

PSet1_Q3_ARE213

October 2, 2023

```
[57]: import pandas as pd
import numpy as np
#import data packages

import statsmodels.api as sm
#import regression packages
```

```
[58]: data1 = pd.read_csv('clean_pset1.csv')
#open data
```

```
[59]: #re-define variables from last question

#variable classification

#outcome
y = ['dbrwt']
#treatment
D = ['tobacco']
#cor with y and D
x1 = ['alcohol', 'mrace3_2', 'mrace3_3', 'ormothhis', 'adeq_2.0', 'adeq_3.0', '
→'cardiac', 'pre4000', 'phyper',
      'diabetes', 'anemia', 'lung', 'dlivord', 'educ_0.0', 'educ_1.0', 'educ_2.
→0', 'dimage', 'dmar', 'tot_2.0',
      'tot_3.0', 'tot_4.0', 'tot_5.0', 'tot_6.0', 'tot_7.0', 'tot_8.0', 'live_1.0', '
→'live_2.0', 'live_3.0', 'live_4.0',
      'live_5.0', 'live_6.0', 'live_7.0', 'live_8.0', 'live_9.0']

#cor with y not D
x3 = ['dgestat', 'csex', 'plur_1']
```

```
[60]: #estimating the coefficients on uninteracted regression
vals = sm.OLS(data1[y], sm.add_constant(data1[D+x1+x3]))
out = vals.fit(cov_type = 'HCO')
print(out.summary())
```

OLS Regression Results

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Dep. Variable:          dbrwt      R-squared:          0.377
Model:                  OLS        Adj. R-squared:       0.377
Method:                 Least Squares  F-statistic:        1326.
Date:                  Sun, 01 Oct 2023  Prob (F-statistic):    0.00
Time:                  12:34:49      Log-Likelihood:     -8.6579e+05
No. Observations:      114610      AIC:                1.732e+06
Df Residuals:          114571      BIC:                1.732e+06
Df Model:               38
Covariance Type:       HCO
=====

```

	coef	std err	z	P> z	[0.025	0.975]
const	-1815.7500	82.661	-21.966	0.000	-1977.762	-1653.738
tobacco	-209.5893	4.061	-51.607	0.000	-217.549	-201.629
alcohol	-60.1982	14.648	-4.110	0.000	-88.908	-31.488
mrace3_2	-185.5099	9.359	-19.821	0.000	-203.853	-167.166
mrace3_3	-139.8075	5.002	-27.948	0.000	-149.612	-130.003
ormothhis	-97.1897	7.789	-12.478	0.000	-112.456	-81.924
adeq_2.0	-41.1072	3.598	-11.424	0.000	-48.159	-34.055
adeq_3.0	-77.0203	7.406	-10.400	0.000	-91.536	-62.505
cardiac	-25.6942	16.613	-1.547	0.122	-58.255	6.867
pre4000	392.0379	12.160	32.241	0.000	368.206	415.870
phyper	-90.9988	9.363	-9.719	0.000	-109.351	-72.647
diabetes	147.5940	10.007	14.749	0.000	127.981	167.207
anemia	12.1110	13.709	0.883	0.377	-14.759	38.981
lung	-22.2995	16.398	-1.360	0.174	-54.439	9.840
dlivord	24.7545	2.782	8.899	0.000	19.302	30.207
educ_0.0	-35.8131	75.956	-0.472	0.637	-184.684	113.057
educ_1.0	-41.6668	75.544	-0.552	0.581	-189.730	106.396
educ_2.0	-11.5063	75.556	-0.152	0.879	-159.593	136.580
dmage	0.9550	0.333	2.868	0.004	0.302	1.608
dmarr	41.7892	4.232	9.875	0.000	33.495	50.083
tot_2.0	11.9864	5.111	2.345	0.019	1.968	22.005
tot_3.0	9.0387	5.977	1.512	0.130	-2.676	20.754
tot_4.0	10.1422	7.252	1.399	0.162	-4.071	24.356
tot_5.0	-8.1258	9.157	-0.887	0.375	-26.074	9.822
tot_6.0	-8.0253	12.399	-0.647	0.517	-32.327	16.276
tot_7.0	-25.5080	16.664	-1.531	0.126	-58.169	7.153
tot_8.0	-47.2789	19.672	-2.403	0.016	-85.836	-8.722
live_1.0	-18.4411	17.480	-1.055	0.291	-52.700	15.818
live_2.0	-45.5206	18.977	-2.399	0.016	-82.716	-8.326
live_3.0	53.0217	8.296	6.391	0.000	36.762	69.282
live_4.0	93.5959	7.501	12.478	0.000	78.894	108.298
live_5.0	97.5968	6.639	14.700	0.000	84.585	110.609
live_6.0	89.6434	7.015	12.779	0.000	75.895	103.392
live_7.0	86.7616	7.961	10.898	0.000	71.158	102.365
live_8.0	65.5586	9.102	7.203	0.000	47.720	83.398

live_9.0	52.4903	7.388	7.105	0.000	38.010	66.970
dgestat	114.8325	0.847	135.590	0.000	113.173	116.492
csex	139.2315	2.727	51.048	0.000	133.886	144.577
plur_1	569.6762	9.835	57.925	0.000	550.401	588.952
=====						
Omnibus:		1327.175	Durbin-Watson:			1.962
Prob(Omnibus):		0.000	Jarque-Bera (JB):			2284.898
Skew:		0.056	Prob(JB):			0.00
Kurtosis:		3.683	Cond. No.			5.72e+03
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Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

