in
<module>
    lm=smf.ols(formula='Sales ~ TV',d=d).fit()

TypeError: from_formula() missing 1 required positional argument: 'data'

In [**3**]:   0   *'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'*
6.9748214882298925
[0.05546477]
9.748059988229892
[7.01364683 23.41457946]

In [**4**]:   0   *'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'*
6.9748214882298925
[0.05546477]
9.748059988229892
[7.01364683 23.41457946]

In [**5**]:   0   *'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'*
6.9748214882298925
[0.05546477]
9.748059988229892
[7.01364683 23.41457946]

In [**6**]:   0   *'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'*
6.9748214882298925
[0.05546477]

```
9.748059988229892
[ 7.01364683 23.41457946]
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64
Traceback (most recent call last):

  File "C:\Users\BHARGAV BHAT\Desktop\CODE FILES\Project - 1\untitled0.py", line 64, in
<module>
    print(lm.rsqured)

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\statsmodels\base\wrapper.py",
line 34, in __getattribute__
    obj = getattr(results, attr)

AttributeError: 'OLSResults' object has no attribute 'rsqured'


In [7]:          0  'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'
6.9748214882298925
[0.05546477]
9.748059988229892
[ 7.01364683 23.41457946]
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64
0.8121757029987414


In [8]:          0  'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'
6.9748214882298925
[0.05546477]
9.748059988229892
[ 7.01364683 23.41457946]
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64
0.8121757029987414


In [9]:          0  'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/untitled0.py'
6.9748214882298925
[0.05546477]
9.748059988229892
[ 7.01364683 23.41457946]
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64
0.8121757029987414


In [10]:          0  'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/
untitled0.py'
6.9748214882298925
[0.05546477]
9.748059988229892
[ 7.01364683 23.41457946]
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64
0.8121757029987414
4.625124078808655
```

```
[0.05444578 0.10700123 0.00033566]
```

```
6.9748214882298925
[0.05546477]
9.748059988229892
[ 7.01364683 23.41457946]
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64
0.8121757029987414
4.625124078808655
[0.05444578 0.10700123 0.00033566]
Traceback (most recent call last):

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\compat.py", line 36, in
call_and_wrap_exc
    return f(*args, **kwargs)

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\eval.py", line 165, in
eval
    return eval(code, {}, VarLookupDict([inner_namespace]

  File "<string>", line 1, in <module>

NameError: name 'Tv' is not defined


The above exception was the direct cause of the following exception:

Traceback (most recent call last):

  File "C:\Users\BHARGAV BHAT\Desktop\CODE FILES\Project - 1\untitled0.py", line 80, in
<module>
    lm=smf.ols(formula='Sales ~ Tv+Radio+Newspaper',data=data).fit()

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\statsmodels\base\model.py",
line 169, in from_formula
    tmp = handle_formula_data(data, None, formula, depth=eval_env,

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\statsmodels\formula
\formulatools.py", line 63, in handle_formula_data
    result = dmatrices(formula, Y, depth, return_type='dataframe',

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\highlevel.py", line
309, in dmatrices
    (lhs, rhs) = _do_highlevel_design(formula_like, data, eval_env,

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\highlevel.py", line
164, in _do_highlevel_design
    design_infos = _try_incr_builders(formula_like, data_iter_maker, eval_env,

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\highlevel.py", line 66,
in _try_incr_builders
    return design_matrix_builders([formula_like.lhs_termlist,

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\build.py", line 693, in
design_matrix_builders
```

```
    cat_levels_contrasts) = _examine_factor_types(all_factors,

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\build.py", line 443, in
_examine_factor_types
    value = factor.eval(factor_states[factor], data)

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\eval.py", line 564, in
eval
    return self._eval(memorize_state["eval_code"],

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\eval.py", line 547, in
_eval
    return call_and_wrap_exc("Error evaluating factor",

  File "C:\Users\BHARGAV BHAT\anaconda3\lib\site-packages\patsy\compat.py", line 43, in
call_and_wrap_exc
    exec("raise new_exc from e")

  File "<string>", line 1, in <module>

PatsyError: Error evaluating factor: NameError: name 'Tv' is not defined
    Sales ~ Tv+Radio+Newspaper
            ^^
```

In [12]:   0 'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/
untitled0.py'
```
6.9748214882298925
[0.05546477]
9.748059988229892
[ 7.01364683 23.41457946]
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64
0.8121757029987414
4.625124078808655
[0.05444578 0.10700123 0.00033566]
```

In [13]:   0 'C:/Users/BHARGAV BHAT/Desktop/CODE FILES/Project - 1/
untitled0.py'
```
6.9748214882298925
[0.05546477]
9.748059988229892
[ 7.01364683 23.41457946]
Intercept    5.027719e-54
TV           7.927912e-74
dtype: float64
0.8121757029987414
4.625124078808655
[0.05444578 0.10700123 0.00033566]
                          OLS Regression Results
===============================================================================
Dep. Variable:               Sales   R-squared:                       0.903
Model:                         OLS   Adj. R-squared:                  0.901
Method:              Least Squares   F-statistic:                     605.4
Date:             Fri, 10 Sep 2021   Prob (F-statistic):           8.13e-99
Time:                     21:39:05   Log-Likelihood:                -383.34
No. Observations:              200   AIC:                             774.7
Df Residuals:                  196   BIC:                             787.9
```

```
Df Model:                        3
Covariance Type:           nonrobust
===============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
-------------------------------------------------------------------------------
Intercept      4.6251      0.308     15.041      0.000       4.019       5.232
TV             0.0544      0.001     39.592      0.000       0.052       0.057
Radio          0.1070      0.008     12.604      0.000       0.090       0.124
Newspaper      0.0003      0.006      0.058      0.954      -0.011       0.012
===============================================================================
Omnibus:                      16.081   Durbin-Watson:                   2.251
Prob(Omnibus):                 0.000   Jarque-Bera (JB):               27.655
Skew:                         -0.431   Prob(JB):                     9.88e-07
Kurtosis:                      4.605   Cond. No.                        454.
===============================================================================

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly
specified.
```

In [**14**]: