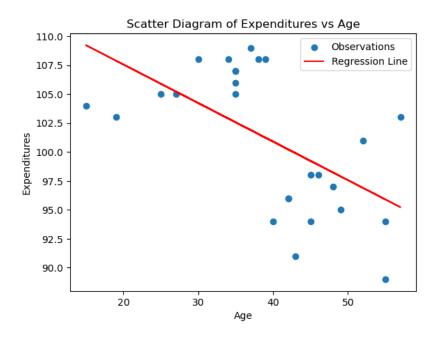
While the generalized model shows a negative relationship between age and expenditure, a closer inspection shows that when dividing the sample into 2 groups (<40 and >40 years) the relationship is actually positive, and with higher significance for the younger group (consistently expending more as they age) until they hit 40 years old, at which their expenditure drops and becomes less stable (As shown by the low t-statistic and high p-value over t.

One could predict better the expenditures of a younger population than an older one.





## OLS Regression Results

| Dep. Variable:   | Ε.  | xpenditures  |   |  |                                      | 0.338   |
|--|---|--|---|--|--------------------------------------|---|
| Model:   |   | ULS  | Adj.  | R-squared:   |                                      | 0.310   |
| Method:  | _ Le  | ast Squares  | F-Sta   | tistic:<br>(F-statisti   |                                      | 12.24   |
| Date:  | Tue,  | 02 Jan 2024  | Prob  | (F-statisti  | c):                                  | 0.00185   |
| Time:  |   |  |   | ikelihood:   |                                      | -78.076   |
| No. Observations:  |   | 26   | AIC:  |  |                                      | 160.2   |
| Df Residuals:  |   | 24   | BIC:  |  |                                      | 162.7   |
| Df Model:  |   | 1  |   |  |                                      |   |
| Covariance Type:   |   | nonrobust  |   |  |                                      |   |
|  |   |  |   |  |                                      |   |
|  |   | td err   |   |  |                                      | 0.975]  |
|  |   |  |   |  |                                      |   |
| const 114.   |   |  |   |  |                                      | 122.253   |
| Age -0.  |   |  |   |  |                                      | -0.137  |
|  | =======   |  |   |  |                                      |   |
| Omnibus:   |   | 5.126  | Durbi   | n-Watson:  |                                      | 1.955   |
| Prob(Omnibus):   |   | 0.077  | Jarqu   | e-Bera (JB)  | :                                    | 1.689   |
| Skew:  |   | -0.021   | Prob(   | e-Bera (JB)<br>JB):  |                                      | 0.430   |
| Kurtosis:  |   | 1.752 Cond. No.  |   |  |                                      | 159.  |
|  |   |  |   |  |                                      |   |
|  |   |  |   |  |                                      |   |
| Model for clients  | aged 40   | or older:  |   |  |                                      |   |
|  |   | OLS Regre  | ssion Re  | sults  |                                      |   |
|  | =======   |  |   |  |                                      |   |
| Dep. Variable:   | E:  | xpenditures  |   |  |                                      | 0.048   |
| Model:   |   | OLS  | Adi.  | R-squared:   |                                      | -0.039  |
| Method:  | Le  | ast Squares  | F-sta   | tistic:<br>(F-statisti<br>ikelihood:                           |                                      | 0.5507  |
| Date:  | Tue   | as a squar es<br>as lan 2024   | Proh  | (F-statisti  | -).                                  | 0.474   |
| Time:  | i ac,   | 12.08.05   | 1000  | ikelihood:   | -).                                  | -34.827   |
|  |   | 12.00.03   | LUG-L   | .IKEIIIIOOU.   |                                      |   |
| No. Observations:  |   | 13   |   |  |                                      | 73.65   |
| Df Residuals:  |   | 11   |   |  |                                      | 74.78   |
| Df Model:  |   | 1  |   |  |                                      |   |
| Covariance Type:   |   | nonrobust  |   |  |                                      |   |
|  |   |  |   |  |                                      |   |
|  | ======  |  | ======  |  |                                      |   |
|  | coef s  | ======<br>td err   | ======<br>t   | P> t   | [0.025                               | 0.975]  |
|  | coef s  | ======<br>td err   | =======<br>t<br>  | P> t   | [0.025                               | 0.975]  |
| const 88.  | ========<br>coef s <sup>.</sup><br><mark>8719</mark>            | =======<br>td err<br><br>9.458   | t<br>9.396  | P> t <br>0.000   | [0.025<br>68.054                     | 0.975]<br><br>109.690   |
| const 88.<br>Age 0.  | =======<br>coef s <sup>:</sup><br><br><mark>8719</mark><br>1465 | ========<br>td err<br><br>9.458<br>0.197   | t<br>9.396<br>0.742   | P> t <br><br>0.000<br>0.474                                    | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581  |
| const 88.<br>Age 0.  | =======<br>coef s <sup>:</sup><br><br><mark>8719</mark><br>1465 | td err<br>9.458<br>0.197   | 9.396<br>0.742  | P> t <br>0.000<br>0.474  | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581  |
| const 88. Age 0 Omnibus:   | =======<br>coef s <sup>:</sup><br><br><mark>8719</mark><br>1465 | 9.458<br>0.197   | t<br>9.396<br>0.742<br>======   | P> t <br>0.000<br>0.474<br>======n-Watson:                     | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581<br>2.745   |
| const 88.<br>Age 0.  | =======<br>coef s <sup>:</sup><br><br><mark>8719</mark><br>1465 | 9.458<br>0.197   | t<br>9.396<br>0.742<br>======   | P> t <br>0.000<br>0.474  | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581  |
| const 88. Age 0 Omnibus:   | =======<br>coef s <sup>:</sup><br><br><mark>8719</mark><br>1465 | 9.458<br>0.197   | t<br>9.396<br>0.742<br>======   | P> t <br>0.000<br>0.474<br>                                    | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581<br>2.745   |
| const 88. Age 0. Omnibus: Prob(Omnibus):   | =======<br>coef s <sup>:</sup><br><br><mark>8719</mark><br>1465 | 9.458<br>0.197   | 9.396<br>0.742<br>=====<br>Durbi<br>Jarqu<br>Prob(  | P> t <br>0.000<br>0.474<br>                                    | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581<br>2.745<br>0.534  |
| const 88. Age 0 Omnibus: Prob(Omnibus): Skew:  | ======================================                          | 9.458<br>0.197<br>1.384<br>0.501<br>-0.496   | 9.396<br>0.742<br>Durbi<br>Jarqu<br>Prob(   | P> t <br>0.000<br>0.474<br>                                    | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427.   |
| const 88. Age 0 Omnibus: Prob(Omnibus): Skew:  | ======================================                          | 9.458<br>0.197<br>1.384<br>0.501<br>-0.496   | 9.396<br>0.742<br>Durbi<br>Jarqu<br>Prob(   | P> t <br>0.000<br>0.474<br>                                    | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427.   |
| const 88. Age 0 Omnibus: Prob(Omnibus): Skew:  | coef s'   | 9.458<br>0.197<br>   | 9.396<br>0.742<br><br>Durbi<br>Jarqu<br>Prob(   | P> t <br>0.000<br>0.474<br>=================================== | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427.   |
| Const 88.  Age 0.  Omnibus: Prob(Omnibus): Skew: Kurtosis:   | coef s'   | 9.458<br>0.197<br>   | 9.396<br>0.742<br><br>Durbi<br>Jarqu<br>Prob(   | P> t <br>0.000<br>0.474<br>=================================== | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427.   |
| Const 88.  Age 0.  Omnibus: Prob(Omnibus): Skew: Kurtosis:   | coef s'   | 9.458<br>0.197<br>   | 9.396<br>0.742<br>  | P> t <br>  | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581<br>2.745<br>0.534<br>0.766<br>427.   |
| const 88. Age 0 Omnibus: Prob(Omnibus): Skew: Kurtosis: Model for clients  | coef s'   | 1.384<br>0.501<br>-0.496<br>2.957<br>  | 9.396<br>0.742<br><br>Durbi<br>Jarqu<br>Prob(<br>Cond.  | P> t   | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581<br>2.745<br>0.534<br>0.766<br>427.   |
| Const 88. Age 0. Omnibus: Prob(Omnibus): Skew: Kurtosis:   | coef s'   | 1.384<br>0.501<br>-0.496<br>2.957<br>  | 9.396<br>0.742<br><br>Durbi<br>Jarqu<br>Prob(<br>Cond.  | P> t   | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581<br>2.745<br>0.534<br>0.766<br>427.   |
| Const 88. Age 0. Omnibus: Prob(Omnibus): Skew: Kurtosis:   | coef s'   | 1.384<br>0.501<br>-0.496<br>2.957<br>  | 9.396<br>0.742<br>======<br>Durbi<br>Jarqu<br>Prob(<br>Cond.<br>======<br>Ssion Re<br>======<br>R-squ<br>Adj.                                     | P> t   | [0.025<br>68.054<br>-0.288           | 0.975]<br>109.690<br>0.581<br>2.745<br>0.534<br>0.766<br>427.   |
| Const 88.  Age 0.  Omnibus: Prob(Omnibus): Skew: Kurtosis: Model for clients Dep. Variable: Model: Method:   | coef s'   | 1.384<br>0.501<br>-0.496<br>2.957<br>  | 9.396<br>0.742<br>======<br>Durbi<br>Jarqu<br>Prob(<br>Cond.<br>======<br>Ssion Re<br>======<br>R-squ<br>Adj.                                     | P> t   | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427  |
| Const 88. Age 0  | coef s'   | 1.384<br>0.501<br>-0.496<br>2.957<br>  | 9.396<br>0.742<br>  | P> t   | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962   |
| Const 88.  Age 0.  Omnibus: Prob(Omnibus): Skew: Kurtosis: Model for clients Dep. Variable: Model: Method: Date: Time:   | coef s'   | 1.384<br>0.197<br>1.384<br>0.501<br>-0.496<br>2.957<br>1.384<br>0.501<br>0.501<br>2.957<br>1.384<br>0.501<br>2.957   | 9.396 0.742 Durbi Jarqu Prob( Cond  Ssion Re R-squ Adj. F-sta Prob Log-I  | P> t   | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212                                 |
| Const 88.  Age 0.  Omnibus: Prob(Omnibus): Skew: Kurtosis: Model for clients Dep. Variable: Model: Method: Date: Time: No. Observations:   | coef s'   | 1.384<br>0.501<br>-0.496<br>2.957<br>  | 9.396 0.742  Durbi Jarqu Prob( Cond.  Ssion Re R-squ Adj. F-sta Prob Log-L AIC:   | P> t   | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 42.42                           |
| Const 88.  Age 0.  Omnibus: Prob(Omnibus): Skew: Kurtosis: Model for clients Dep. Variable: Model: Method: Date: Time: No. Observations: Df Residuals:   | coef s'   | 9.458<br>0.197<br>-0.496<br>2.957<br>-0.496<br>2.957<br>   | 9.396 0.742  Durbid Jarque Prob( Cond.  Ssion Reserved Adj. F-sta Prob Log-L AIC: BIC:  | P> t   | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212                                 |
| const 88. Age 0  | younger   | 9.458<br>0.197<br>1.384<br>0.501<br>-0.496<br>2.957<br>2.957<br>   | 9.396<br>0.742<br>Durbi<br>Jarqu<br>Cond.<br>Cond.<br>Ssion Re<br>R-squ<br>Adj.<br>F-sta<br>Prob<br>Log-I<br>AIC:<br>BIC:                         | P> t   | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 42.42                           |
| const 88. Age 0  | younger   | 9.458 0.197  | 9.396 0.742  Durbi Jarqu Prob( Cond.  Ssion Re R-squ Adj. F-sta Prob Log-I AIC: BIC:  | P> t   | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 42.42 43.55                     |
| Const 88. Age 0.  Prob(Omnibus): Skew: Kurtosis:  Model for clients  Dep. Variable: Model: Method: Date: Time: No. Observations: Df Residuals: Df Model: Covariance Type:  | younger :   | ### 10 ### 1 | y.396 0.742 Durbi Jarqu Prob( Cond.  Ssion Re R-squ Adj. F-sta Prob Log-l AIC: BIC:   | P> t   | [0.025<br>68.054<br>-0.288           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.00962 -19.212 42.42 43.55                      |
| Const 88. Age 0. Prob(Omnibus: Prob(Omnibus): Skew: Kurtosis: Hodel for clients  Prob(Omnibus): Skew: Kurtosis: Hodel for clients  Model for clients  Element Survey State Sta | younger :  Let Tue, (1)   | ### description of the image   | t 9.396 0.742 Durbi Jarqu Prob( Cond Ssion Re R-squ Adj. F-sta Prob Log-l AIC: BIC:   | P> t   | [0.025<br>                           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.00962 -19.212 42.42 43.55                      |
| Const 88. Age 0  | younger EE  | ### 10 ### 1 | 9.396 0.742  Durbi Jarqu Prob( Cond.  Ssion Re R-squ Adj. F-sta Prob Log-l AIC: BIC:  | P> t   | [0.025<br>68.054<br>-0.288<br>:      | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.00962 -19.212 42.42 43.55                      |
| Const 88.  Age 0.  Prob(Omnibus: Prob(Omnibus): Skew: Kurtosis:  Model for clients  Model for clients  Model: Method: Date: Time: No. Observations: Df Residuals: Df Model: Covariance Type:   | younger :  Let Tue, (1)   | td err  9.458 0.197  1.384 0.501 -0.496 2.957  than 40: OLS Regre  xpenditures OLS ast Squares 32 Jan 2024 12:08:05 13 11 nonrobust  td err  1.416   | 9.396 0.742 Durbi Jarqu Prob( Cond Ssion Re R-squ Adj. F-sta Prob Log-l AIC: BIC:   | P> t   | [0.025<br>68.054<br>-0.288<br>:      | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 42.42 43.55                     |
| Const 88. Age 0. Prob(Omnibus: Prob(Omnibus): Skew: Kurtosis: Hodel for clients  Prob(Omnibus): Skew: Kurtosis: Hodel for clients  Pep. Variable: Model: Method: Date: Time: No. Observations: Df Residuals: Df Model: Covariance Type: Hodel: Covariance Type: Hodel: Const 100. Age 0.   | younger :  Lea Tue, (1)   | 1.384<br>0.501<br>-0.496<br>2.957<br>  | 9.396 0.742 Durbi Jarqu Prob( Cond  Ssion Re R-squ Adj. F-sta Prob Log-l AIC: BIC: 70.791 4.460   | P> t   | [0.025<br>68.054<br>-0.288<br>:<br>: | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 42.42 43.55                     |
| Const 88.  Age 0.  Prob(Omnibus: Prob(Omnibus): Skew: Kurtosis:  Model for clients  Dep. Variable: Model: Method: Date: Time: No. Observations: Df Residuals: Df Model: Covariance Type:  Const 100.  Age 0.   | younger :  Lea Tue, (1)   | 9.458 0.197  | 9.396 0.742  Durbid Jarque Proble Cond.  Ssion Reserved Adj. F-sta Proble Log-L AIC: BIC:  70.791 4.460   | P> t   | [0.025<br>68.054<br>-0.288<br>:<br>: | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 42.42 43.55                     |
| Const 88.  Age 0.  Prob(Omnibus): Skew: Kurtosis:  Model for clients  Pop. Variable: Model: Method: Date: Time: No. Observations: Df Residuals: Df Model: Covariance Type:  Const 100.  Age 0.  Mage 0.  Comnibus:   | younger :  Lea Tue, (1)   | ### 1.384 ### 0.501 ### 0. | 9.396<br>0.742<br>======<br>Durbi<br>Jarqu<br>Prob(<br>Cond.<br>======<br>R-squ<br>Adj.<br>F-sta<br>Prob<br>Log-L<br>AIC:<br>BIC:<br>=======<br>t | P> t   | [0.025<br>                           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 42.42 43.55                     |
| Const 88. Age 0  | younger :  Lea Tue, (1)   | ### 1.384 ### 0.501 ### 0. | 9.396 0.742 Durbi Jarqu Prob( Cond  Ssion Re R-squ Adj. F-sta Prob Log-l AIC: BIC: 14.460 Durbi Jarqu   | P> t   | [0.025<br>                           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 43.55 103.349 0.296 1.864 0.154 |
| Const 88.  Age 0.  Prob(Omnibus): Skew: Kurtosis:  Model for clients  Pop. Variable: Model: Method: Date: Time: No. Observations: Df Residuals: Df Model: Covariance Type:  Const 100.  Age 0.  Mage 0.  Comnibus:   | younger :  Lea Tue, (1)   | ### 1.50 ### 1.384 ### 0.501 ### 0.601 ### 0.6 | 9.396<br>0.742<br>======<br>Durbi<br>Jarqu<br>Prob(<br>Cond.<br>======<br>R-squ<br>Adj.<br>F-sta<br>Prob<br>Log-L<br>AIC:<br>BIC:<br>=======<br>t | P> t   | [0.025<br>                           | 0.975] 109.690 0.581 2.745 0.534 0.766 427 0.644 0.612 19.90 0.000962 -19.212 42.42 43.55                     |