```
[70]: #all coefficients
X = D+x1+x3

#systematically droop each one and estimate regression coefficients
for item in X:
    X = D+x1+x3
    X.remove(item)
    print(item)
    vals = sm.OLS(data1[y], sm.add_constant(data1[X]))
    out = vals.fit(cov_type = 'HCO')
    print(out.summary())
```

tobacco

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.362
Model:	OLS	Adj. R-squared:	0.362
Method:	Least Squares	F-statistic:	1272.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:40	Log-Likelihood:	-8.6715e+05
No. Observations:	114610	AIC:	1.734e+06
Df Residuals:	114572	BIC:	1.735e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1885.0987	84.131	-22.407	0.000	-2049.992	-1720.206
alcohol	-134.2192	15.002	-8.947	0.000	-163.622	-104.816
mrace3_2	-167.3435	9.370	-17.860	0.000	-185.708	-148.979
mrace3_3	-107.2519	5.007	-21.419	0.000	-117.066	-97.438
ormothhis	-62.4589	7.802	-8.005	0.000	-77.751	-47.167

adeq_2.0	-44.2407	3.646	-12.133	0.000	-51.387	-37.094
adeq_3.0	-86.7658	7.501	-11.567	0.000	-101.468	-72.063
cardiac	-23.5573	16.776	-1.404	0.160	-56.438	9.323
pre4000	407.6546	12.297	33.150	0.000	383.552	431.757
phyper	-82.1548	9.370	-8.768	0.000	-100.520	-63.790
diabetes	146.2193	10.056	14.541	0.000	126.511	165.928
anemia	8.7281	13.931	0.627	0.531	-18.577	36.033
lung	-27.0287	16.660	-1.622	0.105	-59.682	5.624
dlivord	25.5467	2.821	9.055	0.000	20.017	31.076
educ_0.0	-44.9688	77.531	-0.580	0.562	-196.926	106.989
educ_1.0	-74.8693	77.112	-0.971	0.332	-226.005	76.267
educ_2.0	-20.6497	77.124	-0.268	0.789	-171.809	130.510
dmage	1.6188	0.337	4.800	0.000	0.958	2.280
dmar	80.1879	4.236	18.930	0.000	71.885	88.490
tot_2.0	1.1095	5.159	0.215	0.830	-9.002	11.221
tot_3.0	-8.7051	6.041	-1.441	0.150	-20.546	3.135
tot_4.0	-12.0781	7.319	-1.650	0.099	-26.424	2.267
tot_5.0	-36.7423	9.298	-3.952	0.000	-54.966	-18.519
tot_6.0	-39.2111	12.583	-3.116	0.002	-63.873	-14.550
tot_7.0	-67.1757	16.966	-3.959	0.000	-100.429	-33.923
tot_8.0	-80.2253	19.838	-4.044	0.000	-119.106	-41.344
live_1.0	-12.8772	17.537	-0.734	0.463	-47.249	21.495
live_2.0	-52.1658	19.190	-2.718	0.007	-89.778	-14.554
live_3.0	50.6503	8.414	6.020	0.000	34.160	67.141
live_4.0	96.4705	7.595	12.701	0.000	81.584	111.357
live_5.0	101.6366	6.717	15.132	0.000	88.472	114.801
live_6.0	91.4651	7.097	12.887	0.000	77.554	105.376
live_7.0	87.1959	8.054	10.826	0.000	71.409	102.982
live_8.0	62.6228	9.230	6.785	0.000	44.533	80.712
live_9.0	39.9427	7.482	5.338	0.000	25.278	54.607
dgestat	115.3416	0.849	135.837	0.000	113.677	117.006
csex	138.7396	2.760	50.267	0.000	133.330	144.149
plur_1	566.2731	9.850	57.492	0.000	546.968	585.578

Omnibus:	1223.889	Durbin-Watson:	1.963
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2069.434
Skew:	0.049	Prob(JB):	0.00
Kurtosis:	3.651	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

alcohol

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
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Model:                      OLS      Adj. R-squared:      0.377
Method:                    Least Squares      F-statistic:      1361.
Date:                      Sun, 01 Oct 2023      Prob (F-statistic):      0.00
Time:                      12:50:41      Log-Likelihood:      -8.6580e+05
No. Observations:          114610      AIC:      1.732e+06
Df Residuals:              114572      BIC:      1.732e+06
Df Model:                  37
Covariance Type:           HCO

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1814.8924	82.664	-21.955	0.000	-1976.911	-1652.874
tobacco	-211.2937	4.045	-52.232	0.000	-219.222	-203.365
mrace3_2	-185.2562	9.360	-19.792	0.000	-203.601	-166.911
mrace3_3	-140.4127	5.003	-28.064	0.000	-150.219	-130.606
ormothhis	-97.1930	7.790	-12.477	0.000	-112.461	-81.925
adeq_2.0	-41.4452	3.598	-11.520	0.000	-48.496	-34.394
adeq_3.0	-78.5504	7.404	-10.609	0.000	-93.062	-64.038
cardiac	-25.9902	16.615	-1.564	0.118	-58.555	6.574
pre4000	392.0953	12.163	32.238	0.000	368.257	415.934
phyper	-90.8487	9.366	-9.700	0.000	-109.205	-72.492
diabetes	147.8041	10.010	14.766	0.000	128.185	167.423
anemia	12.3537	13.715	0.901	0.368	-14.527	39.235
lung	-22.4792	16.414	-1.369	0.171	-54.651	9.692
dlivord	24.8355	2.783	8.924	0.000	19.381	30.290
educ_0.0	-36.1175	75.957	-0.475	0.634	-184.991	112.756
educ_1.0	-42.3737	75.545	-0.561	0.575	-190.439	105.691
educ_2.0	-12.3087	75.557	-0.163	0.871	-160.397	135.779
dmage	0.8960	0.333	2.692	0.007	0.244	1.548
dmarr	42.2443	4.232	9.983	0.000	33.951	50.538
tot_2.0	11.9240	5.111	2.333	0.020	1.906	21.942
tot_3.0	8.9270	5.977	1.494	0.135	-2.787	20.641
tot_4.0	9.8518	7.253	1.358	0.174	-4.363	24.067
tot_5.0	-8.7256	9.154	-0.953	0.341	-26.668	9.217
tot_6.0	-8.4014	12.400	-0.678	0.498	-32.705	15.902
tot_7.0	-26.3371	16.676	-1.579	0.114	-59.021	6.347
tot_8.0	-48.3311	19.705	-2.453	0.014	-86.951	-9.711
live_1.0	-18.6062	17.477	-1.065	0.287	-52.861	15.649
live_2.0	-45.2016	18.979	-2.382	0.017	-82.399	-8.004
live_3.0	52.8107	8.299	6.364	0.000	36.545	69.076
live_4.0	93.5693	7.502	12.473	0.000	78.866	108.272
live_5.0	97.4945	6.640	14.682	0.000	84.480	110.509
live_6.0	89.6539	7.015	12.780	0.000	75.904	103.404
live_7.0	86.8441	7.963	10.906	0.000	71.237	102.452
live_8.0	65.6102	9.101	7.209	0.000	47.772	83.449
live_9.0	52.5005	7.389	7.105	0.000	38.019	66.982
dgestat	114.8622	0.847	135.648	0.000	113.203	116.522
csex	139.2825	2.728	51.064	0.000	133.937	144.629

plur_1	569.5326	9.835	57.910	0.000	550.257	588.808
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Omnibus:	1328.815	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2288.876
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

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Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

mrace3_2

OLS Regression Results

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Dep. Variable:	dbrwt	R-squared:	0.375
Model:	OLS	Adj. R-squared:	0.375
Method:	Least Squares	F-statistic:	1348.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:41	Log-Likelihood:	-8.6596e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1911.5621	82.397	-23.199	0.000	-2073.057	-1750.067
tobacco	-206.9648	4.059	-50.985	0.000	-214.921	-199.009
alcohol	-58.6064	14.664	-3.997	0.000	-87.347	-29.865
mrace3_3	-136.2791	4.999	-27.262	0.000	-146.077	-126.482
ormothhis	-94.2459	7.781	-12.112	0.000	-109.497	-78.995
adeq_2.0	-43.7423	3.602	-12.144	0.000	-50.802	-36.683
adeq_3.0	-81.8059	7.406	-11.046	0.000	-96.321	-67.291
cardiac	-22.8939	16.595	-1.380	0.168	-55.420	9.632
pre4000	394.3352	12.155	32.442	0.000	370.512	418.159
phyper	-88.9827	9.366	-9.501	0.000	-107.339	-70.626
diabetes	145.9116	10.041	14.532	0.000	126.232	165.591
anemia	10.5794	13.718	0.771	0.441	-16.308	37.467
lung	-22.2915	16.403	-1.359	0.174	-54.440	9.857
dlivord	25.2593	2.784	9.073	0.000	19.803	30.716
educ_0.0	51.1278	75.767	0.675	0.500	-97.373	199.628
educ_1.0	49.9146	75.344	0.662	0.508	-97.756	197.585
educ_2.0	78.4740	75.363	1.041	0.298	-69.235	226.183
dmage	0.8699	0.333	2.610	0.009	0.217	1.523
dmarr	40.2856	4.234	9.514	0.000	31.986	48.585
tot_2.0	11.9314	5.118	2.331	0.020	1.901	21.962
tot_3.0	9.6406	5.985	1.611	0.107	-2.090	21.371

tot_4.0	11.1052	7.258	1.530	0.126	-3.120	25.331
tot_5.0	-7.2715	9.165	-0.793	0.428	-25.235	10.692
tot_6.0	-7.8452	12.401	-0.633	0.527	-32.151	16.461
tot_7.0	-23.9354	16.690	-1.434	0.152	-56.647	8.776
tot_8.0	-45.7420	19.699	-2.322	0.020	-84.352	-7.132
live_1.0	-18.6119	17.477	-1.065	0.287	-52.865	15.641
live_2.0	-45.8993	18.998	-2.416	0.016	-83.134	-8.664
live_3.0	52.7883	8.304	6.357	0.000	36.512	69.065
live_4.0	94.1010	7.513	12.526	0.000	79.377	108.825
live_5.0	98.5137	6.647	14.820	0.000	85.485	111.542
live_6.0	90.2990	7.024	12.855	0.000	76.532	104.066
live_7.0	87.1797	7.977	10.929	0.000	71.546	102.814
live_8.0	65.3174	9.110	7.170	0.000	47.462	83.173
live_9.0	52.2031	7.395	7.059	0.000	37.709	66.697
dgestat	114.9604	0.846	135.905	0.000	113.302	116.618
csex	139.2711	2.732	50.983	0.000	133.917	144.625
plur_1	567.7850	9.834	57.737	0.000	548.511	587.059

Omnibus:	1304.417	Durbin-Watson:	1.961
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2230.723
Skew:	0.057	Prob(JB):	0.00
Kurtosis:	3.674	Cond. No.	5.71e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.71e+03. This might indicate that there are strong multicollinearity or other numerical problems.

mrace3_3

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.372
Model:	OLS	Adj. R-squared:	0.372
Method:	Least Squares	F-statistic:	1326.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:41	Log-Likelihood:	-8.6621e+05
No. Observations:	114610	AIC:	1.733e+06
Df Residuals:	114572	BIC:	1.733e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1921.0238	83.717	-22.947	0.000	-2085.107	-1756.941
tobacco	-194.4942	4.046	-48.072	0.000	-202.424	-186.564
alcohol	-72.3846	14.814	-4.886	0.000	-101.420	-43.350
mrace3_2	-174.1855	9.368	-18.593	0.000	-192.547	-155.824
ormothhis	-67.8996	7.725	-8.790	0.000	-83.040	-52.759

adeq_2.0	-46.4625	3.613	-12.861	0.000	-53.543	-39.382
adeq_3.0	-94.9586	7.426	-12.786	0.000	-109.514	-80.403
cardiac	-22.4456	16.615	-1.351	0.177	-55.010	10.119
pre4000	399.2477	12.179	32.781	0.000	375.377	423.118
phyper	-91.8664	9.393	-9.780	0.000	-110.276	-73.457
diabetes	145.3487	9.988	14.552	0.000	125.772	164.926
anemia	1.8629	13.825	0.135	0.893	-25.234	28.960
lung	-19.8854	16.448	-1.209	0.227	-52.123	12.352
dlivord	25.1574	2.798	8.992	0.000	19.674	30.641
educ_0.0	-29.0886	77.246	-0.377	0.706	-180.488	122.311
educ_1.0	-47.9996	76.842	-0.625	0.532	-198.606	102.607
educ_2.0	-20.8075	76.853	-0.271	0.787	-171.436	129.821
dmage	1.8008	0.333	5.409	0.000	1.148	2.453
dmar	82.4302	3.984	20.688	0.000	74.621	90.239
tot_2.0	3.8667	5.126	0.754	0.451	-6.180	13.914
tot_3.0	-3.8567	5.984	-0.644	0.519	-15.586	7.873
tot_4.0	-6.7926	7.259	-0.936	0.349	-21.020	7.434
tot_5.0	-30.5662	9.172	-3.333	0.001	-48.543	-12.589
tot_6.0	-35.9549	12.437	-2.891	0.004	-60.331	-11.579
tot_7.0	-52.2456	16.709	-3.127	0.002	-84.994	-19.497
tot_8.0	-79.2977	19.713	-4.023	0.000	-117.934	-40.661
live_1.0	-7.9524	17.484	-0.455	0.649	-42.221	26.316
live_2.0	-49.7633	19.043	-2.613	0.009	-87.086	-12.440
live_3.0	53.8704	8.341	6.458	0.000	37.522	70.219
live_4.0	98.1068	7.533	13.023	0.000	83.342	112.872
live_5.0	102.5707	6.669	15.379	0.000	89.499	115.643
live_6.0	93.4057	7.041	13.267	0.000	79.606	107.205
live_7.0	88.8447	7.999	11.107	0.000	73.167	104.523
live_8.0	65.8784	9.138	7.209	0.000	47.969	83.788
live_9.0	49.1766	7.424	6.624	0.000	34.626	63.728
dgestat	116.0423	0.845	137.390	0.000	114.387	117.698
csex	139.1232	2.738	50.818	0.000	133.757	144.489
plur_1	569.4123	9.857	57.765	0.000	550.092	588.732

Omnibus:	1310.079	Durbin-Watson:	1.959
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2246.458
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.677	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

ormothhis

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.376
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Model:                OLS      Adj. R-squared:      0.376
Method:               Least Squares      F-statistic:      1356.
Date:                 Sun, 01 Oct 2023      Prob (F-statistic):      0.00
Time:                 12:50:41      Log-Likelihood:      -8.6587e+05
No. Observations:      114610      AIC:      1.732e+06
Df Residuals:          114572      BIC:      1.732e+06
Df Model:              37
Covariance Type:      HCO

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1851.5882	83.807	-22.093	0.000	-2015.848	-1687.329
tobacco	-205.1483	4.049	-50.663	0.000	-213.085	-197.212
alcohol	-60.2160	14.649	-4.110	0.000	-88.928	-31.504
mrace3_2	-182.9044	9.349	-19.563	0.000	-201.229	-164.580
mrace3_3	-131.7301	4.963	-26.544	0.000	-141.457	-122.003
adeq_2.0	-42.0863	3.601	-11.687	0.000	-49.144	-35.028
adeq_3.0	-78.9903	7.412	-10.657	0.000	-93.517	-64.464
cardiac	-25.0143	16.646	-1.503	0.133	-57.640	7.611
pre4000	393.3164	12.153	32.365	0.000	369.498	417.135
phyper	-90.1975	9.367	-9.630	0.000	-108.556	-71.839
diabetes	146.1233	10.002	14.609	0.000	126.519	165.728
anemia	6.0885	13.762	0.442	0.658	-20.884	33.061
lung	-27.2855	16.413	-1.662	0.096	-59.455	4.884
dlivord	24.5162	2.781	8.817	0.000	19.066	29.966
educ_0.0	-31.6444	77.270	-0.410	0.682	-183.091	119.803
educ_1.0	-28.7515	76.857	-0.374	0.708	-179.388	121.885
educ_2.0	2.2786	76.867	0.030	0.976	-148.378	152.935
dmage	1.2338	0.333	3.710	0.000	0.582	1.886
dmarr	48.4202	4.199	11.531	0.000	40.190	56.650
tot_2.0	11.7360	5.115	2.294	0.022	1.710	21.762
tot_3.0	8.4373	5.982	1.410	0.158	-3.287	20.161
tot_4.0	8.9889	7.257	1.239	0.215	-5.234	23.212
tot_5.0	-9.6001	9.163	-1.048	0.295	-27.559	8.359
tot_6.0	-10.1132	12.405	-0.815	0.415	-34.427	14.201
tot_7.0	-27.2464	16.683	-1.633	0.102	-59.944	5.451
tot_8.0	-47.3037	19.664	-2.406	0.016	-85.844	-8.763
live_1.0	-18.0786	17.472	-1.035	0.301	-52.323	16.166
live_2.0	-50.4891	19.005	-2.657	0.008	-87.738	-13.240
live_3.0	51.4230	8.299	6.196	0.000	35.157	67.689
live_4.0	93.2915	7.506	12.429	0.000	78.580	108.003
live_5.0	97.1598	6.641	14.630	0.000	84.143	110.176
live_6.0	89.1734	7.019	12.705	0.000	75.417	102.930
live_7.0	85.7142	7.964	10.763	0.000	70.105	101.323
live_8.0	63.7268	9.104	7.000	0.000	45.884	81.570
live_9.0	50.8545	7.388	6.884	0.000	36.375	65.334
dgestat	115.0155	0.847	135.849	0.000	113.356	116.675
csex	139.1457	2.729	50.980	0.000	133.796	144.495

plur_1	569.1881	9.843	57.828	0.000	549.897	588.480
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Omnibus:	1316.512	Durbin-Watson:	1.961
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2261.002
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.679	Cond. No.	5.72e+03

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Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

adeq_2.0

OLS Regression Results

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Dep. Variable:	dbrwt	R-squared:	0.376
Model:	OLS	Adj. R-squared:	0.376
Method:	Least Squares	F-statistic:	1356.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:42	Log-Likelihood:	-8.6586e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1835.4911	82.618	-22.217	0.000	-1997.419	-1673.563
tobacco	-210.3848	4.064	-51.764	0.000	-218.351	-202.419
alcohol	-63.9245	14.659	-4.361	0.000	-92.655	-35.193
mrace3_2	-190.1406	9.363	-20.309	0.000	-208.491	-171.790
mrace3_3	-142.7397	5.001	-28.542	0.000	-152.541	-132.938
ormothhis	-99.1336	7.794	-12.719	0.000	-114.409	-83.858
adeq_3.0	-61.9356	7.303	-8.481	0.000	-76.249	-47.622
cardiac	-25.6477	16.633	-1.542	0.123	-58.247	6.952
pre4000	390.4658	12.173	32.075	0.000	366.606	414.325
phyper	-90.4341	9.377	-9.644	0.000	-108.812	-72.056
diabetes	148.9439	10.033	14.846	0.000	129.280	168.608
anemia	9.5502	13.704	0.697	0.486	-17.309	36.409
lung	-21.9047	16.400	-1.336	0.182	-54.049	10.239
dlivord	23.1903	2.780	8.342	0.000	17.741	28.639
educ_0.0	-39.1491	75.952	-0.515	0.606	-188.012	109.714
educ_1.0	-35.8450	75.535	-0.475	0.635	-183.890	112.200
educ_2.0	-4.6823	75.546	-0.062	0.951	-152.749	143.385
dmage	1.1941	0.333	3.589	0.000	0.542	1.846
dmarr	45.7130	4.224	10.822	0.000	37.434	53.992
tot_2.0	12.5641	5.115	2.456	0.014	2.539	22.589
tot_3.0	9.7063	5.982	1.623	0.105	-2.017	21.430

tot_4.0	10.6423	7.255	1.467	0.142	-3.577	24.862
tot_5.0	-7.6338	9.164	-0.833	0.405	-25.596	10.328
tot_6.0	-7.2448	12.392	-0.585	0.559	-31.533	17.043
tot_7.0	-25.2570	16.683	-1.514	0.130	-57.955	7.441
tot_8.0	-45.7471	19.689	-2.324	0.020	-84.337	-7.158
live_1.0	-17.3780	17.502	-0.993	0.321	-51.681	16.925
live_2.0	-48.0514	18.995	-2.530	0.011	-85.280	-10.823
live_3.0	50.2061	8.299	6.050	0.000	33.941	66.471
live_4.0	92.2599	7.503	12.297	0.000	77.555	106.965
live_5.0	97.6858	6.641	14.710	0.000	84.670	110.702
live_6.0	90.3395	7.019	12.871	0.000	76.583	104.096
live_7.0	87.1066	7.966	10.934	0.000	71.493	102.721
live_8.0	66.4963	9.108	7.301	0.000	48.646	84.347
live_9.0	53.3311	7.394	7.213	0.000	38.839	67.823
dgestat	114.8624	0.847	135.562	0.000	113.202	116.523
csex	139.1570	2.729	50.990	0.000	133.808	144.506
plur_1	566.7788	9.832	57.648	0.000	547.509	586.049

Omnibus:	1331.477	Durbin-Watson:	1.963
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2305.720
Skew:	0.052	Prob(JB):	0.00
Kurtosis:	3.687	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

adeq_3.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.376
Model:	OLS	Adj. R-squared:	0.376
Method:	Least Squares	F-statistic:	1360.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:42	Log-Likelihood:	-8.6585e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1838.4602	82.470	-22.292	0.000	-2000.098	-1676.822
tobacco	-210.7387	4.063	-51.872	0.000	-218.701	-202.776
alcohol	-68.0353	14.682	-4.634	0.000	-96.812	-39.259
mrace3_2	-189.4169	9.348	-20.263	0.000	-207.738	-171.096
mrace3_3	-144.3704	4.987	-28.950	0.000	-154.144	-134.596

ormothhis	-99.0068	7.792	-12.705	0.000	-114.280	-83.734
adeq_2.0	-34.0993	3.550	-9.605	0.000	-41.058	-27.141
cardiac	-24.9532	16.625	-1.501	0.133	-57.538	7.632
pre4000	392.3627	12.171	32.238	0.000	368.508	416.217
phyper	-90.9983	9.374	-9.708	0.000	-109.371	-72.626
diabetes	148.5957	10.020	14.830	0.000	128.958	168.234
anemia	9.9201	13.675	0.725	0.468	-16.882	36.722
lung	-21.6428	16.425	-1.318	0.188	-53.835	10.550
dlivord	22.2604	2.773	8.029	0.000	16.826	27.695
educ_0.0	-36.1227	75.800	-0.477	0.634	-184.689	112.444
educ_1.0	-30.9933	75.365	-0.411	0.681	-178.706	116.719
educ_2.0	-0.1636	75.374	-0.002	0.998	-147.895	147.567
dmage	1.1430	0.333	3.436	0.001	0.491	1.795
dmar	45.5557	4.225	10.781	0.000	37.274	53.837
tot_2.0	12.3422	5.113	2.414	0.016	2.321	22.363
tot_3.0	9.9790	5.978	1.669	0.095	-1.738	21.696
tot_4.0	11.4046	7.253	1.572	0.116	-2.811	25.620
tot_5.0	-6.9366	9.162	-0.757	0.449	-24.893	11.020
tot_6.0	-6.7742	12.398	-0.546	0.585	-31.073	17.525
tot_7.0	-24.9236	16.685	-1.494	0.135	-57.626	7.779
tot_8.0	-47.2656	19.694	-2.400	0.016	-85.865	-8.666
live_1.0	-15.3991	17.492	-0.880	0.379	-49.682	18.884
live_2.0	-53.4355	18.968	-2.817	0.005	-90.611	-16.260
live_3.0	48.8772	8.295	5.892	0.000	32.619	65.135
live_4.0	93.2018	7.504	12.421	0.000	78.495	107.909
live_5.0	98.6570	6.639	14.861	0.000	85.646	111.668
live_6.0	91.4448	7.015	13.036	0.000	77.696	105.193
live_7.0	89.0127	7.962	11.180	0.000	73.408	104.617
live_8.0	68.2063	9.102	7.494	0.000	50.367	86.046
live_9.0	55.0791	7.386	7.457	0.000	40.602	69.556
dgestat	114.9601	0.846	135.829	0.000	113.301	116.619
csex	139.4004	2.729	51.085	0.000	134.052	144.749
plur_1	568.5074	9.840	57.776	0.000	549.222	587.793

Omnibus:	1337.661	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2314.413
Skew:	0.054	Prob(JB):	0.00
Kurtosis:	3.688	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

cardiac

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
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Model:                      OLS      Adj. R-squared:      0.377
Method:                    Least Squares  F-statistic:      1362.
Date:                      Sun, 01 Oct 2023  Prob (F-statistic):      0.00
Time:                      12:50:42    Log-Likelihood:      -8.6579e+05
No. Observations:          114610      AIC:      1.732e+06
Df Residuals:              114572      BIC:      1.732e+06
Df Model:                  37
Covariance Type:           HCO

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1815.9311	82.658	-21.969	0.000	-1977.938	-1653.924
tobacco	-209.5740	4.061	-51.603	0.000	-217.534	-201.614
alcohol	-60.2899	14.649	-4.116	0.000	-89.001	-31.579
mrace3_2	-185.3716	9.358	-19.809	0.000	-203.713	-167.031
mrace3_3	-139.7575	5.002	-27.939	0.000	-149.562	-129.953
ormothhis	-97.1518	7.790	-12.472	0.000	-112.419	-81.885
adeq_2.0	-41.1059	3.598	-11.424	0.000	-48.158	-34.054
adeq_3.0	-76.9755	7.406	-10.393	0.000	-91.492	-62.459
pre4000	391.9152	12.162	32.224	0.000	368.078	415.753
phyper	-91.0639	9.363	-9.726	0.000	-109.415	-72.712
diabetes	147.5717	10.007	14.747	0.000	127.958	167.185
anemia	11.7558	13.707	0.858	0.391	-15.109	38.621
lung	-22.8052	16.403	-1.390	0.164	-54.955	9.344
dlivord	24.7617	2.782	8.900	0.000	19.309	30.215
educ_0.0	-35.8754	75.953	-0.472	0.637	-184.741	112.990
educ_1.0	-41.7678	75.542	-0.553	0.580	-189.826	106.291
educ_2.0	-11.6461	75.553	-0.154	0.877	-159.728	136.436
dmage	0.9530	0.333	2.862	0.004	0.300	1.606
dmarr	41.7814	4.232	9.873	0.000	33.487	50.076
tot_2.0	11.9710	5.111	2.342	0.019	1.953	21.989
tot_3.0	9.0275	5.977	1.510	0.131	-2.687	20.742
tot_4.0	10.0876	7.251	1.391	0.164	-4.125	24.300
tot_5.0	-8.1429	9.158	-0.889	0.374	-26.091	9.806
tot_6.0	-8.1052	12.400	-0.654	0.513	-32.409	16.198
tot_7.0	-25.5864	16.663	-1.535	0.125	-58.246	7.073
tot_8.0	-47.4428	19.675	-2.411	0.016	-86.006	-8.880
live_1.0	-18.4307	17.480	-1.054	0.292	-52.690	15.829
live_2.0	-45.6000	18.981	-2.402	0.016	-82.802	-8.398
live_3.0	53.0704	8.296	6.397	0.000	36.810	69.331
live_4.0	93.6128	7.502	12.479	0.000	78.910	108.315
live_5.0	97.6514	6.639	14.708	0.000	84.639	110.664
live_6.0	89.6877	7.015	12.785	0.000	75.939	103.437
live_7.0	86.8054	7.961	10.903	0.000	71.201	102.409
live_8.0	65.5767	9.102	7.205	0.000	47.738	83.416
live_9.0	52.4966	7.388	7.105	0.000	38.016	66.978
dgestat	114.8379	0.847	135.604	0.000	113.178	116.498
csex	139.2248	2.727	51.045	0.000	133.879	144.571

plur_1	569.6308	9.835	57.916	0.000	550.354	588.908
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Omnibus:	1327.221	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2284.999
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

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Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

pre4000

OLS Regression Results

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Dep. Variable:	dbrwt	R-squared:	0.371
Model:	OLS	Adj. R-squared:	0.371
Method:	Least Squares	F-statistic:	1321.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:42	Log-Likelihood:	-8.6636e+05
No. Observations:	114610	AIC:	1.733e+06
Df Residuals:	114572	BIC:	1.733e+06
Df Model:	37		
Covariance Type:	HCO		

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1845.5763	83.079	-22.215	0.000	-2008.409	-1682.744
tobacco	-213.0772	4.073	-52.309	0.000	-221.061	-205.093
alcohol	-60.7551	14.683	-4.138	0.000	-89.534	-31.976
mrace3_2	-189.0615	9.399	-20.114	0.000	-207.484	-170.639
mrace3_3	-143.2804	5.018	-28.555	0.000	-153.115	-133.446
ormothhis	-99.4228	7.834	-12.691	0.000	-114.778	-84.068
adeq_2.0	-39.7242	3.616	-10.985	0.000	-46.812	-32.637
adeq_3.0	-77.6353	7.443	-10.430	0.000	-92.224	-63.046
cardiac	-21.8547	16.649	-1.313	0.189	-54.486	10.776
phyper	-89.2777	9.404	-9.494	0.000	-107.709	-70.846
diabetes	156.5344	10.077	15.535	0.000	136.785	176.284
anemia	21.9446	13.744	1.597	0.110	-4.994	48.883
lung	-17.1859	16.540	-1.039	0.299	-49.603	15.231
dlivord	28.4323	2.818	10.090	0.000	22.909	33.955
educ_0.0	-20.2077	76.414	-0.264	0.791	-169.976	129.560
educ_1.0	-32.4305	75.996	-0.427	0.670	-181.380	116.519
educ_2.0	-1.4597	76.008	-0.019	0.985	-150.433	147.513
dmage	0.9195	0.334	2.749	0.006	0.264	1.575
dmarr	42.9236	4.248	10.105	0.000	34.598	51.249
tot_2.0	12.2812	5.114	2.402	0.016	2.258	22.304
tot_3.0	10.0550	5.990	1.679	0.093	-1.684	21.794

tot_4.0	11.9071	7.284	1.635	0.102	-2.370	26.184
tot_5.0	-7.1439	9.223	-0.775	0.439	-25.221	10.933
tot_6.0	-10.2786	12.488	-0.823	0.410	-34.755	14.197
tot_7.0	-24.4753	16.830	-1.454	0.146	-57.461	8.511
tot_8.0	-43.7301	19.886	-2.199	0.028	-82.705	-4.755
live_1.0	-22.4991	17.563	-1.281	0.200	-56.922	11.923
live_2.0	-42.5549	19.086	-2.230	0.026	-79.963	-5.147
live_3.0	54.9901	8.366	6.573	0.000	38.593	71.387
live_4.0	97.5859	7.561	12.906	0.000	82.766	112.406
live_5.0	100.8717	6.685	15.089	0.000	87.769	113.974
live_6.0	93.5008	7.063	13.238	0.000	79.657	107.344
live_7.0	89.8831	8.005	11.228	0.000	74.193	105.573
live_8.0	67.4629	9.137	7.383	0.000	49.555	85.371
live_9.0	54.9861	7.437	7.394	0.000	40.410	69.562
dgestat	115.2764	0.847	136.031	0.000	113.615	116.937
csex	139.7327	2.741	50.978	0.000	134.360	145.105
plur_1	568.7427	9.891	57.500	0.000	549.356	588.129

Omnibus:	1355.306	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2314.774
Skew:	0.068	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

phyper

OLS Regression Results

Dep. Variable:	dbrrwt	R-squared:	0.376
Model:	OLS	Adj. R-squared:	0.376
Method:	Least Squares	F-statistic:	1359.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:43	Log-Likelihood:	-8.6585e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1835.7630	82.997	-22.118	0.000	-1998.434	-1673.092
tobacco	-208.6272	4.060	-51.382	0.000	-216.585	-200.669
alcohol	-59.4887	14.675	-4.054	0.000	-88.252	-30.725
mrace3_2	-183.9918	9.362	-19.653	0.000	-202.341	-165.643
mrace3_3	-140.0111	5.007	-27.965	0.000	-149.824	-130.198

ormothhis	-96.5080	7.792	-12.385	0.000	-111.781	-81.235
adeq_2.0	-40.8652	3.601	-11.349	0.000	-47.923	-33.808
adeq_3.0	-77.0198	7.416	-10.386	0.000	-91.554	-62.485
cardiac	-26.6855	16.612	-1.606	0.108	-59.244	5.873
pre4000	391.1996	12.157	32.178	0.000	367.372	415.028
diabetes	144.6538	10.006	14.457	0.000	125.043	164.264
anemia	10.8458	13.717	0.791	0.429	-16.038	37.730
lung	-23.9158	16.358	-1.462	0.144	-55.976	8.145
dlivord	24.8599	2.782	8.937	0.000	19.408	30.312
educ_0.0	-34.3296	76.353	-0.450	0.653	-183.979	115.320
educ_1.0	-40.5979	75.943	-0.535	0.593	-189.444	108.248
educ_2.0	-10.1038	75.956	-0.133	0.894	-158.974	138.767
dmage	0.9362	0.333	2.810	0.005	0.283	1.589
dmarr	41.4325	4.233	9.787	0.000	33.135	49.730
tot_2.0	12.0569	5.114	2.358	0.018	2.035	22.079
tot_3.0	9.4440	5.980	1.579	0.114	-2.277	21.165
tot_4.0	10.4138	7.257	1.435	0.151	-3.809	24.637
tot_5.0	-7.9587	9.165	-0.868	0.385	-25.922	10.005
tot_6.0	-7.7896	12.406	-0.628	0.530	-32.105	16.526
tot_7.0	-25.4462	16.667	-1.527	0.127	-58.112	7.220
tot_8.0	-47.3109	19.671	-2.405	0.016	-85.864	-8.757
live_1.0	-16.8758	17.475	-0.966	0.334	-51.127	17.375
live_2.0	-42.8328	18.967	-2.258	0.024	-80.008	-5.657
live_3.0	55.6868	8.292	6.716	0.000	39.435	71.939
live_4.0	96.2984	7.498	12.843	0.000	81.602	110.994
live_5.0	100.3523	6.636	15.122	0.000	87.346	113.359
live_6.0	92.1949	7.014	13.145	0.000	78.448	105.942
live_7.0	89.0032	7.962	11.179	0.000	73.398	104.608
live_8.0	67.5423	9.106	7.418	0.000	49.696	85.389
live_9.0	53.8392	7.392	7.283	0.000	39.351	68.327
dgestat	115.1336	0.846	136.017	0.000	113.475	116.793
csex	139.2152	2.729	51.013	0.000	133.866	144.564
plur_1	572.9022	9.819	58.347	0.000	553.658	592.147

Omnibus:	1331.712	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2312.994
Skew:	0.049	Prob(JB):	0.00
Kurtosis:	3.689	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

diabetes

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.375
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Model:                OLS      Adj. R-squared:      0.375
Method:               Least Squares      F-statistic:      1354.
Date:                 Sun, 01 Oct 2023      Prob (F-statistic):      0.00
Time:                 12:50:43      Log-Likelihood:      -8.6594e+05
No. Observations:      114610      AIC:      1.732e+06
Df Residuals:          114572      BIC:      1.732e+06
Df Model:              37
Covariance Type:      HCO

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1809.4199	81.649	-22.161	0.000	-1969.449	-1649.391
tobacco	-209.3756	4.070	-51.449	0.000	-217.352	-201.399
alcohol	-61.6163	14.639	-4.209	0.000	-90.308	-32.925
mrace3_2	-183.7001	9.336	-19.676	0.000	-201.999	-165.401
mrace3_3	-139.0550	5.016	-27.721	0.000	-148.887	-129.223
ormothhis	-95.4023	7.809	-12.217	0.000	-110.707	-80.098
adeq_2.0	-41.9335	3.598	-11.654	0.000	-48.986	-34.881
adeq_3.0	-78.3402	7.410	-10.572	0.000	-92.864	-63.816
cardiac	-25.2080	16.638	-1.515	0.130	-57.817	7.401
pre4000	398.2587	12.175	32.712	0.000	374.397	422.120
phyper	-86.7985	9.393	-9.241	0.000	-105.209	-68.388
anemia	12.7683	13.712	0.931	0.352	-14.106	39.643
lung	-20.0486	16.417	-1.221	0.222	-52.226	12.129
dlivord	24.1386	2.786	8.666	0.000	18.679	29.598
educ_0.0	-35.2976	74.815	-0.472	0.637	-181.933	111.338
educ_1.0	-40.4030	74.396	-0.543	0.587	-186.216	105.410
educ_2.0	-11.7352	74.408	-0.158	0.875	-157.572	134.102
dmage	1.2781	0.333	3.841	0.000	0.626	1.930
dmarr	41.6072	4.239	9.815	0.000	33.299	49.916
tot_2.0	12.1230	5.114	2.370	0.018	2.099	22.147
tot_3.0	9.5090	5.983	1.589	0.112	-2.218	21.236
tot_4.0	11.1052	7.260	1.530	0.126	-3.124	25.335
tot_5.0	-6.6733	9.166	-0.728	0.467	-24.638	11.292
tot_6.0	-5.3408	12.415	-0.430	0.667	-29.673	18.992
tot_7.0	-23.4415	16.718	-1.402	0.161	-56.207	9.324
tot_8.0	-43.9520	19.679	-2.233	0.026	-82.522	-5.382
live_1.0	-17.1053	17.477	-0.979	0.328	-51.359	17.148
live_2.0	-44.1910	19.039	-2.321	0.020	-81.507	-6.875
live_3.0	52.7421	8.300	6.355	0.000	36.475	69.009
live_4.0	92.7158	7.507	12.351	0.000	78.003	107.428
live_5.0	96.7006	6.645	14.552	0.000	83.677	109.725
live_6.0	89.3582	7.021	12.727	0.000	75.597	103.119
live_7.0	86.6703	7.974	10.870	0.000	71.042	102.298
live_8.0	66.0745	9.116	7.248	0.000	48.207	83.942
live_9.0	54.1754	7.399	7.322	0.000	39.673	68.678
dgestat	114.5370	0.848	135.080	0.000	112.875	116.199
csex	139.5090	2.731	51.085	0.000	134.156	144.861

plur_1	570.0268	9.826	58.012	0.000	550.768	589.286
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Omnibus:	1382.205	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2382.600
Skew:	0.066	Prob(JB):	0.00
Kurtosis:	3.694	Cond. No.	5.72e+03

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Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

anemia

OLS Regression Results

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Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:43	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1815.1615	82.525	-21.995	0.000	-1976.907	-1653.416
tobacco	-209.5729	4.061	-51.603	0.000	-217.533	-201.613
alcohol	-60.2492	14.647	-4.113	0.000	-88.958	-31.541
mrace3_2	-185.4586	9.359	-19.815	0.000	-203.803	-167.115
mrace3_3	-139.7005	5.001	-27.933	0.000	-149.503	-129.898
ormothhis	-96.9618	7.789	-12.449	0.000	-112.227	-81.696
adeq_2.0	-41.0584	3.598	-11.413	0.000	-48.110	-34.007
adeq_3.0	-76.9304	7.405	-10.389	0.000	-91.444	-62.417
cardiac	-25.4532	16.609	-1.532	0.125	-58.006	7.100
pre4000	392.2510	12.156	32.269	0.000	368.426	416.076
phyper	-90.9425	9.363	-9.713	0.000	-109.293	-72.592
diabetes	147.6145	10.007	14.752	0.000	128.002	167.227
lung	-22.0256	16.388	-1.344	0.179	-54.146	10.095
dlivord	24.7669	2.782	8.904	0.000	19.315	30.219
educ_0.0	-35.8421	75.787	-0.473	0.636	-184.382	112.698
educ_1.0	-41.8081	75.378	-0.555	0.579	-189.547	105.931
educ_2.0	-11.6627	75.391	-0.155	0.877	-159.425	136.100
dmage	0.9503	0.333	2.854	0.004	0.298	1.603
dmarr	41.7344	4.231	9.864	0.000	33.442	50.027
tot_2.0	11.9839	5.112	2.344	0.019	1.965	22.002
tot_3.0	9.0415	5.977	1.513	0.130	-2.674	20.757

tot_4.0	10.1340	7.252	1.397	0.162	-4.080	24.348
tot_5.0	-8.1165	9.157	-0.886	0.375	-26.064	9.831
tot_6.0	-8.0011	12.398	-0.645	0.519	-32.302	16.299
tot_7.0	-25.5372	16.665	-1.532	0.125	-58.199	7.125
tot_8.0	-47.2511	19.670	-2.402	0.016	-85.804	-8.698
live_1.0	-18.3872	17.477	-1.052	0.293	-52.642	15.868
live_2.0	-45.3165	18.978	-2.388	0.017	-82.512	-8.121
live_3.0	53.0697	8.296	6.397	0.000	36.810	69.330
live_4.0	93.6239	7.501	12.482	0.000	78.923	108.325
live_5.0	97.6042	6.639	14.701	0.000	84.592	110.617
live_6.0	89.6547	7.015	12.781	0.000	75.906	103.404
live_7.0	86.7764	7.961	10.900	0.000	71.173	102.380
live_8.0	65.5607	9.102	7.203	0.000	47.721	83.400
live_9.0	52.5022	7.388	7.107	0.000	38.023	66.982
dgestat	114.8282	0.847	135.586	0.000	113.168	116.488
csex	139.2183	2.727	51.044	0.000	133.873	144.564
plur_1	569.6147	9.834	57.922	0.000	550.340	588.889

Omnibus:	1326.913	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2284.459
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

lung

OLS Regression Results

Dep. Variable:	dbrrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:43	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1816.6343	82.594	-21.995	0.000	-1978.516	-1654.753
tobacco	-209.6200	4.061	-51.615	0.000	-217.580	-201.660
alcohol	-60.2489	14.652	-4.112	0.000	-88.966	-31.532
mrace3_2	-185.5096	9.359	-19.822	0.000	-203.852	-167.167
mrace3_3	-139.7737	5.003	-27.940	0.000	-149.579	-129.969

ormothhis	-97.4430	7.788	-12.511	0.000	-112.708	-82.178
adeq_2.0	-41.0971	3.598	-11.422	0.000	-48.149	-34.045
adeq_3.0	-76.9841	7.407	-10.394	0.000	-91.501	-62.468
cardiac	-26.1543	16.618	-1.574	0.116	-58.724	6.415
pre4000	391.8892	12.159	32.231	0.000	368.059	415.720
phyper	-91.0953	9.362	-9.731	0.000	-109.444	-72.747
diabetes	147.4999	10.006	14.741	0.000	127.888	167.111
anemia	11.7434	13.708	0.857	0.392	-15.124	38.610
dlivord	24.7657	2.782	8.902	0.000	19.313	30.218
educ_0.0	-35.3000	75.886	-0.465	0.642	-184.034	113.434
educ_1.0	-41.1863	75.474	-0.546	0.585	-189.113	106.741
educ_2.0	-11.0261	75.486	-0.146	0.884	-158.977	136.925
dmage	0.9614	0.333	2.888	0.004	0.309	1.614
dmar	41.8575	4.231	9.892	0.000	33.564	50.151
tot_2.0	11.9549	5.111	2.339	0.019	1.937	21.973
tot_3.0	8.9840	5.977	1.503	0.133	-2.730	20.698
tot_4.0	10.0741	7.252	1.389	0.165	-4.139	24.287
tot_5.0	-8.2579	9.158	-0.902	0.367	-26.207	9.691
tot_6.0	-8.1875	12.399	-0.660	0.509	-32.488	16.113
tot_7.0	-25.7447	16.665	-1.545	0.122	-58.408	6.919
tot_8.0	-47.5922	19.672	-2.419	0.016	-86.148	-9.036
live_1.0	-18.3480	17.478	-1.050	0.294	-52.605	15.909
live_2.0	-45.3707	18.979	-2.391	0.017	-82.569	-8.173
live_3.0	53.0292	8.296	6.392	0.000	36.769	69.289
live_4.0	93.6415	7.501	12.484	0.000	78.940	108.343
live_5.0	97.6299	6.639	14.706	0.000	84.618	110.642
live_6.0	89.6502	7.015	12.780	0.000	75.902	103.399
live_7.0	86.7486	7.961	10.897	0.000	71.146	102.352
live_8.0	65.5557	9.102	7.202	0.000	47.716	83.396
live_9.0	52.4938	7.388	7.105	0.000	38.013	66.974
dgestat	114.8342	0.847	135.590	0.000	113.174	116.494
csex	139.2432	2.727	51.052	0.000	133.897	144.589
plur_1	569.6449	9.834	57.926	0.000	550.370	588.919

Omnibus:	1327.110	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2284.744
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

dlivord

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
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Model:                      OLS      Adj. R-squared:      0.376
Method:                     Least Squares      F-statistic:      1358.
Date:                       Sun, 01 Oct 2023      Prob (F-statistic):      0.00
Time:                       12:50:43      Log-Likelihood:      -8.6583e+05
No. Observations:          114610      AIC:      1.732e+06
Df Residuals:              114572      BIC:      1.732e+06
Df Model:                   37
Covariance Type:           HCO

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	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-1790.7407	82.300	-21.759	0.000	-1952.046	-1629.436
tobacco	-209.7950	4.061	-51.656	0.000	-217.755	-201.835
alcohol	-61.1115	14.662	-4.168	0.000	-89.849	-32.374
mrace3_2	-186.4172	9.368	-19.899	0.000	-204.778	-168.056
mrace3_3	-140.0332	5.005	-27.978	0.000	-149.843	-130.223
ormothhis	-96.7058	7.792	-12.411	0.000	-111.977	-81.434
adeq_2.0	-39.5074	3.595	-10.988	0.000	-46.554	-32.461
adeq_3.0	-71.5296	7.387	-9.684	0.000	-86.007	-57.052
cardiac	-25.9560	16.609	-1.563	0.118	-58.510	6.598
pre4000	396.3136	12.133	32.665	0.000	372.534	420.093
phyper	-91.2505	9.368	-9.741	0.000	-109.611	-72.890
diabetes	146.5650	10.020	14.628	0.000	126.927	166.203
anemia	12.7778	13.697	0.933	0.351	-14.069	39.624
lung	-22.7497	16.415	-1.386	0.166	-54.922	9.423
educ_0.0	-39.3723	75.625	-0.521	0.603	-187.595	108.850
educ_1.0	-54.6142	75.189	-0.726	0.468	-201.981	92.753
educ_2.0	-26.8215	75.193	-0.357	0.721	-174.197	120.554
dmage	1.3099	0.331	3.958	0.000	0.661	1.959
dmarr	41.3860	4.234	9.775	0.000	33.088	49.684
tot_2.0	6.8907	5.084	1.355	0.175	-3.074	16.855
tot_3.0	15.9692	5.924	2.696	0.007	4.358	27.580
tot_4.0	29.4302	6.934	4.244	0.000	15.839	43.021
tot_5.0	22.9845	8.465	2.715	0.007	6.393	39.576
tot_6.0	37.3591	11.398	3.278	0.001	15.020	59.698
tot_7.0	34.7745	15.106	2.302	0.021	5.167	64.382
tot_8.0	51.9602	15.992	3.249	0.001	20.616	83.304
live_1.0	17.1804	17.042	1.008	0.313	-16.221	50.582
live_2.0	-11.3950	18.604	-0.613	0.540	-47.858	25.068
live_3.0	86.7803	7.430	11.680	0.000	72.218	101.343
live_4.0	126.3175	6.566	19.237	0.000	113.448	139.187
live_5.0	128.7036	5.676	22.673	0.000	117.578	139.829
live_6.0	119.1235	6.209	19.186	0.000	106.955	131.292
live_7.0	115.6265	7.269	15.908	0.000	101.380	129.873
live_8.0	93.9449	8.524	11.021	0.000	77.238	110.652
live_9.0	79.1040	6.771	11.682	0.000	65.832	92.376
dgestat	114.9594	0.848	135.617	0.000	113.298	116.621
csex	139.3341	2.728	51.068	0.000	133.987	144.682

plur_1	569.1497	9.844	57.819	0.000	549.857	588.443
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Omnibus:	1329.614	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2288.836
Skew:	0.057	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.71e+03

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Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.71e+03. This might indicate that there are strong multicollinearity or other numerical problems.

educ_0.0

OLS Regression Results

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Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:44	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

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	coef	std err	z	P> z	[0.025	0.975]
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const	-1851.1880	34.693	-53.359	0.000	-1919.185	-1783.191
tobacco	-209.5931	4.061	-51.608	0.000	-217.553	-201.633
alcohol	-60.2036	14.648	-4.110	0.000	-88.914	-31.493
mrace3_2	-185.2612	9.354	-19.805	0.000	-203.595	-166.927
mrace3_3	-139.8015	5.002	-27.947	0.000	-149.606	-129.997
ormothhis	-97.1763	7.789	-12.477	0.000	-112.442	-81.911
adeq_2.0	-41.1126	3.598	-11.426	0.000	-48.165	-34.060
adeq_3.0	-77.0214	7.406	-10.400	0.000	-91.537	-62.506
cardiac	-25.6978	16.613	-1.547	0.122	-58.259	6.863
pre4000	392.0090	12.160	32.239	0.000	368.177	415.841
phyper	-90.9932	9.363	-9.718	0.000	-109.345	-72.642
diabetes	147.5926	10.007	14.750	0.000	127.980	167.205
anemia	12.1135	13.707	0.884	0.377	-14.752	38.979
lung	-22.2669	16.398	-1.358	0.175	-54.407	9.873
dlivord	24.7602	2.782	8.901	0.000	19.308	30.212
educ_1.0	-6.2865	9.460	-0.665	0.506	-24.828	12.255
educ_2.0	23.8646	9.645	2.474	0.013	4.961	42.769
dmage	0.9571	0.333	2.875	0.004	0.305	1.610
dmarr	41.7840	4.232	9.874	0.000	33.490	50.078
tot_2.0	11.9864	5.112	2.345	0.019	1.968	22.005
tot_3.0	9.0369	5.977	1.512	0.131	-2.678	20.752

tot_4.0	10.1316	7.252	1.397	0.162	-4.082	24.345
tot_5.0	-8.1232	9.157	-0.887	0.375	-26.071	9.825
tot_6.0	-8.0322	12.399	-0.648	0.517	-32.334	16.270
tot_7.0	-25.5121	16.664	-1.531	0.126	-58.174	7.149
tot_8.0	-47.3741	19.670	-2.408	0.016	-85.927	-8.821
live_1.0	-18.4453	17.480	-1.055	0.291	-52.705	15.814
live_2.0	-45.5062	18.978	-2.398	0.016	-82.703	-8.310
live_3.0	53.0497	8.295	6.395	0.000	36.791	69.308
live_4.0	93.5743	7.501	12.476	0.000	78.873	108.275
live_5.0	97.5898	6.639	14.700	0.000	84.578	110.602
live_6.0	89.6337	7.015	12.778	0.000	75.885	103.383
live_7.0	86.7456	7.961	10.896	0.000	71.142	102.349
live_8.0	65.5514	9.102	7.202	0.000	47.712	83.390
live_9.0	52.4836	7.388	7.104	0.000	38.004	66.963
dgestat	114.8320	0.847	135.589	0.000	113.172	116.492
csex	139.2363	2.727	51.051	0.000	133.891	144.582
plur_1	569.6919	9.835	57.927	0.000	550.416	588.967

Omnibus:	1327.118	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2284.787
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	981.

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

educ_1.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:44	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1857.4532	33.571	-55.329	0.000	-1923.251	-1791.655
tobacco	-209.6054	4.061	-51.612	0.000	-217.565	-201.646
alcohol	-60.2131	14.648	-4.111	0.000	-88.923	-31.503
mrace3_2	-185.2019	9.354	-19.800	0.000	-203.535	-166.869
mrace3_3	-139.8142	5.002	-27.949	0.000	-149.619	-130.010
ormothhis	-97.1407	7.788	-12.474	0.000	-112.404	-81.877
adeq_2.0	-41.0960	3.598	-11.422	0.000	-48.148	-34.044

adeq_3.0	-76.9763	7.404	-10.396	0.000	-91.489	-62.464
cardiac	-25.7010	16.613	-1.547	0.122	-58.262	6.860
pre4000	392.0178	12.160	32.240	0.000	368.186	415.850
phyper	-90.9941	9.363	-9.718	0.000	-109.346	-72.643
diabetes	147.5901	10.006	14.749	0.000	127.978	167.202
anemia	12.1252	13.707	0.885	0.376	-14.741	38.991
lung	-22.2636	16.399	-1.358	0.175	-54.404	9.877
dlivord	24.7787	2.781	8.910	0.000	19.328	30.229
educ_0.0	5.7871	9.511	0.608	0.543	-12.854	24.428
educ_2.0	30.1310	3.104	9.706	0.000	24.047	36.215
dmage	0.9561	0.333	2.872	0.004	0.304	1.609
dmar	41.7950	4.231	9.877	0.000	33.502	50.088
tot_2.0	11.9864	5.112	2.345	0.019	1.968	22.005
tot_3.0	9.0305	5.977	1.511	0.131	-2.684	20.745
tot_4.0	10.1200	7.252	1.396	0.163	-4.093	24.333
tot_5.0	-8.1323	9.157	-0.888	0.375	-26.080	9.816
tot_6.0	-8.0409	12.399	-0.649	0.517	-32.343	16.261
tot_7.0	-25.5132	16.664	-1.531	0.126	-58.175	7.148
tot_8.0	-47.3649	19.671	-2.408	0.016	-85.920	-8.810
live_1.0	-18.4763	17.479	-1.057	0.290	-52.735	15.782
live_2.0	-45.5306	18.978	-2.399	0.016	-82.727	-8.334
live_3.0	53.0355	8.296	6.393	0.000	36.776	69.295
live_4.0	93.5556	7.500	12.474	0.000	78.856	108.256
live_5.0	97.5702	6.638	14.698	0.000	84.559	110.581
live_6.0	89.6102	7.014	12.775	0.000	75.862	103.358
live_7.0	86.7195	7.961	10.894	0.000	71.117	102.322
live_8.0	65.5254	9.101	7.199	0.000	47.687	83.364
live_9.0	52.4633	7.387	7.102	0.000	37.984	66.942
dgestat	114.8320	0.847	135.589	0.000	113.172	116.492
csex	139.2372	2.727	51.052	0.000	133.892	144.583
plur_1	569.6880	9.835	57.927	0.000	550.412	588.964

Omnibus:	1327.096	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2284.760
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	926.

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

educ_2.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:44	Log-Likelihood:	-8.6579e+05

No. Observations: 114610 AIC: 1.732e+06
Df Residuals: 114572 BIC: 1.732e+06
Df Model: 37
Covariance Type: HCO

	coef	std err	z	P> z	[0.025	0.975]
const	-1827.2517	33.809	-54.046	0.000	-1893.516	-1760.987
tobacco	-209.5905	4.061	-51.607	0.000	-217.550	-201.631
alcohol	-60.2028	14.648	-4.110	0.000	-88.913	-31.493
mrace3_2	-185.4264	9.353	-19.825	0.000	-203.759	-167.094
mrace3_3	-139.8102	5.002	-27.948	0.000	-149.615	-130.006
ormothhis	-97.1753	7.788	-12.478	0.000	-112.439	-81.911
adeq_2.0	-41.1036	3.598	-11.425	0.000	-48.155	-34.052
adeq_3.0	-77.0074	7.404	-10.400	0.000	-91.519	-62.495
cardiac	-25.6968	16.613	-1.547	0.122	-58.258	6.864
pre4000	392.0319	12.160	32.241	0.000	368.200	415.864
phyper	-90.9971	9.363	-9.719	0.000	-109.349	-72.645
diabetes	147.5942	10.007	14.750	0.000	127.981	167.207
anemia	12.1154	13.709	0.884	0.377	-14.755	38.985
lung	-22.2896	16.398	-1.359	0.174	-54.429	9.850
dlivord	24.7624	2.781	8.905	0.000	19.312	30.213
educ_0.0	-24.3291	9.696	-2.509	0.012	-43.332	-5.326
educ_1.0	-30.1695	3.104	-9.720	0.000	-36.253	-24.086
dmage	0.9548	0.333	2.868	0.004	0.302	1.607
dmarr	41.7885	4.232	9.875	0.000	33.494	50.083
tot_2.0	11.9867	5.111	2.345	0.019	1.968	22.005
tot_3.0	9.0367	5.977	1.512	0.131	-2.678	20.752
tot_4.0	10.1363	7.252	1.398	0.162	-4.077	24.350
tot_5.0	-8.1274	9.157	-0.888	0.375	-26.075	9.820
tot_6.0	-8.0291	12.399	-0.648	0.517	-32.331	16.273
tot_7.0	-25.5090	16.664	-1.531	0.126	-58.170	7.152
tot_8.0	-47.3025	19.671	-2.405	0.016	-85.858	-8.747
live_1.0	-18.4518	17.479	-1.056	0.291	-52.710	15.807
live_2.0	-45.5232	18.978	-2.399	0.016	-82.719	-8.328
live_3.0	53.0252	8.296	6.392	0.000	36.766	69.285
live_4.0	93.5841	7.500	12.478	0.000	78.884	108.284
live_5.0	97.5890	6.638	14.701	0.000	84.578	110.600
live_6.0	89.6345	7.014	12.779	0.000	75.887	103.383
live_7.0	86.7510	7.961	10.898	0.000	71.149	102.354
live_8.0	65.5508	9.101	7.202	0.000	47.712	83.389
live_9.0	52.4859	7.388	7.105	0.000	38.006	66.965
dgestat	114.8323	0.847	135.590	0.000	113.172	116.492
csex	139.2331	2.727	51.050	0.000	133.888	144.579
plur_1	569.6796	9.835	57.926	0.000	550.404	588.955

Omnibus: 1327.159 Durbin-Watson: 1.962
Prob(Omnibus): 0.000 Jarque-Bera (JB): 2284.870

Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	936.

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

dmage

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:44	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1791.0232	82.207	-21.787	0.000	-1952.145	-1629.901
tobacco	-210.0408	4.056	-51.787	0.000	-217.990	-202.091
alcohol	-58.4537	14.629	-3.996	0.000	-87.127	-29.781
mrace3_2	-185.1093	9.360	-19.777	0.000	-203.454	-166.764
mrace3_3	-141.0484	4.983	-28.306	0.000	-150.815	-131.282
ormothhis	-98.6729	7.776	-12.689	0.000	-113.915	-83.431
adeq_2.0	-41.7479	3.593	-11.620	0.000	-48.789	-34.706
adeq_3.0	-78.1043	7.396	-10.560	0.000	-92.600	-63.608
cardiac	-25.5009	16.610	-1.535	0.125	-58.057	7.055
pre4000	391.9297	12.159	32.232	0.000	368.098	415.762
phyper	-90.8812	9.362	-9.708	0.000	-109.230	-72.532
diabetes	149.0084	9.986	14.922	0.000	129.436	168.581
anemia	11.4525	13.708	0.835	0.403	-15.415	38.320
lung	-22.9727	16.401	-1.401	0.161	-55.118	9.173
dlivord	25.6841	2.765	9.290	0.000	20.265	31.103
educ_0.0	-39.2560	75.902	-0.517	0.605	-188.022	109.510
educ_1.0	-43.1458	75.489	-0.572	0.568	-191.101	104.810
educ_2.0	-10.3119	75.489	-0.137	0.891	-158.267	137.644
dmarr	45.8408	3.975	11.531	0.000	38.049	53.632
tot_2.0	13.3287	5.089	2.619	0.009	3.354	23.304
tot_3.0	11.1016	5.935	1.871	0.061	-0.530	22.734
tot_4.0	12.7526	7.196	1.772	0.076	-1.352	26.857
tot_5.0	-5.0281	9.098	-0.553	0.580	-22.859	12.803
tot_6.0	-4.3077	12.335	-0.349	0.727	-28.485	19.869
tot_7.0	-21.5864	16.604	-1.300	0.194	-54.130	10.957
tot_8.0	-42.2908	19.589	-2.159	0.031	-80.685	-3.897
live_1.0	-20.4733	17.461	-1.173	0.241	-54.695	13.749

live_2.0	-48.1426	18.970	-2.538	0.011	-85.323	-10.962
live_3.0	50.7130	8.263	6.138	0.000	34.519	66.907
live_4.0	91.9410	7.484	12.285	0.000	77.273	106.609
live_5.0	96.6011	6.633	14.564	0.000	83.600	109.602
live_6.0	89.3497	7.015	12.737	0.000	75.600	103.099
live_7.0	87.1175	7.960	10.945	0.000	71.516	102.719
live_8.0	66.3972	9.097	7.299	0.000	48.567	84.227
live_9.0	55.5291	7.320	7.586	0.000	41.182	69.877
dgestat	114.7553	0.846	135.624	0.000	113.097	116.414
csex	139.2279	2.728	51.045	0.000	133.882	144.574
plur_1	569.0521	9.834	57.867	0.000	549.778	588.326

Omnibus:	1326.846	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2284.236
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.682	Cond. No.	4.66e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 4.66e+03. This might indicate that there are strong multicollinearity or other numerical problems.

dmr

OLS Regression Results

Dep. Variable:	dbrrwt	R-squared:	0.376
Model:	OLS	Adj. R-squared:	0.376
Method:	Least Squares	F-statistic:	1360.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:45	Log-Likelihood:	-8.6584e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1814.2453	82.690	-21.940	0.000	-1976.315	-1652.176
tobacco	-216.9022	4.000	-54.224	0.000	-224.742	-209.062
alcohol	-63.9624	14.692	-4.354	0.000	-92.757	-35.167
mrace3_2	-183.5279	9.356	-19.616	0.000	-201.865	-165.191
mrace3_3	-156.5003	4.685	-33.406	0.000	-165.682	-147.318
ormothhis	-107.0660	7.732	-13.848	0.000	-122.220	-91.912
adeq_2.0	-44.0507	3.590	-12.271	0.000	-51.087	-37.015
adeq_3.0	-83.1023	7.396	-11.237	0.000	-97.598	-68.607
cardiac	-25.4860	16.621	-1.533	0.125	-58.063	7.091
pre4000	393.0053	12.162	32.315	0.000	369.169	416.841
phyper	-90.3744	9.362	-9.654	0.000	-108.723	-72.026

diabetes	147.3710	10.008	14.726	0.000	127.756	166.986
anemia	9.9570	13.707	0.726	0.468	-16.908	36.822
lung	-24.3026	16.416	-1.480	0.139	-56.477	7.872
dlivord	24.4588	2.782	8.791	0.000	19.006	29.912
educ_0.0	-33.4222	76.022	-0.440	0.660	-182.422	115.578
educ_1.0	-43.9715	75.600	-0.582	0.561	-192.144	104.201
educ_2.0	-10.5647	75.619	-0.140	0.889	-158.775	137.646
dmage	2.0894	0.313	6.675	0.000	1.476	2.703
tot_2.0	11.5341	5.112	2.256	0.024	1.514	21.554
tot_3.0	7.8347	5.978	1.311	0.190	-3.881	19.551
tot_4.0	7.7799	7.252	1.073	0.283	-6.434	21.994
tot_5.0	-11.4675	9.151	-1.253	0.210	-29.404	6.469
tot_6.0	-12.5462	12.386	-1.013	0.311	-36.822	11.729
tot_7.0	-29.4938	16.656	-1.771	0.077	-62.138	3.151
tot_8.0	-53.4731	19.658	-2.720	0.007	-92.002	-14.944
live_1.0	-15.2452	17.481	-0.872	0.383	-49.508	19.017
live_2.0	-42.4260	18.986	-2.235	0.025	-79.637	-5.215
live_3.0	57.6635	8.285	6.960	0.000	41.425	73.902
live_4.0	98.7658	7.488	13.190	0.000	84.089	113.442
live_5.0	102.2424	6.625	15.433	0.000	89.257	115.227
live_6.0	93.5199	7.009	13.342	0.000	79.782	107.258
live_7.0	89.5852	7.958	11.257	0.000	73.988	105.183
live_8.0	67.6569	9.104	7.432	0.000	49.813	85.500
live_9.0	50.9280	7.389	6.892	0.000	36.446	65.410
dgestat	114.9154	0.847	135.667	0.000	113.255	116.576
csex	139.2526	2.729	51.033	0.000	133.904	144.601
plur_1	569.4144	9.835	57.896	0.000	550.138	588.691

Omnibus:	1306.157	Durbin-Watson:	1.961
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2243.225
Skew:	0.054	Prob(JB):	0.00
Kurtosis:	3.677	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

tot_2.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:45	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06

Df Model: 37
Covariance Type: HCO

	coef	std err	z	P> z	[0.025	0.975]
const	-1813.5144	82.705	-21.928	0.000	-1975.612	-1651.416
tobacco	-209.2094	4.058	-51.553	0.000	-217.163	-201.256
alcohol	-60.1035	14.652	-4.102	0.000	-88.821	-31.386
mrace3_2	-185.4967	9.361	-19.816	0.000	-203.844	-167.149
mrace3_3	-139.1960	4.994	-27.872	0.000	-148.984	-129.408
ormothhis	-97.1214	7.788	-12.470	0.000	-112.386	-81.857
adeq_2.0	-41.1867	3.598	-11.446	0.000	-48.239	-34.134
adeq_3.0	-77.1257	7.406	-10.413	0.000	-91.642	-62.609
cardiac	-25.6187	16.610	-1.542	0.123	-58.173	6.936
pre4000	392.0840	12.159	32.246	0.000	368.252	415.916
phyper	-91.0215	9.364	-9.720	0.000	-109.374	-72.669
diabetes	147.6247	10.005	14.756	0.000	128.016	167.233
anemia	12.0931	13.709	0.882	0.378	-14.777	38.963
lung	-22.1301	16.400	-1.349	0.177	-54.273	10.013
dlivord	24.0691	2.766	8.703	0.000	18.649	29.490
educ_0.0	-35.8129	76.010	-0.471	0.638	-184.789	113.163
educ_1.0	-41.6684	75.598	-0.551	0.582	-189.838	106.502
educ_2.0	-11.5907	75.610	-0.153	0.878	-159.784	136.603
dmage	1.0239	0.332	3.088	0.002	0.374	1.674
dmarr	41.7062	4.232	9.856	0.000	33.413	50.000
tot_3.0	-0.9726	4.162	-0.234	0.815	-9.130	7.184
tot_4.0	0.0437	5.822	0.008	0.994	-11.366	11.454
tot_5.0	-18.1630	8.078	-2.248	0.025	-33.996	-2.330
tot_6.0	-17.8669	11.645	-1.534	0.125	-40.691	4.957
tot_7.0	-34.9727	16.172	-2.163	0.031	-66.669	-3.276
tot_8.0	-55.8159	19.336	-2.887	0.004	-93.714	-17.918
live_1.0	-9.5176	17.026	-0.559	0.576	-42.887	23.852
live_2.0	-36.3972	18.578	-1.959	0.050	-72.810	0.016
live_3.0	62.1962	7.308	8.510	0.000	47.872	76.521
live_4.0	102.7326	6.393	16.069	0.000	90.202	115.263
live_5.0	106.6757	5.372	19.860	0.000	96.148	117.204
live_6.0	98.6006	5.867	16.806	0.000	87.101	110.100
live_7.0	95.5877	6.998	13.660	0.000	81.872	109.303
live_8.0	74.3112	8.294	8.960	0.000	58.056	90.566
live_9.0	61.0256	6.411	9.518	0.000	48.460	73.592
dgestat	114.8189	0.847	135.609	0.000	113.159	116.478
csex	139.1945	2.727	51.035	0.000	133.849	144.540
plur_1	569.6303	9.834	57.927	0.000	550.357	588.904

Omnibus:	1325.252	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2280.651
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.682	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

tot_3.0

OLS Regression Results

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Dep. Variable:          dbrwt      R-squared:                0.377
Model:                  OLS        Adj. R-squared:             0.377
Method:                 Least Squares    F-statistic:           1362.
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):      0.00
Time:                  12:50:45      Log-Likelihood:         -8.6579e+05
No. Observations:      114610      AIC:                   1.732e+06
Df Residuals:          114572      BIC:                   1.732e+06
Df Model:               37
Covariance Type:       HCO
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	coef	std err	z	P> z	[0.025	0.975]
const	-1815.8898	82.712	-21.954	0.000	-1978.002	-1653.778
tobacco	-209.2477	4.055	-51.604	0.000	-217.195	-201.300
alcohol	-60.1048	14.652	-4.102	0.000	-88.821	-31.388
mrace3_2	-185.5901	9.359	-19.829	0.000	-203.934	-167.246
mrace3_3	-139.2721	4.987	-27.928	0.000	-149.046	-129.498
ormothhis	-97.0992	7.789	-12.467	0.000	-112.365	-81.834
adeq_2.0	-41.1578	3.598	-11.439	0.000	-48.210	-34.106
adeq_3.0	-77.1738	7.405	-10.422	0.000	-91.688	-62.660
cardiac	-25.6639	16.612	-1.545	0.122	-58.223	6.895
pre4000	392.1255	12.160	32.246	0.000	368.292	415.959
phyper	-91.0706	9.365	-9.725	0.000	-109.425	-72.716
diabetes	147.6523	10.005	14.758	0.000	128.042	167.262
anemia	12.1221	13.711	0.884	0.377	-14.751	38.995
lung	-22.1373	16.398	-1.350	0.177	-54.277	10.003
dlivord	25.2683	2.757	9.166	0.000	19.865	30.671
educ_0.0	-35.7286	76.014	-0.470	0.638	-184.714	113.257
educ_1.0	-41.3426	75.603	-0.547	0.584	-189.521	106.836
educ_2.0	-11.2152	75.615	-0.148	0.882	-159.417	136.987
dmage	1.0134	0.331	3.065	0.002	0.365	1.661
dmар	41.6675	4.231	9.849	0.000	33.375	49.960
tot_2.0	6.4676	3.559	1.817	0.069	-0.508	13.443
tot_4.0	2.9895	5.486	0.545	0.586	-7.763	13.742
tot_5.0	-15.7342	7.614	-2.067	0.039	-30.656	-0.812
tot_6.0	-16.1042	11.158	-1.443	0.149	-37.974	5.766
tot_7.0	-33.9433	15.655	-2.168	0.030	-64.627	-3.259
tot_8.0	-56.7058	18.593	-3.050	0.002	-93.148	-20.264
live_1.0	-13.9094	17.221	-0.808	0.419	-47.663	19.844

live_2.0	-40.8718	18.733	-2.182	0.029	-77.588	-4.156
live_3.0	57.6713	7.717	7.474	0.000	42.547	72.796
live_4.0	98.2117	6.877	14.282	0.000	84.734	111.690
live_5.0	102.1628	5.942	17.193	0.000	90.517	113.809
live_6.0	94.2351	6.343	14.855	0.000	81.802	106.668
live_7.0	91.4263	7.372	12.402	0.000	76.977	105.875
live_8.0	70.1831	8.580	8.180	0.000	53.367	86.999
live_9.0	56.9900	6.786	8.398	0.000	43.689	70.291
dgestat	114.8167	0.847	135.614	0.000	113.157	116.476
csex	139.2047	2.727	51.040	0.000	133.859	144.550
plur_1	569.6389	9.834	57.923	0.000	550.364	588.914

Omnibus:	1326.103	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2282.408
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.682	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

tot_4.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:45	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1817.0690	82.694	-21.973	0.000	-1979.146	-1654.992
tobacco	-209.2588	4.053	-51.625	0.000	-217.203	-201.314
alcohol	-60.0106	14.648	-4.097	0.000	-88.721	-31.301
mrace3_2	-185.6091	9.360	-19.830	0.000	-203.955	-167.264
mrace3_3	-139.2642	4.985	-27.937	0.000	-149.035	-129.494
ormothhis	-97.0556	7.789	-12.461	0.000	-112.322	-81.790
adeq_2.0	-41.1365	3.598	-11.433	0.000	-48.188	-34.084
adeq_3.0	-77.1795	7.406	-10.421	0.000	-91.695	-62.664
cardiac	-25.5805	16.612	-1.540	0.124	-58.140	6.979
pre4000	392.1554	12.159	32.253	0.000	368.324	415.986
phyper	-91.0360	9.363	-9.723	0.000	-109.387	-72.685

diabetes	147.6862	10.005	14.761	0.000	128.076	167.296
anemia	12.0859	13.710	0.882	0.378	-14.785	38.957
lung	-22.1438	16.401	-1.350	0.177	-54.288	10.001
dlivord	25.8595	2.659	9.725	0.000	20.648	31.071
educ_0.0	-35.4337	76.000	-0.466	0.641	-184.390	113.523
educ_1.0	-40.9873	75.587	-0.542	0.588	-189.136	107.161
educ_2.0	-10.8584	75.600	-0.144	0.886	-159.031	137.314
dimage	1.0121	0.330	3.063	0.002	0.365	1.660
dmarr	41.6047	4.229	9.838	0.000	33.316	49.893
tot_2.0	7.6850	4.104	1.873	0.061	-0.359	15.729
tot_3.0	3.5119	4.522	0.777	0.437	-5.351	12.375
tot_5.0	-15.2296	7.629	-1.996	0.046	-30.182	-0.277
tot_6.0	-15.9446	11.053	-1.443	0.149	-37.608	5.719
tot_7.0	-34.1588	15.428	-2.214	0.027	-64.398	-3.920
tot_8.0	-57.8955	18.080	-3.202	0.001	-93.331	-22.460
live_1.0	-15.5143	17.365	-0.893	0.372	-49.549	18.520
live_2.0	-42.5772	18.864	-2.257	0.024	-79.549	-5.605
live_3.0	55.9278	8.056	6.942	0.000	40.138	71.718
live_4.0	96.4458	7.247	13.308	0.000	82.241	110.650
live_5.0	100.4264	6.351	15.813	0.000	87.979	112.874
live_6.0	92.4889	6.739	13.724	0.000	79.280	105.697
live_7.0	89.6444	7.711	11.625	0.000	74.530	104.759
live_8.0	68.5057	8.875	7.719	0.000	51.111	85.900
live_9.0	55.3485	7.120	7.774	0.000	41.394	69.303
dgestat	114.8148	0.847	135.614	0.000	113.155	116.474
csex	139.2075	2.727	51.041	0.000	133.862	144.553
plur_1	569.6766	9.835	57.926	0.000	550.401	588.952

Omnibus:	1326.499	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2283.182
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.682	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

tot_5.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:45	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06

Df Model: 37
Covariance Type: HCO

	coef	std err	z	P> z	[0.025	0.975]
const	-1814.9804	82.629	-21.965	0.000	-1976.931	-1653.030
tobacco	-209.8032	4.053	-51.761	0.000	-217.748	-201.859
alcohol	-60.3929	14.644	-4.124	0.000	-89.094	-31.692
mrace3_2	-185.4657	9.358	-19.818	0.000	-203.808	-167.124
mrace3_3	-140.1693	4.985	-28.120	0.000	-149.939	-130.400
ormothhis	-97.2759	7.789	-12.489	0.000	-112.541	-82.010
adeq_2.0	-41.0927	3.598	-11.420	0.000	-48.145	-34.040
adeq_3.0	-76.9449	7.405	-10.391	0.000	-91.458	-62.431
cardiac	-25.7121	16.614	-1.548	0.122	-58.274	6.850
pre4000	392.0050	12.159	32.240	0.000	368.174	415.836
phyper	-90.9874	9.364	-9.717	0.000	-109.340	-72.635
diabetes	147.5241	10.008	14.740	0.000	127.908	167.140
anemia	12.0967	13.710	0.882	0.378	-14.775	38.969
lung	-22.4515	16.400	-1.369	0.171	-54.594	9.691
dlivord	23.8588	2.568	9.291	0.000	18.826	28.892
educ_0.0	-35.7653	75.936	-0.471	0.638	-184.598	113.067
educ_1.0	-41.7661	75.522	-0.553	0.580	-189.787	106.255
educ_2.0	-11.5966	75.535	-0.154	0.878	-159.641	136.448
dmage	0.9210	0.331	2.785	0.005	0.273	1.569
dmarr	41.9203	4.228	9.915	0.000	33.634	50.207
tot_2.0	14.1349	4.509	3.135	0.002	5.297	22.973
tot_3.0	11.9931	4.970	2.413	0.016	2.253	21.733
tot_4.0	13.7121	6.042	2.269	0.023	1.870	25.554
tot_6.0	-3.2762	11.177	-0.293	0.769	-25.182	18.630
tot_7.0	-20.1690	15.445	-1.306	0.192	-50.441	10.103
tot_8.0	-40.3719	17.922	-2.253	0.024	-75.499	-5.245
live_1.0	-19.4792	17.443	-1.117	0.264	-53.666	14.708
live_2.0	-46.5940	18.954	-2.458	0.014	-83.742	-9.445
live_3.0	51.9785	8.225	6.320	0.000	35.858	68.099
live_4.0	92.5318	7.421	12.468	0.000	77.986	107.077
live_5.0	96.5432	6.547	14.746	0.000	83.711	109.376
live_6.0	88.5760	6.928	12.785	0.000	74.998	102.154
live_7.0	85.6760	7.881	10.872	0.000	70.230	101.122
live_8.0	64.4490	9.028	7.139	0.000	46.755	82.143
live_9.0	51.4012	7.297	7.044	0.000	37.100	65.703
dgestat	114.8435	0.847	135.613	0.000	113.184	116.503
csex	139.2490	2.727	51.057	0.000	133.904	144.595
plur_1	569.7121	9.834	57.931	0.000	550.437	588.987

Omnibus:	1328.176	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2287.120
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

tot_6.0

OLS Regression Results

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Dep. Variable:          dbrwt      R-squared:                0.377
Model:                  OLS        Adj. R-squared:            0.377
Method:                 Least Squares    F-statistic:          1362.
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):      0.00
Time:                  12:50:46      Log-Likelihood:        -8.6579e+05
No. Observations:      114610      AIC:                  1.732e+06
Df Residuals:          114572      BIC:                  1.732e+06
Df Model:               37
Covariance Type:        HCO
=====

```

	coef	std err	z	P> z	[0.025	0.975]
const	-1814.9016	82.599	-21.972	0.000	-1976.793	-1653.010
tobacco	-209.7244	4.054	-51.732	0.000	-217.670	-201.779
alcohol	-60.2689	14.648	-4.115	0.000	-88.978	-31.560
mrace3_2	-185.5045	9.359	-19.821	0.000	-203.848	-167.161
mrace3_3	-140.0685	4.982	-28.113	0.000	-149.834	-130.303
ormothhis	-97.2605	7.789	-12.487	0.000	-112.526	-81.995
adeq_2.0	-41.0939	3.598	-11.422	0.000	-48.146	-34.042
adeq_3.0	-76.9744	7.406	-10.394	0.000	-91.489	-62.460
cardiac	-25.7427	16.615	-1.549	0.121	-58.308	6.822
pre4000	392.0816	12.158	32.248	0.000	368.252	415.911
phyper	-90.9895	9.364	-9.717	0.000	-109.342	-72.637
diabetes	147.5192	10.008	14.740	0.000	127.904	167.135
anemia	12.0894	13.710	0.882	0.378	-14.781	38.960
lung	-22.4078	16.397	-1.367	0.172	-54.546	9.730
dlivord	23.9971	2.552	9.404	0.000	18.996	28.999
educ_0.0	-35.8852	75.894	-0.473	0.636	-184.634	112.864
educ_1.0	-41.8062	75.482	-0.554	0.580	-189.748	106.135
educ_2.0	-11.6295	75.494	-0.154	0.878	-159.594	136.335
dmage	0.9313	0.331	2.812	0.005	0.282	1.580
dmар	41.8920	4.228	9.907	0.000	33.605	50.179
tot_2.0	13.2075	4.803	2.750	0.006	3.794	22.621
tot_3.0	10.8572	5.383	2.017	0.044	0.306	21.408
tot_4.0	12.4490	6.471	1.924	0.054	-0.234	25.132
tot_5.0	-5.3729	8.259	-0.651	0.515	-21.561	10.815
tot_7.0	-21.7426	15.700	-1.385	0.166	-52.514	9.029
tot_8.0	-42.1958	18.185	-2.320	0.020	-77.837	-6.554
live_1.0	-18.7562	17.470	-1.074	0.283	-52.996	15.484

