BokehJS 2.4.2 successfully loaded.

```
"\noutput_figure = widgets.Output()\n \n# Create the default figure\nfig = []  # Storing the figur
e in a singular list is a bit of a \n          # hack. We need it to properly mutate the current\n
# figure in our callbacks.\n#p = create_figure(\n#    iris['feature_names'][0],\n#    iris['featur
e_names'][1],\n#    data)\n#fig.append(p)\nwith output_figure:\n    interact(derive_xnames,y=y)\n
#interact(return_model_vars,x=x_,y=y,autoremove=autoremove)\n    #show(fig)\n    \napp_layout = wi
dgets.Layout(display='flex',\n                flex_flow='row nowrap',\n                align_items
='center',\n                border='none',\n                width='100%',\n                margin
='5px 5px 5px 5px')\n \n# The final app is just a box\napp=widgets.Box([y, output_figure], layout=
app_layout)\n \n# Display the app\ndisplay(app)\n"
```

y
- Traf Deaths
- University
- Unemployed
- Income
- Population

x
- Traf Deaths
- University
- Unemployed
- Population
- const

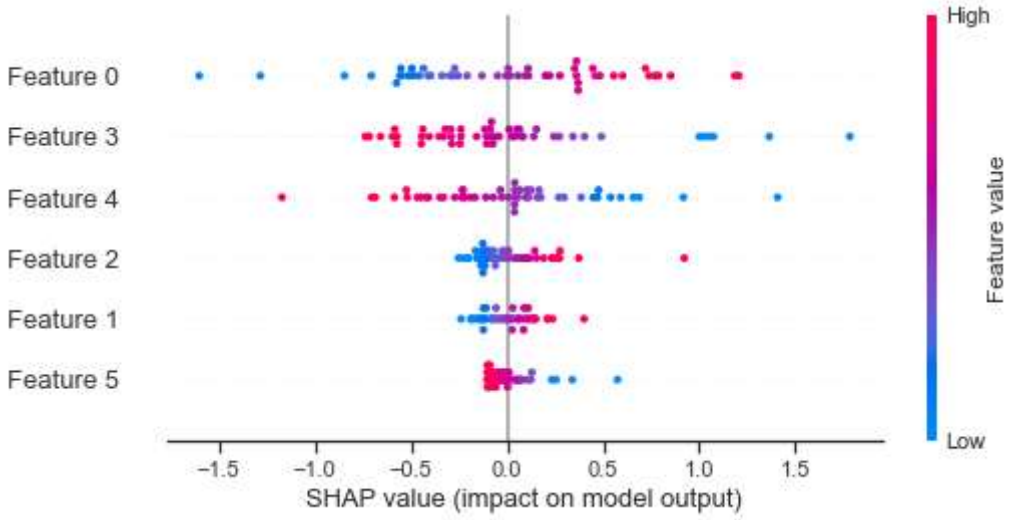
y: Income

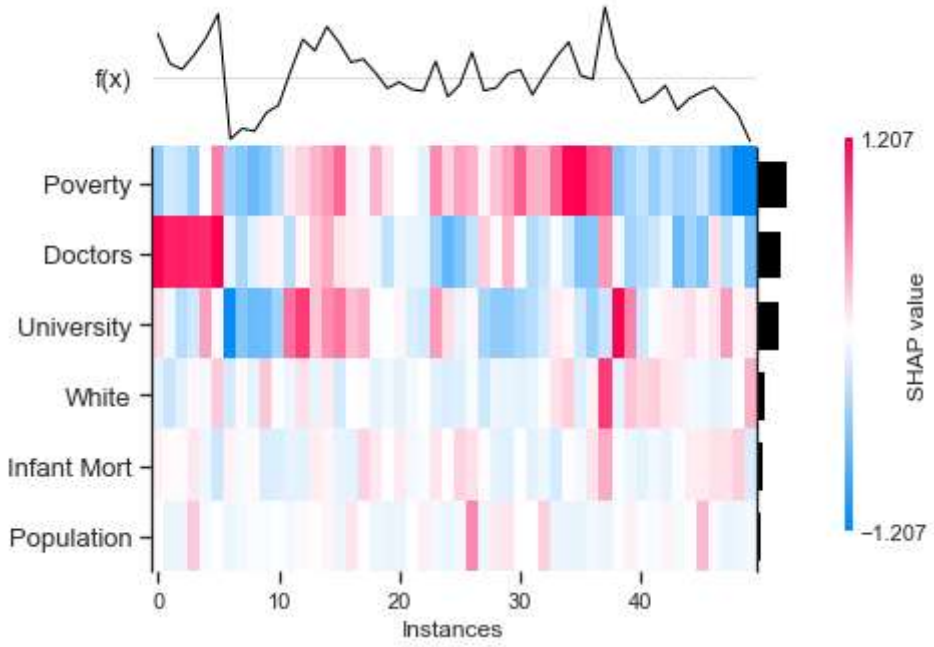
autoremove

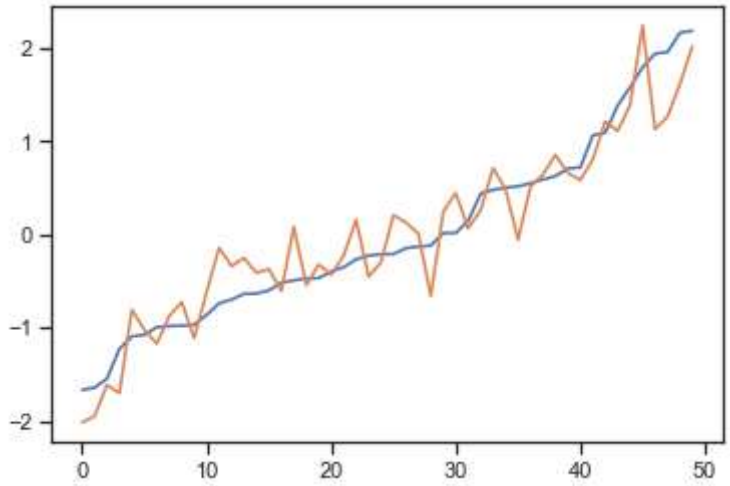
```
['Income', 'Poverty', 'Infant Mort', 'White', 'Crime', 'Doctors', 'Traf Deaths', 'University',
'Unemployed', 'Population', 'const']
```

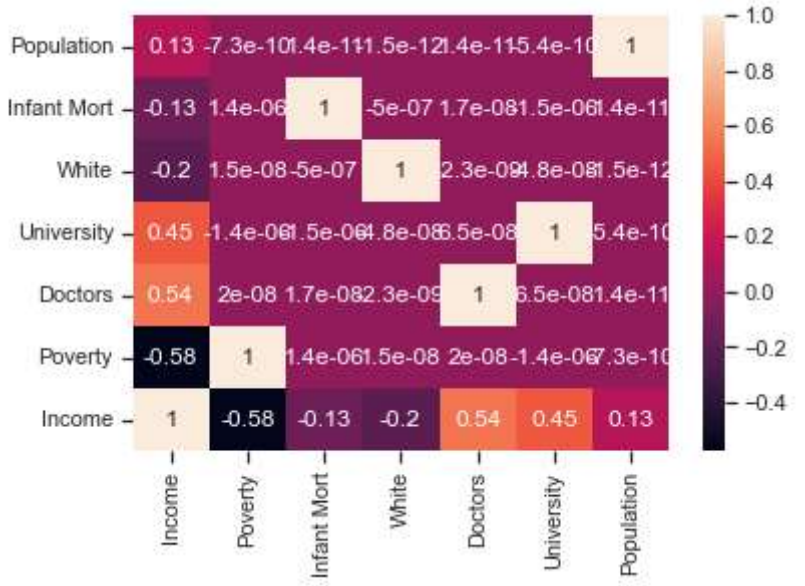
```
Index(['Poverty', 'Infant Mort', 'White', 'Crime', 'Doctors', 'Traf Deaths',
       'University', 'Unemployed', 'Population', 'const'],
      dtype='object')
Index(['Poverty', 'Infant Mort', 'White', 'Crime', 'Doctors', 'Traf Deaths',
       'University', 'Unemployed', 'Population'],
      dtype='object')
Index(['Poverty', 'Infant Mort', 'White', 'Crime', 'Doctors', 'University',
       'Unemployed', 'Population'],
      dtype='object')
Index(['Poverty', 'Infant Mort', 'White', 'Crime', 'Doctors', 'University',
       'Population'],
      dtype='object')
Index(['Poverty', 'Infant Mort', 'White', 'Doctors', 'University',
       'Population'],
      dtype='object')
Index(['Poverty', 'Infant Mort', 'White', 'Doctors', 'University',
       'Population'],
      dtype='object')
```

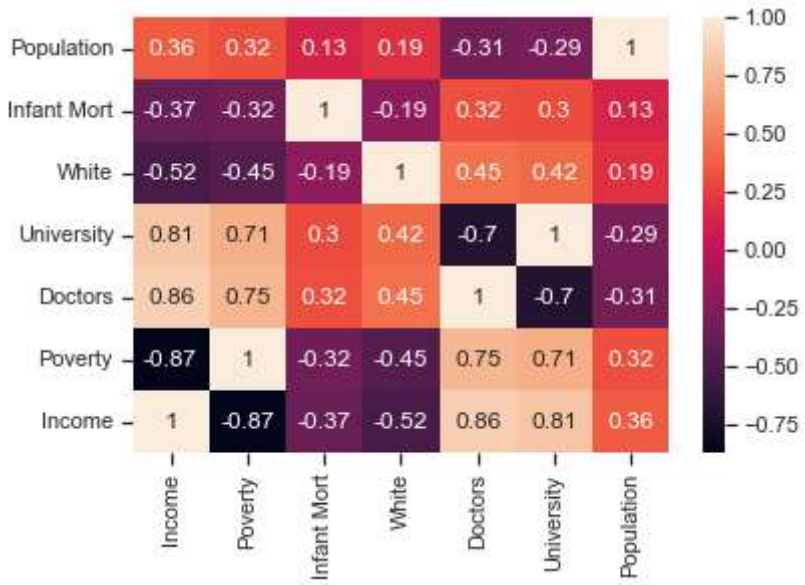
```
divide by zero encountered in true_divide
invalid value encountered in matmul
```

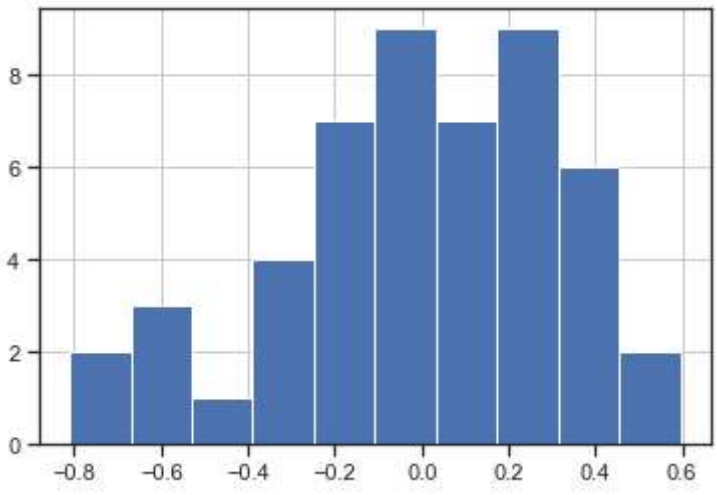

Feature 0
Feature 3
Feature 4
Feature 2
Feature 1
Feature 5
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
SHAP value (impact on model output)
High
Feature value
Low


f(x)
Poverty
Doctors
University
White
Infant Mort
Population
0
10
20
30
40
Instances
1.207
SHAP value
−1.207


2
1
0
−1
−2
0
10
20
30
40
50



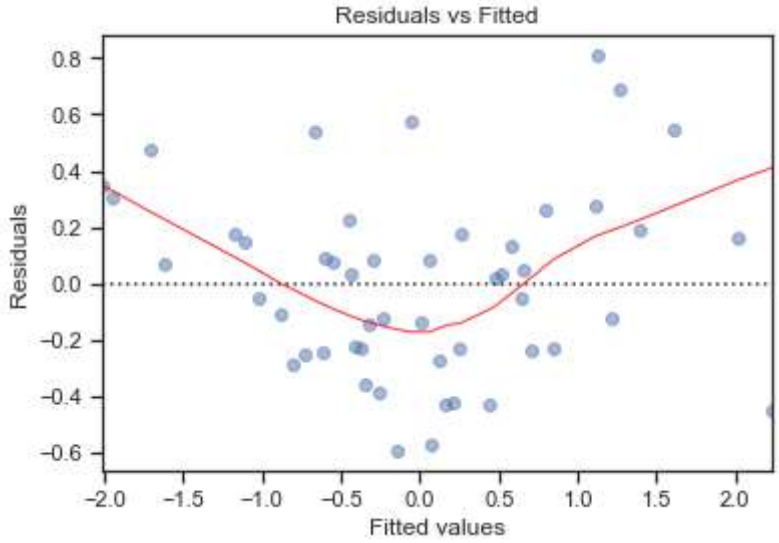


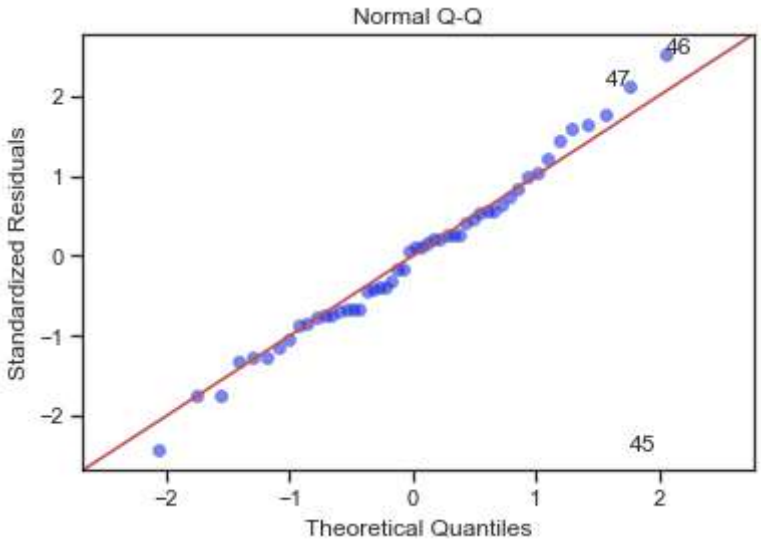


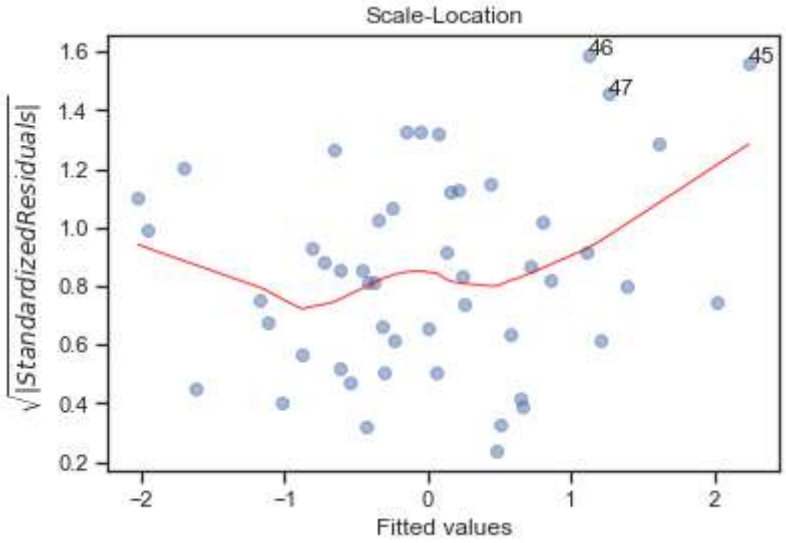

```
mape: 146.83824419131614
```

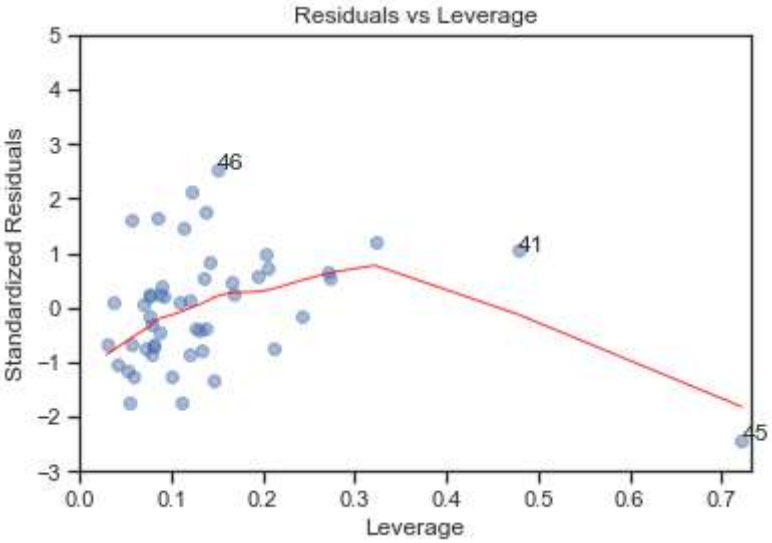
```
Pass the following variables as keyword args: x, y. From version 0.12, the only valid position
al argument will be `data`, and passing other arguments without an explicit keyword will resul
t in an error or misinterpretation.
marker is redundantly defined by the 'marker' keyword argument and the fmt string "bo" (-> mar
ker='o'). The keyword argument will take precedence.
color is redundantly defined by the 'color' keyword argument and the fmt string "bo" (-> color
```

```
='b'). The keyword argument will take precedence.
Pass the following variables as keyword args: x, y. From version 0.12, the only valid position
al argument will be `data`, and passing other arguments without an explicit keyword will resul
t in an error or misinterpretation.
Pass the following variables as keyword args: x, y. From version 0.12, the only valid position
al argument will be `data`, and passing other arguments without an explicit keyword will resul
t in an error or misinterpretation.
Diagnostic Tests of Regression
:{"Non_Linearity_Test": [["F value", NaN], ["p value", NaN]], "Hetroskedasticity_Test": [["Lag
range multiplier statistic", 5.4385149152484935], ["p-value", 0.4889189414357331], ["f-value",
0.8746571952248081], ["f p-value", 0.5214128740268116]], "Residual_Normality_Test": [["Jarque-
Bera", 1.4762778060546502], ["Chi^2 two-tail prob.", 0.478002697583096], ["Skew", 0.3953845044
2848944], ["Kurtosis", 2.711386553435944]], "MultiCollnearity_Test": [["condition no", 1.00000
62322020857]], "Residual_AutoCorrelation_Test": [["p value", 1.5772286825239092]]}
```










```
[<class 'statsmodels.iolib.summary.Summary'>
 """
                            OLS Regression Results
==============================================================================
Dep. Variable:                 Income   R-squared (uncentered):                   0.896
Model:                            OLS   Adj. R-squared (uncentered):              0.881
Method:                 Least Squares   F-statistic:                              62.92
Date:                Sat, 22 Jan 2022   Prob (F-statistic):                    5.75e-20
Time:                        04:33:41   Log-Likelihood:                         -14.456
No. Observations:                  50   AIC:                                      40.91
Df Residuals:                      44   BIC:                                      52.38
Df Model:                           6
Covariance Type:            nonrobust
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
Poverty        -0.5771      0.049    -11.848      0.000      -0.675      -0.479
Infant Mort    -0.1292      0.049     -2.652      0.011      -0.227      -0.031
White          -0.1968      0.049     -4.041      0.000      -0.295      -0.099
Doctors         0.5388      0.049     11.062      0.000       0.441       0.637
University      0.4484      0.049      9.206      0.000       0.350       0.547
Population      0.1255      0.049      2.577      0.013       0.027       0.224
==============================================================================
Omnibus:                        1.554   Durbin-Watson:                   1.577
Prob(Omnibus):                  0.460   Jarque-Bera (JB):                1.476
```

```
Skew:                          0.395   Prob(JB):                     0.478
Kurtosis:                      2.711   Cond. No.                      1.00
==============================================================================

Notes:
[1] R² is computed without centering (uncentered) since the model does not contain a constan
t.
[2] Standard Errors assume that the covariance matrix of the errors is correctly specified.
"""]
```

```
<function __main__.return_model_subset(x, y, autoremove)>
```