live_2.0	-45.8867	18.974	-2.418	0.016	-83.076	-8.698
live_3.0	52.6957	8.287	6.359	0.000	36.453	68.938
live_4.0	93.2710	7.489	12.455	0.000	78.594	107.948
live_5.0	97.2735	6.627	14.679	0.000	84.286	110.261
live_6.0	89.3004	6.997	12.762	0.000	75.586	103.015
live_7.0	86.3885	7.946	10.872	0.000	70.815	101.962
live_8.0	65.1785	9.085	7.174	0.000	47.371	82.986
live_9.0	52.1184	7.369	7.072	0.000	37.675	66.562
dgestat	114.8399	0.847	135.599	0.000	113.180	116.500
csex	139.2496	2.727	51.060	0.000	133.904	144.595
plur_1	569.6561	9.834	57.926	0.000	550.381	588.931

Omnibus:	1327.632	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2286.139
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

tot_7.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:46	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1814.2431	82.598	-21.965	0.000	-1976.132	-1652.354
tobacco	-209.8923	4.057	-51.737	0.000	-217.844	-201.941
alcohol	-60.4600	14.651	-4.127	0.000	-89.175	-31.745
mrace3_2	-185.4308	9.360	-19.811	0.000	-203.776	-167.086
mrace3_3	-140.2270	4.993	-28.082	0.000	-150.014	-130.440
ormothhis	-97.2886	7.789	-12.490	0.000	-112.556	-82.022
adeq_2.0	-41.1000	3.598	-11.422	0.000	-48.152	-34.048
adeq_3.0	-76.9843	7.406	-10.394	0.000	-91.501	-62.468
cardiac	-25.7741	16.611	-1.552	0.121	-58.332	6.784
pre4000	392.0043	12.160	32.237	0.000	368.171	415.838
phyper	-90.9947	9.363	-9.718	0.000	-109.346	-72.643

diabetes	147.4973	10.008	14.739	0.000	127.883	167.112
anemia	12.1549	13.708	0.887	0.375	-14.712	39.022
lung	-22.5645	16.401	-1.376	0.169	-54.710	9.581
dlivord	23.0658	2.519	9.156	0.000	18.128	28.003
educ_0.0	-35.8856	75.890	-0.473	0.636	-184.627	112.856
educ_1.0	-41.7438	75.478	-0.553	0.580	-189.677	106.189
educ_2.0	-11.5609	75.489	-0.153	0.878	-159.517	136.396
dmage	0.9131	0.332	2.754	0.006	0.263	1.563
dmarr	41.9414	4.230	9.916	0.000	33.651	50.231
tot_2.0	13.9577	4.961	2.814	0.005	4.235	23.680
tot_3.0	12.2259	5.615	2.177	0.029	1.221	23.231
tot_4.0	14.3723	6.714	2.141	0.032	1.213	27.531
tot_5.0	-2.9307	8.489	-0.345	0.730	-19.568	13.706
tot_6.0	-1.7046	11.683	-0.146	0.884	-24.603	21.193
tot_8.0	-36.9077	18.301	-2.017	0.044	-72.778	-1.038
live_1.0	-18.2636	17.477	-1.045	0.296	-52.518	15.991
live_2.0	-45.5545	18.979	-2.400	0.016	-82.752	-8.357
live_3.0	53.0041	8.296	6.389	0.000	36.744	69.265
live_4.0	93.5532	7.501	12.472	0.000	78.852	108.255
live_5.0	97.5692	6.639	14.695	0.000	84.556	110.582
live_6.0	89.5903	7.015	12.771	0.000	75.841	103.340
live_7.0	86.6554	7.963	10.883	0.000	71.049	102.262
live_8.0	65.4559	9.103	7.190	0.000	47.614	83.298
live_9.0	52.4895	7.388	7.105	0.000	38.010	66.969
dgestat	114.8504	0.847	135.597	0.000	113.190	116.510
csex	139.2410	2.727	51.051	0.000	133.895	144.587
plur_1	569.6991	9.834	57.931	0.000	550.425	588.974

Omnibus:	1327.661	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2285.844
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

tot_8.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:46	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06

Df Model: 37
Covariance Type: HCO

	coef	std err	z	P> z	[0.025	0.975]
const	-1809.6333	82.557	-21.920	0.000	-1971.442	-1647.825
tobacco	-209.9399	4.059	-51.727	0.000	-217.895	-201.985
alcohol	-60.6845	14.655	-4.141	0.000	-89.408	-31.961
mrace3_2	-185.3967	9.361	-19.806	0.000	-203.744	-167.050
mrace3_3	-140.5425	4.996	-28.132	0.000	-150.334	-130.751
ormothhis	-97.1918	7.789	-12.478	0.000	-112.458	-81.925
adeq_2.0	-41.0430	3.598	-11.406	0.000	-48.095	-33.990
adeq_3.0	-77.0191	7.406	-10.399	0.000	-91.535	-62.503
cardiac	-25.9385	16.616	-1.561	0.119	-58.506	6.629
pre4000	391.8688	12.158	32.232	0.000	368.040	415.697
phyper	-91.0020	9.363	-9.719	0.000	-109.354	-72.650
diabetes	147.3662	10.010	14.722	0.000	127.747	166.986
anemia	12.0499	13.710	0.879	0.379	-14.821	38.921
lung	-22.8129	16.400	-1.391	0.164	-54.956	9.330
dlivord	20.6868	2.262	9.144	0.000	16.253	25.121
educ_0.0	-38.2634	75.877	-0.504	0.614	-186.980	110.453
educ_1.0	-43.5497	75.469	-0.577	0.564	-191.466	104.366
educ_2.0	-13.3742	75.480	-0.177	0.859	-161.313	134.565
dmage	0.8770	0.331	2.646	0.008	0.227	1.526
dmarr	42.1353	4.229	9.963	0.000	33.847	50.424
tot_2.0	14.5882	5.026	2.902	0.004	4.737	24.439
tot_3.0	14.2505	5.653	2.521	0.012	3.171	25.330
tot_4.0	17.7383	6.671	2.659	0.008	4.663	30.814
tot_5.0	1.7083	8.351	0.205	0.838	-14.660	18.076
tot_6.0	4.4599	11.474	0.389	0.697	-18.029	26.949
tot_7.0	-10.3328	15.500	-0.667	0.505	-40.712	20.047
live_1.0	-16.0088	17.443	-0.918	0.359	-50.196	18.178
live_2.0	-43.4650	18.962	-2.292	0.022	-80.630	-6.300
live_3.0	55.1839	8.245	6.693	0.000	39.025	71.343
live_4.0	95.6737	7.447	12.847	0.000	81.077	110.270
live_5.0	99.5315	6.582	15.122	0.000	86.631	112.432
live_6.0	91.4708	6.969	13.125	0.000	77.811	105.130
live_7.0	88.6348	7.918	11.195	0.000	73.117	104.153
live_8.0	67.3270	9.066	7.426	0.000	49.558	85.096
live_9.0	54.3277	7.342	7.400	0.000	39.938	68.717
dgestat	114.8611	0.847	135.569	0.000	113.200	116.522
csex	139.2454	2.728	51.052	0.000	133.899	144.591
plur_1	569.4186	9.834	57.905	0.000	550.145	588.692

Omnibus:	1328.686	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2288.721
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_1.0

OLS Regression Results

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Dep. Variable:          dbrwt      R-squared:                0.377
Model:                  OLS        Adj. R-squared:            0.377
Method:                 Least Squares    F-statistic:          1362.
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):      0.00
Time:                  12:50:46      Log-Likelihood:        -8.6579e+05
No. Observations:      114610      AIC:                  1.732e+06
Df Residuals:          114572      BIC:                  1.732e+06
Df Model:               37
Covariance Type:       HCO
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	coef	std err	z	P> z	[0.025	0.975]
const	-1820.6507	82.545	-22.056	0.000	-1982.436	-1658.865
tobacco	-209.5670	4.061	-51.601	0.000	-217.527	-201.607
alcohol	-60.2268	14.648	-4.111	0.000	-88.937	-31.516
mrace3_2	-185.5147	9.360	-19.821	0.000	-203.859	-167.170
mrace3_3	-139.7171	5.001	-27.937	0.000	-149.519	-129.915
ormothhis	-97.1784	7.789	-12.477	0.000	-112.444	-81.913
adeq_2.0	-41.0905	3.598	-11.420	0.000	-48.143	-34.038
adeq_3.0	-76.9172	7.405	-10.387	0.000	-91.431	-62.403
cardiac	-25.6883	16.612	-1.546	0.122	-58.247	6.870
pre4000	392.1105	12.159	32.249	0.000	368.280	415.941
phyper	-90.9413	9.363	-9.713	0.000	-109.293	-72.590
diabetes	147.5597	10.007	14.746	0.000	127.947	167.172
anemia	12.0665	13.710	0.880	0.379	-14.805	38.938
lung	-22.2423	16.398	-1.356	0.175	-54.383	9.898
dlivord	24.2062	2.711	8.929	0.000	18.893	29.520
educ_0.0	-35.8536	75.952	-0.472	0.637	-184.717	113.010
educ_1.0	-41.9566	75.539	-0.555	0.579	-190.010	106.097
educ_2.0	-11.8254	75.551	-0.157	0.876	-159.902	136.251
dmage	0.9669	0.333	2.907	0.004	0.315	1.619
dmар	41.7221	4.231	9.861	0.000	33.429	50.015
tot_2.0	10.9652	4.983	2.201	0.028	1.199	20.731
tot_3.0	8.0979	5.890	1.375	0.169	-3.446	19.641
tot_4.0	9.3558	7.204	1.299	0.194	-4.764	23.476
tot_5.0	-8.6808	9.139	-0.950	0.342	-26.593	9.231
tot_6.0	-8.3160	12.393	-0.671	0.502	-32.606	15.974
tot_7.0	-25.4105	16.663	-1.525	0.127	-58.070	7.249
tot_8.0	-46.3656	19.637	-2.361	0.018	-84.854	-7.878

live_2.0	-43.5979	18.852	-2.313	0.021	-80.547	-6.649
live_3.0	54.8402	8.057	6.807	0.000	39.049	70.632
live_4.0	95.3869	7.240	13.174	0.000	81.196	109.578
live_5.0	99.3395	6.354	15.634	0.000	86.886	111.793
live_6.0	91.3352	6.768	13.496	0.000	78.071	104.600
live_7.0	88.4569	7.739	11.430	0.000	73.288	103.626
live_8.0	67.2454	8.904	7.552	0.000	49.793	84.698
live_9.0	54.1480	7.160	7.563	0.000	40.115	68.181
dgestat	114.8356	0.847	135.600	0.000	113.176	116.495
csex	139.2201	2.727	51.045	0.000	133.875	144.566
plur_1	575.1248	8.560	67.188	0.000	558.348	591.902

Omnibus:	1326.931	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2284.350
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.682	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_2.0

OLS Regression Results

Dep. Variable:	dbrrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1362.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:47	Log-Likelihood:	-8.6579e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1817.9716	82.532	-22.027	0.000	-1979.731	-1656.212
tobacco	-209.6714	4.062	-51.624	0.000	-217.632	-201.711
alcohol	-60.0269	14.648	-4.098	0.000	-88.737	-31.316
mrace3_2	-185.5423	9.361	-19.820	0.000	-203.890	-167.195
mrace3_3	-139.9206	5.003	-27.968	0.000	-149.726	-130.115
ormothhis	-97.6700	7.789	-12.539	0.000	-112.937	-82.403
adeq_2.0	-41.2304	3.599	-11.457	0.000	-48.284	-34.177
adeq_3.0	-77.8498	7.402	-10.518	0.000	-92.357	-63.343
cardiac	-25.8315	16.619	-1.554	0.120	-58.404	6.741
pre4000	391.8738	12.158	32.231	0.000	368.044	415.704
phyper	-90.6934	9.362	-9.687	0.000	-109.043	-72.344

diabetes	147.4882	10.005	14.741	0.000	127.878	167.098
anemia	11.5897	13.708	0.845	0.398	-15.278	38.458
lung	-22.0143	16.404	-1.342	0.180	-54.165	10.137
dlivord	23.1300	2.725	8.489	0.000	17.789	28.471
educ_0.0	-35.3822	75.823	-0.467	0.641	-183.992	113.228
educ_1.0	-41.9192	75.411	-0.556	0.578	-189.722	105.883
educ_2.0	-11.7426	75.423	-0.156	0.876	-159.569	136.083
dmage	1.0027	0.333	3.013	0.003	0.350	1.655
dmarr	41.5883	4.232	9.827	0.000	33.293	49.883
tot_2.0	8.7571	5.014	1.746	0.081	-1.071	18.585
tot_3.0	6.0538	5.908	1.025	0.306	-5.526	17.633
tot_4.0	7.6962	7.213	1.067	0.286	-6.442	21.834
tot_5.0	-9.9006	9.149	-1.082	0.279	-27.833	8.032
tot_6.0	-9.0694	12.397	-0.732	0.464	-33.368	15.229
tot_7.0	-25.5655	16.664	-1.534	0.125	-58.226	7.095
tot_8.0	-44.8915	19.647	-2.285	0.022	-83.400	-6.383
live_1.0	-12.4943	17.366	-0.719	0.472	-46.531	21.542
live_3.0	58.8261	8.092	7.270	0.000	42.966	74.686
live_4.0	99.1455	7.287	13.606	0.000	84.864	113.427
live_5.0	102.9320	6.415	16.044	0.000	90.358	115.506
live_6.0	94.8377	6.811	13.925	0.000	81.489	108.187
live_7.0	91.9339	7.779	11.819	0.000	76.688	107.180
live_8.0	70.7049	8.944	7.905	0.000	53.175	88.235
live_9.0	57.4997	7.204	7.982	0.000	43.381	71.619
dgestat	114.9111	0.846	135.810	0.000	113.253	116.569
csex	139.2246	2.728	51.045	0.000	133.879	144.570
plur_1	569.6798	9.835	57.926	0.000	550.404	588.955

Omnibus:	1326.200	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2283.520
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.682	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_3.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1360.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:47	Log-Likelihood:	-8.6581e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06

Df Model: 37
Covariance Type: HCO

	coef	std err	z	P> z	[0.025	0.975]
const	-1816.5856	82.600	-21.993	0.000	-1978.479	-1654.692
tobacco	-209.4488	4.062	-51.566	0.000	-217.410	-201.488
alcohol	-59.6553	14.633	-4.077	0.000	-88.336	-30.974
mrace3_2	-185.4142	9.359	-19.812	0.000	-203.757	-167.072
mrace3_3	-139.9159	5.003	-27.967	0.000	-149.721	-130.111
ormothhis	-96.4492	7.792	-12.377	0.000	-111.722	-81.176
adeq_2.0	-40.4503	3.598	-11.242	0.000	-47.503	-33.398
adeq_3.0	-74.9389	7.399	-10.128	0.000	-89.440	-60.437
cardiac	-26.0976	16.622	-1.570	0.116	-58.675	6.480
pre4000	392.5599	12.180	32.229	0.000	368.687	416.433
phyper	-92.4499	9.360	-9.877	0.000	-110.795	-74.105
diabetes	147.4874	10.010	14.734	0.000	127.868	167.107
anemia	12.6978	13.721	0.925	0.355	-14.194	39.590
lung	-22.3674	16.390	-1.365	0.172	-54.492	9.757
dlivord	32.4553	2.495	13.011	0.000	27.566	37.344
educ_0.0	-39.8207	75.874	-0.525	0.600	-188.530	108.889
educ_1.0	-43.3490	75.465	-0.574	0.566	-191.257	104.559
educ_2.0	-13.0326	75.477	-0.173	0.863	-160.965	134.900
dmage	0.7540	0.332	2.274	0.023	0.104	1.404
dmarr	43.2328	4.225	10.233	0.000	34.952	51.514
tot_2.0	27.5471	4.505	6.114	0.000	18.717	36.377
tot_3.0	23.3445	5.563	4.197	0.000	12.442	34.247
tot_4.0	21.7136	7.047	3.081	0.002	7.902	35.525
tot_5.0	0.1405	9.084	0.015	0.988	-17.665	17.946
tot_6.0	-3.5682	12.392	-0.288	0.773	-27.855	20.719
tot_7.0	-25.3646	16.680	-1.521	0.128	-58.056	7.327
tot_8.0	-59.3119	19.566	-3.031	0.002	-97.661	-20.963
live_1.0	-45.3919	16.964	-2.676	0.007	-78.641	-12.143
live_2.0	-73.3343	18.467	-3.971	0.000	-109.529	-37.140
live_4.0	67.1815	6.281	10.697	0.000	54.872	79.491
live_5.0	72.0454	5.325	13.531	0.000	61.609	82.482
live_6.0	64.7503	5.850	11.069	0.000	53.285	76.215
live_7.0	62.0054	6.951	8.920	0.000	48.382	75.629
live_8.0	40.9630	8.244	4.969	0.000	24.805	57.121
live_9.0	28.6314	6.390	4.481	0.000	16.107	41.156
dgestat	114.7923	0.848	135.444	0.000	113.131	116.453
csex	139.2738	2.728	51.055	0.000	133.927	144.620
plur_1	569.9691	9.837	57.942	0.000	550.689	589.249

Omnibus:	1329.496	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2291.232
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.684	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_4.0

OLS Regression Results

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Dep. Variable:          dbrwt      R-squared:                0.376
Model:                  OLS        Adj. R-squared:             0.376
Method:                 Least Squares    F-statistic:          1356.
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):      0.00
Time:                  12:50:47      Log-Likelihood:        -8.6587e+05
No. Observations:      114610      AIC:                  1.732e+06
Df Residuals:          114572      BIC:                  1.732e+06
Df Model:               37
Covariance Type:       HCO
=====

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	coef	std err	z	P> z	[0.025	0.975]
const	-1836.7685	83.006	-22.128	0.000	-1999.457	-1674.080
tobacco	-209.9535	4.064	-51.660	0.000	-217.919	-201.988
alcohol	-60.0522	14.656	-4.097	0.000	-88.778	-31.327
mrace3_2	-185.9530	9.350	-19.888	0.000	-204.279	-167.627
mrace3_3	-141.0403	5.006	-28.177	0.000	-150.851	-131.230
ormothhis	-96.8881	7.790	-12.438	0.000	-112.156	-81.620
adeq_2.0	-40.4404	3.601	-11.231	0.000	-47.498	-33.383
adeq_3.0	-76.5969	7.407	-10.342	0.000	-91.114	-62.080
cardiac	-25.9941	16.619	-1.564	0.118	-58.566	6.578
pre4000	394.3016	12.195	32.333	0.000	370.400	418.203
phyper	-94.1468	9.357	-10.062	0.000	-112.486	-75.807
diabetes	146.8764	10.016	14.664	0.000	127.245	166.508
anemia	12.8440	13.714	0.937	0.349	-14.034	39.722
lung	-23.1890	16.385	-1.415	0.157	-55.302	8.924
dlivord	40.7230	2.445	16.652	0.000	35.930	45.516
educ_0.0	-29.1926	76.316	-0.383	0.702	-178.769	120.384
educ_1.0	-31.1641	75.900	-0.411	0.681	-179.925	117.597
educ_2.0	-0.3769	75.911	-0.005	0.996	-149.159	148.405
dmage	0.6467	0.332	1.946	0.052	-0.005	1.298
dmар	45.2289	4.224	10.707	0.000	36.950	53.508
tot_2.0	45.1385	4.364	10.342	0.000	36.584	53.693
tot_3.0	39.4211	5.490	7.181	0.000	28.662	50.181
tot_4.0	34.4196	7.024	4.900	0.000	20.653	48.186
tot_5.0	9.9116	9.077	1.092	0.275	-7.879	27.702
tot_6.0	1.4739	12.400	0.119	0.905	-22.829	25.777
tot_7.0	-24.7641	16.702	-1.483	0.138	-57.500	7.972
tot_8.0	-72.0175	19.601	-3.674	0.000	-110.435	-33.600

live_1.0	-75.2287	16.858	-4.462	0.000	-108.271	-42.187
live_2.0	-102.4122	18.389	-5.569	0.000	-138.453	-66.371
live_3.0	-3.4869	6.950	-0.502	0.616	-17.108	10.134
live_5.0	43.4843	4.995	8.705	0.000	33.694	53.275
live_6.0	36.7775	5.561	6.613	0.000	25.878	47.677
live_7.0	34.1799	6.708	5.095	0.000	21.032	47.327
live_8.0	13.3133	8.041	1.656	0.098	-2.447	29.074
live_9.0	1.7114	6.139	0.279	0.780	-10.322	13.744
dgestat	114.8142	0.848	135.358	0.000	113.152	116.477
csex	139.2162	2.729	51.008	0.000	133.867	144.566
plur_1	570.3925	9.841	57.961	0.000	551.105	589.680
=====						
Omnibus:		1333.179	Durbin-Watson:			1.962
Prob(Omnibus):		0.000	Jarque-Bera (JB):			2301.273
Skew:		0.055	Prob(JB):			0.00
Kurtosis:		3.685	Cond. No.			5.72e+03
=====						

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_5.0

OLS Regression Results

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Dep. Variable:	dbrwt		R-squared:	0.376		
Model:	OLS		Adj. R-squared:	0.376		
Method:	Least Squares		F-statistic:	1352.		
Date:	Sun, 01 Oct 2023		Prob (F-statistic):	0.00		
Time:	12:50:47		Log-Likelihood:	-8.6590e+05		
No. Observations:	114610		AIC:	1.732e+06		
Df Residuals:	114572		BIC:	1.732e+06		
Df Model:	37					
Covariance Type:	HCO					
=====						
	coef	std err	z	P> z	[0.025	0.975]

const	-1843.1481	82.520	-22.336	0.000	-2004.884	-1681.412
tobacco	-210.2662	4.065	-51.727	0.000	-218.233	-202.299
alcohol	-59.4535	14.639	-4.061	0.000	-88.145	-30.762
mrace3_2	-186.5735	9.354	-19.946	0.000	-204.907	-168.240
mrace3_3	-141.6050	5.005	-28.293	0.000	-151.415	-131.796
ormothhis	-96.6170	7.797	-12.391	0.000	-111.899	-81.335
adeq_2.0	-41.1659	3.601	-11.430	0.000	-48.225	-34.107
adeq_3.0	-78.5265	7.413	-10.593	0.000	-93.056	-63.997
cardiac	-26.9760	16.638	-1.621	0.105	-59.586	5.634
pre4000	394.4949	12.194	32.352	0.000	370.596	418.394
phyper	-95.2434	9.358	-10.177	0.000	-113.585	-76.902

diabetes	146.6277	10.022	14.630	0.000	126.985	166.271
anemia	12.3657	13.736	0.900	0.368	-14.556	39.288
lung	-23.1545	16.386	-1.413	0.158	-55.270	8.961
dlivord	44.8293	2.393	18.737	0.000	40.140	49.519
educ_0.0	-32.9832	75.799	-0.435	0.663	-181.547	115.581
educ_1.0	-32.4778	75.380	-0.431	0.667	-180.220	115.264
educ_2.0	-1.7983	75.391	-0.024	0.981	-149.562	145.966
dmage	0.7097	0.333	2.132	0.033	0.057	1.362
dmarr	45.8766	4.222	10.865	0.000	37.601	54.152
tot_2.0	55.5501	4.145	13.403	0.000	47.427	63.673
tot_3.0	48.7829	5.362	9.098	0.000	38.274	59.292
tot_4.0	42.0176	6.957	6.039	0.000	28.382	55.654
tot_5.0	15.4912	9.047	1.712	0.087	-2.241	33.224
tot_6.0	4.4770	12.414	0.361	0.718	-19.854	28.809
tot_7.0	-24.8711	16.707	-1.489	0.137	-57.616	7.874
tot_8.0	-77.7389	19.615	-3.963	0.000	-116.183	-39.295
live_1.0	-91.5111	16.721	-5.473	0.000	-124.283	-58.739
live_2.0	-117.8478	18.281	-6.447	0.000	-153.678	-82.018
live_3.0	-19.2648	6.656	-2.894	0.004	-32.311	-6.218
live_4.0	22.0367	5.643	3.905	0.000	10.977	33.096
live_6.0	21.0835	5.172	4.076	0.000	10.946	31.221
live_7.0	18.4955	6.385	2.897	0.004	5.982	31.009
live_8.0	-2.3575	7.774	-0.303	0.762	-17.594	12.879
live_9.0	-13.8294	5.796	-2.386	0.017	-25.188	-2.470
dgestat	114.8563	0.849	135.336	0.000	113.193	116.520
csex	139.2797	2.730	51.018	0.000	133.929	144.630
plur_1	570.7420	9.859	57.891	0.000	551.419	590.065

Omnibus:	1330.775	Durbin-Watson:	1.961
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2298.006
Skew:	0.054	Prob(JB):	0.00
Kurtosis:	3.685	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_6.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.376
Model:	OLS	Adj. R-squared:	0.376
Method:	Least Squares	F-statistic:	1355.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:47	Log-Likelihood:	-8.6587e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06

Df Model: 37
Covariance Type: HCO

	coef	std err	z	P> z	[0.025	0.975]
const	-1841.9148	82.834	-22.236	0.000	-2004.266	-1679.564
tobacco	-209.8414	4.065	-51.621	0.000	-217.809	-201.874
alcohol	-60.2615	14.646	-4.115	0.000	-88.967	-31.556
mrace3_2	-186.1382	9.352	-19.904	0.000	-204.467	-167.809
mrace3_3	-140.9307	5.005	-28.157	0.000	-150.741	-131.121
ormothhis	-96.6809	7.791	-12.409	0.000	-111.951	-81.411
adeq_2.0	-41.4867	3.600	-11.523	0.000	-48.543	-34.430
adeq_3.0	-79.1345	7.407	-10.683	0.000	-93.652	-64.617
cardiac	-26.5528	16.630	-1.597	0.110	-59.146	6.041
pre4000	394.4286	12.186	32.366	0.000	370.544	418.313
phyper	-94.2456	9.359	-10.071	0.000	-112.588	-75.903
diabetes	147.3399	10.017	14.709	0.000	127.708	166.972
anemia	12.4349	13.717	0.907	0.365	-14.450	39.320
lung	-22.4448	16.400	-1.369	0.171	-54.588	9.699
dlivord	40.4708	2.473	16.364	0.000	35.623	45.318
educ_0.0	-32.5715	76.151	-0.428	0.669	-181.825	116.682
educ_1.0	-32.2147	75.735	-0.425	0.671	-180.653	116.223
educ_2.0	-2.3581	75.747	-0.031	0.975	-150.820	146.104
dmage	0.8952	0.333	2.687	0.007	0.242	1.548
dmarr	44.6067	4.226	10.554	0.000	36.323	52.890
tot_2.0	47.4910	4.283	11.089	0.000	39.097	55.885
tot_3.0	42.0559	5.416	7.765	0.000	31.441	52.671
tot_4.0	36.6220	6.983	5.245	0.000	22.936	50.308
tot_5.0	11.6397	9.056	1.285	0.199	-6.111	29.390
tot_6.0	2.9316	12.398	0.236	0.813	-21.369	27.232
tot_7.0	-24.4964	16.708	-1.466	0.143	-57.244	8.251
tot_8.0	-71.0468	19.610	-3.623	0.000	-109.482	-32.611
live_1.0	-77.0377	16.851	-4.572	0.000	-110.064	-44.011
live_2.0	-103.6902	18.378	-5.642	0.000	-139.710	-67.670
live_3.0	-5.1547	6.919	-0.745	0.456	-18.717	8.407
live_4.0	35.8436	5.944	6.030	0.000	24.193	47.495
live_5.0	40.9604	4.895	8.368	0.000	31.367	50.554
live_7.0	31.1630	6.609	4.715	0.000	18.209	44.117
live_8.0	10.1432	7.952	1.276	0.202	-5.441	25.728
live_9.0	-2.0091	5.998	-0.335	0.738	-13.764	9.746
dgestat	114.8280	0.848	135.395	0.000	113.166	116.490
csex	139.2485	2.729	51.017	0.000	133.899	144.598
plur_1	571.1881	9.839	58.052	0.000	551.904	590.473

Omnibus:	1325.536	Durbin-Watson:	1.961
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2283.870
Skew:	0.055	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_7.0

OLS Regression Results

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=====
Dep. Variable:          dbrwt      R-squared:                0.376
Model:                  OLS        Adj. R-squared:             0.376
Method:                 Least Squares    F-statistic:          1356.
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):      0.00
Time:                  12:50:48      Log-Likelihood:         -8.6585e+05
No. Observations:      114610      AIC:                   1.732e+06
Df Residuals:          114572      BIC:                   1.732e+06
Df Model:               37
Covariance Type:       HCO
=====

```

	coef	std err	z	P> z	[0.025	0.975]
const	-1839.6238	82.739	-22.234	0.000	-2001.790	-1677.458
tobacco	-209.6347	4.065	-51.575	0.000	-217.601	-201.668
alcohol	-60.5733	14.630	-4.140	0.000	-89.247	-31.900
mrace3_2	-185.8128	9.346	-19.883	0.000	-204.130	-167.496
mrace3_3	-140.2777	5.005	-28.030	0.000	-150.087	-130.469
ormothhis	-96.3324	7.793	-12.361	0.000	-111.607	-81.057
adeq_2.0	-41.2494	3.600	-11.459	0.000	-48.305	-34.194
adeq_3.0	-79.0180	7.406	-10.669	0.000	-93.534	-64.502
cardiac	-26.3357	16.632	-1.583	0.113	-58.934	6.263
pre4000	393.5007	12.163	32.353	0.000	369.662	417.339
phyper	-93.1556	9.359	-9.954	0.000	-111.498	-74.813
diabetes	147.5325	10.020	14.724	0.000	127.893	167.172
anemia	12.4305	13.717	0.906	0.365	-14.453	39.314
lung	-22.0892	16.407	-1.346	0.178	-54.246	10.068
dlivord	36.3898	2.548	14.280	0.000	31.395	41.384
educ_0.0	-31.7620	76.057	-0.418	0.676	-180.831	117.307
educ_1.0	-32.5990	75.640	-0.431	0.666	-180.851	115.653
educ_2.0	-3.2546	75.653	-0.043	0.966	-151.532	145.023
dmage	1.0098	0.333	3.032	0.002	0.357	1.663
dmар	43.3409	4.230	10.246	0.000	35.051	51.631
tot_2.0	38.4390	4.499	8.544	0.000	29.621	47.257
tot_3.0	34.4005	5.543	6.206	0.000	23.537	45.264
tot_4.0	30.4267	7.037	4.324	0.000	16.634	44.220
tot_5.0	7.0749	9.071	0.780	0.435	-10.703	24.853
tot_6.0	0.9879	12.393	0.080	0.936	-23.302	25.278
tot_7.0	-23.9801	16.678	-1.438	0.150	-56.668	8.708
tot_8.0	-65.7002	19.624	-3.348	0.001	-104.162	-27.239

live_1.0	-62.8389	16.988	-3.699	0.000	-96.135	-29.543
live_2.0	-89.3175	18.508	-4.826	0.000	-125.593	-53.042
live_3.0	9.2757	7.249	1.280	0.201	-4.932	23.484
live_4.0	50.1634	6.324	7.932	0.000	37.768	62.558
live_5.0	54.9568	5.330	10.311	0.000	44.510	65.404
live_6.0	47.6046	5.829	8.167	0.000	36.180	59.029
live_8.0	23.5110	8.205	2.865	0.004	7.429	39.593
live_9.0	10.8499	6.301	1.722	0.085	-1.499	23.199
dgestat	114.8464	0.848	135.436	0.000	113.184	116.508
csex	139.3017	2.729	51.047	0.000	133.953	144.650
plur_1	570.5651	9.849	57.932	0.000	551.262	589.868

Omnibus:	1330.580	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2294.692
Skew:	0.055	Prob(JB):	0.00
Kurtosis:	3.684	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_8.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1359.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:48	Log-Likelihood:	-8.6581e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1829.2782	82.808	-22.091	0.000	-1991.579	-1666.977
tobacco	-209.4130	4.062	-51.548	0.000	-217.375	-201.451
alcohol	-60.3328	14.651	-4.118	0.000	-89.048	-31.618
mrace3_2	-185.4097	9.360	-19.809	0.000	-203.755	-167.065
mrace3_3	-139.8489	5.004	-27.947	0.000	-149.657	-130.041
ormothhis	-96.3298	7.791	-12.365	0.000	-111.599	-81.060
adeq_2.0	-41.3289	3.599	-11.485	0.000	-48.382	-34.276
adeq_3.0	-78.3680	7.405	-10.583	0.000	-92.881	-63.855
cardiac	-25.8467	16.620	-1.555	0.120	-58.421	6.727
pre4000	392.5498	12.155	32.296	0.000	368.727	416.373
phyper	-92.0936	9.361	-9.838	0.000	-110.441	-73.746

diabetes	147.7933	10.012	14.762	0.000	128.171	167.416
anemia	12.1373	13.721	0.885	0.376	-14.755	39.030
lung	-22.2730	16.383	-1.360	0.174	-54.382	9.836
dlivord	31.3175	2.608	12.007	0.000	26.205	36.430
educ_0.0	-34.7671	76.130	-0.457	0.648	-183.979	114.444
educ_1.0	-37.5640	75.716	-0.496	0.620	-185.965	110.837
educ_2.0	-8.0441	75.729	-0.106	0.915	-156.470	140.382
dmage	1.0290	0.333	3.091	0.002	0.377	1.681
dmarr	42.4506	4.231	10.033	0.000	34.158	50.743
tot_2.0	27.0325	4.661	5.799	0.000	17.897	36.168
tot_3.0	23.4599	5.638	4.161	0.000	12.411	34.509
tot_4.0	22.0361	7.074	3.115	0.002	8.170	35.902
tot_5.0	0.7847	9.084	0.086	0.931	-17.019	18.589
tot_6.0	-2.7595	12.389	-0.223	0.824	-27.042	21.523
tot_7.0	-24.6610	16.679	-1.479	0.139	-57.350	8.028
tot_8.0	-57.2541	19.595	-2.922	0.003	-95.659	-18.849
live_1.0	-43.7804	17.092	-2.561	0.010	-77.281	-10.280
live_2.0	-70.5153	18.623	-3.786	0.000	-107.016	-34.014
live_3.0	28.0932	7.519	3.736	0.000	13.356	42.830
live_4.0	68.8438	6.630	10.384	0.000	55.849	81.838
live_5.0	73.2652	5.674	12.912	0.000	62.144	84.387
live_6.0	65.6107	6.132	10.699	0.000	53.592	77.630
live_7.0	62.6445	7.178	8.727	0.000	48.576	76.713
live_9.0	28.4606	6.561	4.338	0.000	15.602	41.319
dgestat	114.8441	0.847	135.513	0.000	113.183	116.505
csex	139.2334	2.728	51.037	0.000	133.887	144.580
plur_1	570.2279	9.840	57.950	0.000	550.942	589.514

Omnibus:	1328.243	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2288.706
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

live_9.0

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.377
Model:	OLS	Adj. R-squared:	0.377
Method:	Least Squares	F-statistic:	1360.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:48	Log-Likelihood:	-8.6581e+05
No. Observations:	114610	AIC:	1.732e+06
Df Residuals:	114572	BIC:	1.732e+06

Df Model: 37
Covariance Type: HCO

	coef	std err	z	P> z	[0.025	0.975]
const	-1835.5263	82.737	-22.185	0.000	-1997.687	-1673.365
tobacco	-208.6419	4.060	-51.387	0.000	-216.600	-200.684
alcohol	-60.2315	14.654	-4.110	0.000	-88.953	-31.510
mrace3_2	-185.3598	9.360	-19.804	0.000	-203.705	-167.015
mrace3_3	-139.2679	5.003	-27.838	0.000	-149.073	-129.462
ormothhis	-96.2238	7.791	-12.351	0.000	-111.494	-80.954
adeq_2.0	-41.3572	3.598	-11.493	0.000	-48.410	-34.305
adeq_3.0	-78.6776	7.406	-10.624	0.000	-93.192	-64.163
cardiac	-25.7608	16.610	-1.551	0.121	-58.315	6.794
pre4000	392.8816	12.169	32.286	0.000	369.031	416.732
phyper	-91.9351	9.358	-9.824	0.000	-110.277	-73.593
diabetes	148.4127	10.014	14.821	0.000	128.786	168.039
anemia	12.2965	13.702	0.897	0.369	-14.559	39.151
lung	-22.3396	16.388	-1.363	0.173	-54.459	9.780
dlivord	32.4935	2.554	12.725	0.000	27.489	37.498
educ_0.0	-34.5828	76.078	-0.455	0.649	-183.694	114.528
educ_1.0	-37.4584	75.664	-0.495	0.621	-185.757	110.840
educ_2.0	-9.0194	75.678	-0.119	0.905	-157.346	139.307
dmage	1.2923	0.330	3.916	0.000	0.646	1.939
dmarr	41.1698	4.232	9.728	0.000	32.875	49.464
tot_2.0	30.4403	4.439	6.858	0.000	21.741	39.140
tot_3.0	26.6870	5.495	4.856	0.000	15.916	37.458
tot_4.0	24.6501	6.996	3.523	0.000	10.938	38.362
tot_5.0	2.8751	9.052	0.318	0.751	-14.867	20.617
tot_6.0	-1.5443	12.383	-0.125	0.901	-25.815	22.727
tot_7.0	-25.4990	16.673	-1.529	0.126	-58.177	7.179
tot_8.0	-60.3138	19.587	-3.079	0.002	-98.703	-21.925
live_1.0	-49.7587	16.924	-2.940	0.003	-82.929	-16.588
live_2.0	-76.1202	18.466	-4.122	0.000	-112.313	-39.927
live_3.0	22.6076	7.174	3.151	0.002	8.546	36.669
live_4.0	63.3383	6.229	10.169	0.000	51.131	75.546
live_5.0	67.7137	5.205	13.009	0.000	57.512	77.916
live_6.0	59.9165	5.692	10.527	0.000	48.761	71.072
live_7.0	56.7226	6.781	8.365	0.000	43.431	70.014
live_8.0	35.3358	8.075	4.376	0.000	19.509	51.163
dgestat	114.8312	0.847	135.532	0.000	113.171	116.492
csex	139.2586	2.728	51.047	0.000	133.912	144.606
plur_1	570.2456	9.834	57.986	0.000	550.971	589.520

Omnibus:	1328.485	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2287.290
Skew:	0.056	Prob(JB):	0.00
Kurtosis:	3.683	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

dgestat

OLS Regression Results

```

=====
Dep. Variable:          dbrwt      R-squared:                0.163
Model:                  OLS        Adj. R-squared:            0.162
Method:                 Least Squares    F-statistic:          524.3
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):    0.00
Time:                  12:50:48      Log-Likelihood:        -8.8273e+05
No. Observations:      114610      AIC:                   1.766e+06
Df Residuals:          114572      BIC:                   1.766e+06
Df Model:               37
Covariance Type:       HCO
=====

```

	coef	std err	z	P> z	[0.025	0.975]
const	2374.8320	81.268	29.222	0.000	2215.549	2534.115
tobacco	-222.8466	4.701	-47.407	0.000	-232.060	-213.633
alcohol	-93.7867	17.559	-5.341	0.000	-128.201	-59.372
mrace3_2	-208.5628	10.497	-19.869	0.000	-229.136	-187.989
mrace3_3	-207.7473	5.934	-35.012	0.000	-219.377	-196.118
ormothhis	-134.4683	9.027	-14.896	0.000	-152.161	-116.776
adeq_2.0	-44.1731	4.115	-10.734	0.000	-52.239	-36.107
adeq_3.0	-105.1923	8.523	-12.342	0.000	-121.897	-88.488
cardiac	-45.5594	19.391	-2.349	0.019	-83.566	-7.553
pre4000	443.7955	13.054	33.997	0.000	418.210	469.381
phyper	-163.0804	11.323	-14.403	0.000	-185.272	-140.888
diabetes	98.0858	10.847	9.043	0.000	76.826	119.346
anemia	-10.8344	16.780	-0.646	0.518	-43.722	22.053
lung	-29.1223	18.949	-1.537	0.124	-66.262	8.018
dlivord	37.4869	3.316	11.305	0.000	30.988	43.986
educ_0.0	-5.3321	79.648	-0.067	0.947	-161.439	150.775
educ_1.0	-14.6286	79.140	-0.185	0.853	-169.740	140.482
educ_2.0	20.9614	79.160	0.265	0.791	-134.190	176.113
dmage	-1.9983	0.397	-5.030	0.000	-2.777	-1.220
dmар	53.1296	4.911	10.819	0.000	43.505	62.754
tot_2.0	1.8768	6.220	0.302	0.763	-10.315	14.069
tot_3.0	-12.3326	7.314	-1.686	0.092	-26.669	2.003
tot_4.0	-20.8619	8.879	-2.350	0.019	-38.264	-3.460
tot_5.0	-46.5978	11.161	-4.175	0.000	-68.473	-24.722
tot_6.0	-52.3951	14.772	-3.547	0.000	-81.348	-23.442
tot_7.0	-89.6163	20.290	-4.417	0.000	-129.385	-49.848
tot_8.0	-117.2084	24.348	-4.814	0.000	-164.930	-69.487

live_1.0	-38.5064	25.907	-1.486	0.137	-89.282	12.269
live_2.0	-211.1787	25.903	-8.153	0.000	-261.947	-160.410
live_3.0	35.3395	9.687	3.648	0.000	16.353	54.326
live_4.0	89.8465	8.778	10.236	0.000	72.643	107.050
live_5.0	101.2943	7.849	12.906	0.000	85.911	116.677
live_6.0	88.8025	8.308	10.689	0.000	72.520	105.085
live_7.0	90.2277	9.284	9.719	0.000	72.032	108.424
live_8.0	70.5773	10.478	6.736	0.000	50.040	91.115
live_9.0	52.0460	8.839	5.888	0.000	34.722	69.370
csex	122.8389	3.160	38.878	0.000	116.646	129.032
plur_1	945.8348	14.095	67.104	0.000	918.209	973.461

Omnibus:	15051.142	Durbin-Watson:	1.949
Prob(Omnibus):	0.000	Jarque-Bera (JB):	45437.353
Skew:	-0.697	Prob(JB):	0.00
Kurtosis:	5.751	Cond. No.	3.37e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 3.37e+03. This might indicate that there are strong multicollinearity or other numerical problems.

csex

OLS Regression Results

Dep. Variable:	dbrwt	R-squared:	0.363
Model:	OLS	Adj. R-squared:	0.363
Method:	Least Squares	F-statistic:	1282.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:50:49	Log-Likelihood:	-8.6707e+05
No. Observations:	114610	AIC:	1.734e+06
Df Residuals:	114572	BIC:	1.735e+06
Df Model:	37		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
const	-1697.9547	82.136	-20.672	0.000	-1858.938	-1536.971
tobacco	-208.8933	4.108	-50.854	0.000	-216.944	-200.842
alcohol	-63.3344	14.841	-4.268	0.000	-92.422	-34.247
mrace3_2	-185.8983	9.465	-19.641	0.000	-204.449	-167.348
mrace3_3	-139.4772	5.049	-27.625	0.000	-149.373	-129.582
ormothhis	-96.2411	7.852	-12.257	0.000	-111.631	-80.851
adeq_2.0	-40.6920	3.637	-11.188	0.000	-47.821	-33.563
adeq_3.0	-79.0473	7.484	-10.562	0.000	-93.716	-64.379
cardiac	-24.3799	16.849	-1.447	0.148	-57.403	8.643
pre4000	395.2134	12.386	31.909	0.000	370.938	419.489
phyper	-90.7869	9.412	-9.645	0.000	-109.235	-72.339

diabetes	150.1206	10.059	14.924	0.000	130.405	169.836
anemia	8.2510	13.812	0.597	0.550	-18.820	35.322
lung	-24.8626	16.466	-1.510	0.131	-57.135	7.410
dlivord	25.3138	2.819	8.980	0.000	19.789	30.839
educ_0.0	-52.5043	75.411	-0.696	0.486	-200.306	95.298
educ_1.0	-58.3775	74.974	-0.779	0.436	-205.323	88.568
educ_2.0	-28.4625	74.983	-0.380	0.704	-175.426	118.501
dmage	0.9475	0.336	2.816	0.005	0.288	1.607
dmarr	41.9460	4.278	9.806	0.000	33.562	50.330
tot_2.0	10.4904	5.166	2.031	0.042	0.366	20.615
tot_3.0	7.0735	6.041	1.171	0.242	-4.767	18.914
tot_4.0	7.8578	7.343	1.070	0.285	-6.535	22.250
tot_5.0	-11.4521	9.256	-1.237	0.216	-29.594	6.689
tot_6.0	-13.9548	12.527	-1.114	0.265	-38.507	10.597
tot_7.0	-27.3707	16.868	-1.623	0.105	-60.432	5.691
tot_8.0	-49.1254	19.942	-2.463	0.014	-88.211	-10.039
live_1.0	-14.3998	17.611	-0.818	0.414	-48.917	20.117
live_2.0	-44.7292	19.028	-2.351	0.019	-82.024	-7.434
live_3.0	54.0334	8.392	6.439	0.000	37.585	70.482
live_4.0	93.4258	7.602	12.289	0.000	78.525	108.326
live_5.0	98.0041	6.719	14.587	0.000	84.836	111.172
live_6.0	89.8171	7.099	12.651	0.000	75.903	103.732
live_7.0	87.7114	8.051	10.894	0.000	71.931	103.492
live_8.0	65.6042	9.215	7.119	0.000	47.542	83.666
live_9.0	52.9992	7.474	7.091	0.000	38.350	67.648
dgestat	113.9417	0.848	134.312	0.000	112.279	115.604
plur_1	575.2434	9.910	58.047	0.000	555.820	594.667

```
=====
Omnibus:                1205.595    Durbin-Watson:                1.963
Prob(Omnibus):           0.000    Jarque-Bera (JB):            1974.066
Skew:                    0.069    Prob(JB):                     0.00
Kurtosis:                3.628    Cond. No.                     5.72e+03
=====
```

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

plur_1

OLS Regression Results

```
=====
Dep. Variable:          dbrwt    R-squared:                0.361
Model:                  OLS      Adj. R-squared:           0.361
Method:                 Least Squares    F-statistic:            1137.
Date:                   Sun, 01 Oct 2023    Prob (F-statistic):      0.00
Time:                   12:50:49    Log-Likelihood:          -8.6725e+05
No. Observations:       114610    AIC:                     1.735e+06
Df Residuals:           114572    BIC:                     1.735e+06
```

Df Model: 37
Covariance Type: HCO

	coef	std err	z	P> z	[0.025	0.975]
const	-1460.3795	84.160	-17.352	0.000	-1625.330	-1295.429
tobacco	-208.2516	4.104	-50.745	0.000	-216.295	-200.208
alcohol	-57.7461	14.784	-3.906	0.000	-86.722	-28.770
mrace3_2	-180.3643	9.442	-19.103	0.000	-198.870	-161.859
mrace3_3	-139.5838	5.071	-27.525	0.000	-149.523	-129.644
ormothhis	-95.6891	7.890	-12.128	0.000	-111.153	-80.225
adeq_2.0	-36.6212	3.632	-10.082	0.000	-43.740	-29.502
adeq_3.0	-73.1250	7.495	-9.756	0.000	-87.816	-58.434
cardiac	-23.1924	16.850	-1.376	0.169	-56.218	9.833
pre4000	390.3950	12.300	31.739	0.000	366.287	414.503
phyper	-102.6551	9.486	-10.822	0.000	-121.247	-84.063
diabetes	148.4808	10.192	14.568	0.000	128.504	168.457
anemia	7.1161	13.983	0.509	0.611	-20.291	34.523
lung	-20.4035	16.543	-1.233	0.217	-52.826	12.019
dlivord	23.9574	2.810	8.524	0.000	18.449	29.466
educ_0.0	-50.7277	77.168	-0.657	0.511	-201.974	100.519
educ_1.0	-51.1618	76.750	-0.667	0.505	-201.589	99.265
educ_2.0	-21.5055	76.761	-0.280	0.779	-171.954	128.943
dmage	0.5943	0.337	1.765	0.078	-0.066	1.254
dmarr	41.2489	4.281	9.636	0.000	32.859	49.639
tot_2.0	11.4696	5.180	2.214	0.027	1.317	21.623
tot_3.0	8.2774	6.051	1.368	0.171	-3.582	20.137
tot_4.0	10.1513	7.340	1.383	0.167	-4.234	24.537
tot_5.0	-10.0112	9.254	-1.082	0.279	-28.148	8.126
tot_6.0	-6.1952	12.508	-0.495	0.620	-30.710	18.320
tot_7.0	-26.7437	16.879	-1.584	0.113	-59.826	6.338
tot_8.0	-37.7634	19.749	-1.912	0.056	-76.471	0.945
live_1.0	-554.3313	15.153	-36.583	0.000	-584.030	-524.633
live_2.0	-45.6357	19.236	-2.372	0.018	-83.337	-7.934
live_3.0	54.9656	8.407	6.538	0.000	38.489	71.443
live_4.0	95.8176	7.597	12.613	0.000	80.928	110.707
live_5.0	100.0967	6.722	14.892	0.000	86.922	113.271
live_6.0	93.9365	7.100	13.231	0.000	80.021	107.852
live_7.0	90.0996	8.058	11.181	0.000	74.306	105.893
live_8.0	69.1710	9.211	7.510	0.000	51.118	87.224
live_9.0	55.4546	7.490	7.404	0.000	40.774	70.135
dgestat	120.5106	0.833	144.741	0.000	118.879	122.142
csex	140.7779	2.762	50.961	0.000	135.364	146.192

Omnibus:	1322.186	Durbin-Watson:	1.952
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2291.528
Skew:	0.049	Prob(JB):	0.00
Kurtosis:	3.686	Cond. No.	5.72e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

[62]: *#adding squares and interactions*

```
#the interaction of age and tobacco could have significant effects; people who  
→are older and smoke have probably  
#been smoking longer, and may see more drastic health effects  
data1['agetob'] = data1['dimage'].astype('int64')*data1['tobacco'].astype('int64')  
  
#age and gestation length could affect weight nonlinearly; for example, most of  
→the growing could be done in the last  
#two weeks of the pregnancy, or birthweight lowers drastically after age 45  
data1['agesq'] = data1['dimage'].astype('int64')**2  
data1['gestatsqr'] = data1['dgestat'].astype('int64')**2  
  
xint = ['gestatsqr', 'agesq', 'agetob']
```

[63]: *#estimating the coefficients with tobacco and square terms*

```
vals = sm.OLS(data1[y], sm.add_constant(data1[D+x1+x3+xint]))  
out = vals.fit(cov_type = 'HCO')  
print(out.summary())
```

OLS Regression Results

```
=====
Dep. Variable:          dbrwt      R-squared:                0.402
Model:                  OLS        Adj. R-squared:           0.402
Method:                 Least Squares    F-statistic:        1269.
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):    0.00
Time:                  12:34:58          Log-Likelihood:       -8.6341e+05
No. Observations:      114610           AIC:                1.727e+06
Df Residuals:          114568           BIC:                1.727e+06
Df Model:               41
Covariance Type:       HCO
=====
```

	coef	std err	z	P> z	[0.025	0.975]
const	-9486.4774	202.064	-46.948	0.000	-9882.516	-9090.439
tobacco	-115.5547	18.499	-6.246	0.000	-151.813	-79.297
alcohol	-55.2962	14.442	-3.829	0.000	-83.601	-26.991
mrace3_2	-194.6274	9.269	-20.998	0.000	-212.794	-176.461
mrace3_3	-136.7419	4.905	-27.876	0.000	-146.356	-127.127
ormothhis	-97.4847	7.597	-12.831	0.000	-112.375	-82.594
adeq_2.0	-35.2493	3.512	-10.038	0.000	-42.132	-28.367

adeq_3.0	-69.9060	7.280	-9.603	0.000	-84.174	-55.638
cardiac	-32.0772	16.328	-1.965	0.049	-64.079	-0.075
pre4000	396.2326	11.948	33.164	0.000	372.815	419.650
phyper	-98.5741	9.192	-10.724	0.000	-116.589	-80.559
diabetes	137.3622	9.750	14.088	0.000	118.252	156.472
anemia	14.6294	13.520	1.082	0.279	-11.870	41.129
lung	-21.2107	15.946	-1.330	0.183	-52.465	10.043
dlivord	24.3504	2.713	8.975	0.000	19.033	29.668
educ_0.0	-58.7321	72.717	-0.808	0.419	-201.254	83.790
educ_1.0	-64.5809	72.301	-0.893	0.372	-206.287	77.126
educ_2.0	-40.1295	72.312	-0.555	0.579	-181.858	101.599
dmage	11.5121	2.186	5.266	0.000	7.227	15.797
dmarr	30.9033	4.290	7.203	0.000	22.495	39.312
tot_2.0	12.1558	4.998	2.432	0.015	2.360	21.952
tot_3.0	10.3327	5.844	1.768	0.077	-1.120	21.786
tot_4.0	12.4807	7.092	1.760	0.078	-1.419	26.380
tot_5.0	-4.4101	8.955	-0.492	0.622	-21.961	13.141
tot_6.0	-1.5666	12.130	-0.129	0.897	-25.340	22.207
tot_7.0	-18.8197	16.292	-1.155	0.248	-50.752	13.113
tot_8.0	-30.2939	19.166	-1.581	0.114	-67.859	7.271
live_1.0	-21.6714	17.430	-1.243	0.214	-55.834	12.491
live_2.0	-21.6500	18.291	-1.184	0.237	-57.500	14.200
live_3.0	45.0491	8.121	5.547	0.000	29.133	60.966
live_4.0	83.1963	7.347	11.324	0.000	68.797	97.595
live_5.0	85.1393	6.484	13.130	0.000	72.430	97.848
live_6.0	78.1036	6.856	11.391	0.000	64.665	91.542
live_7.0	75.4336	7.790	9.683	0.000	60.166	90.702
live_8.0	56.3931	8.897	6.338	0.000	38.955	73.831
live_9.0	49.1937	7.207	6.826	0.000	35.069	63.318
dgestat	526.4294	9.794	53.751	0.000	507.234	545.625
csex	138.5567	2.672	51.850	0.000	133.319	143.794
plur_1	546.3305	9.704	56.301	0.000	527.312	565.349
gestatsqr	-5.5414	0.128	-43.360	0.000	-5.792	-5.291
agesq	-0.1858	0.038	-4.952	0.000	-0.259	-0.112
agetob	-3.5517	0.687	-5.170	0.000	-4.898	-2.205

Omnibus:	2061.624	Durbin-Watson:	1.964
Prob(Omnibus):	0.000	Jarque-Bera (JB):	3256.831
Skew:	0.183	Prob(JB):	0.00
Kurtosis:	3.740	Cond. No.	2.26e+05

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 2.26e+05. This might indicate that there are strong multicollinearity or other numerical problems.

```
[64]: #we believe these coefficients are either completely unrelated to the outcome
      →and treatment (omaps, fmaps)
      #or they are colinear with other controls or the treatment (drink5/alcohol,
      →cigar6/tobacco)
      xbad = ['omaps', 'fmaps', 'cigar6', 'drink5']

      #estimating the coefficients with bad controls
      vals = sm.OLS(data1[y], sm.add_constant(data1[D+x1+x3+xbad]))
      out = vals.fit(cov_type = 'HCO')
      print(out.summary())
```

OLS Regression Results

Dep. Variable:	dbrrwt	R-squared:	0.383
Model:	OLS	Adj. R-squared:	0.383
Method:	Least Squares	F-statistic:	1311.
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	12:35:01	Log-Likelihood:	-8.6525e+05
No. Observations:	114610	AIC:	1.731e+06
Df Residuals:	114567	BIC:	1.731e+06
Df Model:	42		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	-2178.6276	81.988	-26.572	0.000	-2339.322	-2017.934
tobacco	-111.7678	9.866	-11.329	0.000	-131.104	-92.431
alcohol	53.2275	28.689	1.855	0.064	-3.001	109.456
mrace3_2	-187.9946	9.367	-20.070	0.000	-206.354	-169.636
mrace3_3	-136.7458	4.986	-27.423	0.000	-146.519	-126.972
ormothhis	-94.2851	7.740	-12.182	0.000	-109.455	-79.115
adeq_2.0	-41.7761	3.577	-11.679	0.000	-48.787	-34.766
adeq_3.0	-75.7031	7.325	-10.334	0.000	-90.061	-61.345
cardiac	-24.5076	16.493	-1.486	0.137	-56.834	7.819
pre4000	394.1374	12.129	32.496	0.000	370.365	417.910
phyper	-89.2444	9.335	-9.560	0.000	-107.541	-70.948
diabetes	149.9104	10.005	14.983	0.000	130.301	169.520
anemia	8.5791	13.626	0.630	0.529	-18.127	35.285
lung	-20.7615	16.378	-1.268	0.205	-52.863	11.340
ddivord	23.4042	2.765	8.464	0.000	17.984	28.824
educ_0.0	-40.1661	74.606	-0.538	0.590	-186.391	106.059
educ_1.0	-41.4848	74.189	-0.559	0.576	-186.893	103.923
educ_2.0	-12.1267	74.199	-0.163	0.870	-157.554	133.301
dmage	1.1166	0.331	3.373	0.001	0.468	1.765
dmar	37.4773	4.205	8.913	0.000	29.236	45.718
tot_2.0	11.8855	5.085	2.337	0.019	1.919	21.852

tot_3.0	10.5095	5.938	1.770	0.077	-1.128	22.147
tot_4.0	12.6057	7.212	1.748	0.081	-1.531	26.742
tot_5.0	-5.7660	9.096	-0.634	0.526	-23.593	12.061
tot_6.0	-2.2299	12.325	-0.181	0.856	-26.387	21.927
tot_7.0	-18.3878	16.525	-1.113	0.266	-50.776	14.000
tot_8.0	-38.1519	19.567	-1.950	0.051	-76.502	0.198
live_1.0	-13.9322	17.172	-0.811	0.417	-47.588	19.723
live_2.0	-41.5647	18.628	-2.231	0.026	-78.076	-5.054
live_3.0	49.4448	8.235	6.004	0.000	33.304	65.586
live_4.0	89.4578	7.463	11.986	0.000	74.830	104.086
live_5.0	93.3864	6.608	14.132	0.000	80.435	106.338
live_6.0	85.9189	6.984	12.302	0.000	72.230	99.608
live_7.0	83.4042	7.931	10.517	0.000	67.860	98.948
live_8.0	62.2119	9.076	6.854	0.000	44.423	80.001
live_9.0	52.4079	7.342	7.138	0.000	38.018	66.797
dgestat	110.5381	0.815	135.673	0.000	108.941	112.135
csex	140.4691	2.715	51.732	0.000	135.147	145.791
plur_1	565.3757	9.630	58.711	0.000	546.502	584.250
omaps	5.2778	1.531	3.448	0.001	2.277	8.278
fmaps	54.8350	2.871	19.103	0.000	49.209	60.461
cigar6	-45.5685	4.214	-10.813	0.000	-53.828	-37.309
drink5	-53.0830	12.907	-4.113	0.000	-78.380	-27.786

Omnibus:	1305.024	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	2120.194
Skew:	0.089	Prob(JB):	0.00
Kurtosis:	3.642	Cond. No.	5.90e+03

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

[2] The condition number is large, 5.9e+03. This might indicate that there are strong multicollinearity or other numerical problems.

```
[65]: #oaxaca covariates only dummies for saturation

#outcome
y = ['dbrwt']
#treatment
D = ['tobacco']
#cor with y and D
x1o = ['alcohol', 'mrace3_2', 'mrace3_3', 'ormothhis', 'adeq_2.0', 'adeq_3.0',
      'cardiac', 'pre4000', 'phyper',
      'diabetes', 'anemia', 'lung', 'dlivord', 'educ_0.0', 'educ_1.0', 'educ_2.0',
      'dmar', 'tot_2.0',
      'tot_3.0', 'tot_4.0', 'tot_5.0', 'tot_6.0', 'tot_7.0', 'tot_8.0', 'live_1.0',
      'live_2.0', 'live_3.0', 'live_4.0',
```

```

        'live_5.0','live_6.0','live_7.0','live_8.0', 'live_9.0']
#cor with D not y
x2 = []
#cor with y not D
x3o = ['csex', 'plur_1']

```

```

[66]: #demean the variables ( $X_i - \bar{X}$ )
for item in x1o+x3o:
    data1[item+'demean'] = data1[item].sub(data1[item].mean())

demeaned = ['alcoholdemean',
            'mrace3_2demean', 'mrace3_3demean', 'ormothhisdemean', 'adeq_2.0demean',
            'adeq_3.0demean', 'cardiacdemean', 'pre4000demean', 'phyperdemean',
            'diabetesdemean', 'anemiademean', 'lungdemean',
            'dlivorddemean', 'educ_0.0demean', 'educ_1.0demean', 'educ_2.0demean',
            'dmardemean', 'csexdemean',
            'tot_2.0demean', 'tot_3.0demean', 'tot_4.0demean', 'tot_5.0demean',
            'tot_6.0demean', 'tot_7.0demean', 'tot_8.0demean', 'live_1.0demean',
            'live_2.0demean', 'live_3.0demean', 'live_4.0demean', 'live_5.0demean',
            'live_6.0demean', 'live_7.0demean', 'live_8.0demean', 'live_9.0demean',
            'plur_1demean']

#interact the demeaned variables with the treatment ( $D_i(X_i - \bar{X})$ )
for item in demeaned:
    data1[item + 'tobacco'] = data1[item]*data1['tobacco']

dminter = ['alcoholdemeantobacco', 'mrace3_2demeantobacco',
            'mrace3_3demeantobacco', 'ormothhisdemeantobacco',
            'adeq_2.0demeantobacco', 'adeq_3.0demeantobacco',
            'cardiacdemeantobacco', 'pre4000demeantobacco', 'phyperdemeantobacco',
            'diabetesdemeantobacco', 'anemiademeantobacco',
            'lungdemeantobacco', 'dlivorddemeantobacco', 'educ_0.0demeantobacco',
            'educ_2.0demeantobacco', 'educ_1.0demeantobacco',
            'dmardemeantobacco',
            'csexdemeantobacco', 'tot_2.0demeantobacco', 'tot_3.0demeantobacco',
            'tot_4.0demeantobacco', 'tot_5.0demeantobacco', 'tot_6.0demeantobacco',
            'tot_7.0demeantobacco', 'tot_8.0demeantobacco', 'live_2.0demeantobacco',
            'live_3.0demeantobacco', 'live_4.0demeantobacco',
            'live_5.0demeantobacco', 'live_6.0demeantobacco',
            'live_7.0demeantobacco', 'live_8.0demeantobacco',
            'live_9.0demeantobacco', 'plur_1demeantobacco',
            'live_1.0demeantobacco']

```

```

[67]: vals = sm.OLS(data1[y], sm.add_constant(data1[D+x1o+x3o+dminter]))
out = vals.fit(cov_type = 'HCO')

```

```
print(out.summary())
```

```
#oaxaca estimate via regression
```

OLS Regression Results

```
=====
Dep. Variable:          dbrwt    R-squared:                0.164
Model:                  OLS      Adj. R-squared:           0.163
Method:                 Least Squares    F-statistic:         2090.
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):      0.00
Time:                  12:35:09    Log-Likelihood:        -8.8266e+05
No. Observations:      114610    AIC:                   1.765e+06
Df Residuals:          114538    BIC:                   1.766e+06
Df Model:              71
Covariance Type:       HCO
=====
```

```
=====
                                coef      std err          z      P>|z|      [0.025
0.975]
-----
const                2302.8966      82.666      27.858      0.000      2140.874
2464.919
tobacco              -218.8119       5.581     -39.204      0.000     -229.751
-207.873
alcohol              -15.2080      24.633      -0.617      0.537      -63.488
33.072
mrace3_2             -211.8858      10.591     -20.007      0.000     -232.643
-191.128
mrace3_3             -206.9223       6.613     -31.288      0.000     -219.884
-193.960
ormothhis            -135.0967       9.536     -14.167      0.000     -153.787
-116.406
adeq_2.0             -40.2654       4.536      -8.877      0.000      -49.156
-31.375
adeq_3.0             -96.9767       9.856      -9.839      0.000     -116.295
-77.659
cardiac              -40.6683      20.591      -1.975      0.048      -81.026
-0.311
pre4000              441.8313      13.611      32.462      0.000      415.155
468.508
phyper              -170.4147      11.919     -14.298      0.000     -193.776
-147.054
diabetes              84.4447       11.751       7.186      0.000       61.414
107.476
anemia               -1.4728      18.395      -0.080      0.936      -37.525
34.580
lung                -16.6682      20.740      -0.804      0.422      -57.317
=====
```

23.981					
dlivord	41.5482	3.730	11.140	0.000	34.238
48.858					
educ_0.0	-2.0392	81.303	-0.025	0.980	-161.391
157.312					
educ_1.0	-14.3029	80.758	-0.177	0.859	-172.585
143.980					
educ_2.0	13.8540	80.782	0.171	0.864	-144.476
172.184					
dmar	53.7473	5.430	9.899	0.000	43.106
64.389					
tot_2.0	-1.8531	6.778	-0.273	0.785	-15.138
11.432					
tot_3.0	-12.6683	7.992	-1.585	0.113	-28.332
2.996					
tot_4.0	-29.3406	9.740	-3.012	0.003	-48.431
-10.251					
tot_5.0	-52.6223	12.455	-4.225	0.000	-77.035
-28.210					
tot_6.0	-57.8893	16.885	-3.428	0.001	-90.984
-24.795					
tot_7.0	-91.1741	23.263	-3.919	0.000	-136.768
-45.580					
tot_8.0	-147.8490	27.979	-5.284	0.000	-202.687
-93.011					
live_1.0	-42.6083	28.275	-1.507	0.132	-98.026
12.810					
live_2.0	-230.9783	31.287	-7.383	0.000	-292.299
-169.658					
live_3.0	38.3551	10.710	3.581	0.000	17.364
59.346					
live_4.0	92.0723	9.626	9.565	0.000	73.205
110.939					
live_5.0	101.0564	8.627	11.715	0.000	84.149
117.964					
live_6.0	85.6823	9.136	9.378	0.000	67.776
103.589					
live_7.0	80.5471	10.266	7.846	0.000	60.426
100.668					
live_8.0	63.5410	11.583	5.486	0.000	40.838
86.244					
live_9.0	42.0208	9.867	4.259	0.000	22.682
61.360					
csex	123.0078	3.437	35.793	0.000	116.272
129.743					
plur_1	960.4314	15.318	62.701	0.000	930.409
990.453					
alcoholdeameantobacco	-148.1035	34.778	-4.259	0.000	-216.267

-79.940					
mrace3_2demeantobacco	67.3415	72.398	0.930	0.352	-74.557
209.240					
mrace3_3demeantobacco	39.4503	15.217	2.593	0.010	9.626
69.274					
ormothhisdemeantobacco	57.5947	29.234	1.970	0.049	0.296
114.893					
adeq_2.0demeantobacco	-14.2573	10.688	-1.334	0.182	-35.206
6.692					
adeq_3.0demeantobacco	-17.6465	19.714	-0.895	0.371	-56.285
20.992					
cardiacdemeantobacco	-41.9892	60.272	-0.697	0.486	-160.121
76.143					
pre4000demeantobacco	-15.6436	47.352	-0.330	0.741	-108.452
77.165					
phyperdemeantobacco	75.8739	37.817	2.006	0.045	1.753
149.995					
diabetesdemeantobacco	61.7748	30.078	2.054	0.040	2.822
120.727					
anemiademeantobacco	-38.9452	43.357	-0.898	0.369	-123.923
46.032					
lungdemeantobacco	-46.6486	49.291	-0.946	0.344	-143.258
49.961					
dlivorddemeantobacco	-31.1579	7.976	-3.907	0.000	-46.790
-15.526					
educ_0.0demeantobacco	335.7527	88.602	3.789	0.000	162.095
509.410					
educ_2.0demeantobacco	388.4636	84.237	4.612	0.000	223.363
553.564					
educ_1.0demeantobacco	383.6532	83.813	4.578	0.000	219.384
547.923					
dmardemeantobacco	-36.7397	10.295	-3.569	0.000	-56.918
-16.561					
csexdemeantobacco	-2.3480	8.713	-0.269	0.788	-19.424
14.728					
tot_2.0demeantobacco	-3.2933	16.897	-0.195	0.845	-36.410
29.823					
tot_3.0demeantobacco	-37.1348	19.392	-1.915	0.056	-75.143
0.874					
tot_4.0demeantobacco	2.0315	23.090	0.088	0.930	-43.224
47.287					
tot_5.0demeantobacco	-11.3172	27.657	-0.409	0.682	-65.525
42.890					
tot_6.0demeantobacco	-18.4160	34.870	-0.528	0.597	-86.761
49.929					
tot_7.0demeantobacco	-18.9724	46.897	-0.405	0.686	-110.888
72.943					
tot_8.0demeantobacco	61.7143	55.904	1.104	0.270	-47.856

```

171.285
live_2.0demeantobacco    115.4694    55.550    2.079    0.038    6.594
224.345
live_3.0demeantobacco    16.8224    24.723    0.680    0.496   -31.634
65.278
live_4.0demeantobacco     1.3213    23.319    0.057    0.955   -44.384
47.026
live_5.0demeantobacco     2.7716    20.965    0.132    0.895   -38.320
43.863
live_6.0demeantobacco    13.8397    22.202    0.623    0.533   -29.675
57.355
live_7.0demeantobacco    47.8694    24.076    1.988    0.047    0.681
95.058
live_8.0demeantobacco    23.2983    27.078    0.860    0.390   -29.774
76.371
live_9.0demeantobacco    18.9338    21.631    0.875    0.381   -23.462
61.329
plur_1demeantobacco     -102.6619    37.524   -2.736    0.006  -176.208
-29.115
live_1.0demeantobacco     41.6161    68.308    0.609    0.542   -92.265
175.497
=====
Omnibus:                  15064.925    Durbin-Watson:              1.949
Prob(Omnibus):            0.000    Jarque-Bera (JB):          45496.780
Skew:                     -0.698    Prob(JB):                  0.00
Kurtosis:                 5.753    Cond. No.                  1.72e+03
=====

```

Notes:

- [1] Standard Errors are heteroscedasticity robust (HCO)
- [2] The condition number is large, 1.72e+03. This might indicate that there are strong multicollinearity or other numerical problems.

```

[48]: #estimating h1(.) and predicting using all data

vals = sm.OLS(data1[data1['tobacco'] == 1]['dbrwt'], sm.
    ↳add_constant(data1[data1['tobacco'] == 1][x1o+x3o]))
out = vals.fit(cov_type = 'HCO')
print(out.summary())
data1['tob1h'] = out.predict(sm.add_constant(data1[x1o+x3o]))

#estimating h0(.) and predicting using all data

vals = sm.OLS(data1[data1['tobacco'] == 0]['dbrwt'], sm.
    ↳add_constant(data1[data1['tobacco'] == 0][x1o+x3o]))
out1 = vals.fit(cov_type = 'HCO')
print(out1.summary())

```

```
data1['tob0h'] = out1.predict(sm.add_constant(data1[x1o+x3o]))
```

OLS Regression Results

```
=====
Dep. Variable:          dbrwt      R-squared:          0.104
Model:                  OLS        Adj. R-squared:       0.102
Method:                 Least Squares    F-statistic:      270.5
Date:                  Sun, 01 Oct 2023    Prob (F-statistic): 0.00
Time:                  11:59:58      Log-Likelihood:    -1.4089e+05
No. Observations:      18266        AIC:              2.819e+05
Df Residuals:          18230        BIC:              2.821e+05
Df Model:               35
Covariance Type:       HCO
=====
```

	coef	std err	z	P> z	[0.025	0.975]
const	1883.3747	43.894	42.907	0.000	1797.344	1969.406
alcohol	-163.3115	24.550	-6.652	0.000	-211.429	-115.194
mrace3_2	-144.5443	71.620	-2.018	0.044	-284.916	-4.173
mrace3_3	-167.4720	13.704	-12.220	0.000	-194.332	-140.612
ormothhis	-77.5020	27.635	-2.804	0.005	-131.666	-23.338
adeq_2.0	-54.5226	9.678	-5.634	0.000	-73.492	-35.554
adeq_3.0	-114.6232	17.073	-6.714	0.000	-148.086	-81.161
cardiac	-82.6574	56.646	-1.459	0.145	-193.682	28.367
pre4000	426.1877	45.354	9.397	0.000	337.295	515.080
phyper	-94.5408	35.890	-2.634	0.008	-164.884	-24.198
diabetes	146.2195	27.688	5.281	0.000	91.952	200.487
anemia	-40.4180	39.261	-1.029	0.303	-117.369	36.533
lung	-63.3168	44.716	-1.416	0.157	-150.958	24.325
dlivord	10.3902	7.050	1.474	0.141	-3.427	24.208
educ_0.0	333.7135	35.216	9.476	0.000	264.691	402.736
educ_1.0	369.3503	22.421	16.473	0.000	325.405	413.295
educ_2.0	402.3176	23.876	16.850	0.000	355.522	449.113
dmarr	17.0077	8.747	1.944	0.052	-0.137	34.152
csex	120.6599	8.006	15.071	0.000	104.968	136.352
tot_2.0	-5.1465	15.477	-0.333	0.740	-35.482	25.189
tot_3.0	-49.8031	17.669	-2.819	0.005	-84.434	-15.172
tot_4.0	-27.3091	20.935	-1.304	0.192	-68.341	13.723
tot_5.0	-63.9396	24.694	-2.589	0.010	-112.339	-15.540
tot_6.0	-76.3054	30.510	-2.501	0.012	-136.103	-16.507
tot_7.0	-110.1465	40.720	-2.705	0.007	-189.957	-30.336
tot_8.0	-86.1346	48.399	-1.780	0.075	-180.995	8.726
live_1.0	-0.9922	62.181	-0.016	0.987	-122.865	120.881
live_2.0	-115.5088	45.901	-2.516	0.012	-205.474	-25.544
live_3.0	55.1775	22.283	2.476	0.013	11.504	98.851
live_4.0	93.3936	21.240	4.397	0.000	51.764	135.023
live_5.0	103.8280	19.108	5.434	0.000	66.377	141.279
live_6.0	99.5220	20.235	4.918	0.000	59.862	139.182

live_7.0	128.4165	21.778	5.897	0.000	85.733	171.100
live_8.0	86.8393	24.476	3.548	0.000	38.867	134.811
live_9.0	60.9546	19.249	3.167	0.002	23.227	98.682
plur_1	857.7695	34.256	25.040	0.000	790.630	924.909

Omnibus:	2196.366	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	6112.474
Skew:	-0.663	Prob(JB):	0.00
Kurtosis:	5.505	Cond. No.	824.

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

OLS Regression Results

Dep. Variable:	dbrrwt	R-squared:	0.152
Model:	OLS	Adj. R-squared:	0.152
Method:	Least Squares	F-statistic:	409.5
Date:	Sun, 01 Oct 2023	Prob (F-statistic):	0.00
Time:	11:59:58	Log-Likelihood:	-7.4177e+05
No. Observations:	96344	AIC:	1.484e+06
Df Residuals:	96308	BIC:	1.484e+06
Df Model:	35		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
-----	-----	-----	-----	-----	-----	-----
const	2302.8966	82.666	27.858	0.000	2140.874	2464.919
alcohol	-15.2080	24.633	-0.617	0.537	-63.488	33.072
mrace3_2	-211.8858	10.591	-20.007	0.000	-232.643	-191.128
mrace3_3	-206.9223	6.613	-31.288	0.000	-219.884	-193.960
ormothhis	-135.0967	9.536	-14.167	0.000	-153.787	-116.406
adeq_2.0	-40.2654	4.536	-8.877	0.000	-49.156	-31.375
adeq_3.0	-96.9767	9.856	-9.839	0.000	-116.295	-77.659
cardiac	-40.6683	20.591	-1.975	0.048	-81.026	-0.311
pre4000	441.8313	13.611	32.462	0.000	415.155	468.508
phyper	-170.4147	11.919	-14.298	0.000	-193.776	-147.054
diabetes	84.4447	11.751	7.186	0.000	61.414	107.476
anemia	-1.4728	18.395	-0.080	0.936	-37.525	34.580
lung	-16.6682	20.740	-0.804	0.422	-57.317	23.981
dlivord	41.5482	3.730	11.140	0.000	34.238	48.858
educ_0.0	-2.0392	81.303	-0.025	0.980	-161.391	157.312
educ_1.0	-14.3029	80.758	-0.177	0.859	-172.585	143.980
educ_2.0	13.8540	80.782	0.171	0.864	-144.476	172.184
dmarr	53.7473	5.430	9.899	0.000	43.106	64.389
csex	123.0078	3.437	35.793	0.000	116.272	129.743
tot_2.0	-1.8531	6.778	-0.273	0.785	-15.138	11.432
tot_3.0	-12.6683	7.992	-1.585	0.113	-28.332	2.996

tot_4.0	-29.3406	9.740	-3.012	0.003	-48.431	-10.251
tot_5.0	-52.6223	12.455	-4.225	0.000	-77.035	-28.210
tot_6.0	-57.8893	16.885	-3.428	0.001	-90.984	-24.795
tot_7.0	-91.1741	23.263	-3.919	0.000	-136.768	-45.580
tot_8.0	-147.8490	27.979	-5.284	0.000	-202.687	-93.011
live_1.0	-42.6083	28.275	-1.507	0.132	-98.026	12.810
live_2.0	-230.9783	31.287	-7.383	0.000	-292.299	-169.658
live_3.0	38.3551	10.710	3.581	0.000	17.364	59.346
live_4.0	92.0723	9.626	9.565	0.000	73.205	110.939
live_5.0	101.0564	8.627	11.715	0.000	84.149	117.964
live_6.0	85.6823	9.136	9.378	0.000	67.776	103.589
live_7.0	80.5471	10.266	7.846	0.000	60.426	100.668
live_8.0	63.5410	11.583	5.486	0.000	40.838	86.244
live_9.0	42.0208	9.867	4.259	0.000	22.682	61.360
plur_1	960.4314	15.318	62.701	0.000	930.409	990.453

```
=====
Omnibus:                12881.615    Durbin-Watson:                1.950
Prob(Omnibus):           0.000    Jarque-Bera (JB):            39494.877
Skew:                    -0.705    Prob(JB):                     0.00
Kurtosis:                5.802    Cond. No.                    315.
=====
```

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

```
[49]: #ATE
      #oaxaca coefficient by differencing
      print(data1['tob1h'].mean() - data1['tob0h'].mean())
```

-218.81192044018917

```
[68]: #estimating coeff for ATT
      #ONLY USE TOBACCo==1 VALUES

      #estimating h1(.) and predicting using only positive treatment data

      vals = sm.OLS(data1[data1['tobacco'] == 1]['dbrwt'], sm.
        ↳add_constant(data1[data1['tobacco'] == 1][x1o+x3o]))
      out = vals.fit(cov_type = 'HCO')
      print(out.summary())
      data1['tob1h'] = out.predict(sm.
        ↳add_constant(data1[data1['tobacco']==1][x1o+x3o]))

      #estimating h0(.) and predicting using only positive treatment data

      vals = sm.OLS(data1[data1['tobacco'] == 0]['dbrwt'], sm.
        ↳add_constant(data1[data1['tobacco'] == 0][x1o+x3o]))
      out1 = vals.fit(cov_type = 'HCO')
```

```
print(out1.summary())
data1['tob0h'] = out1.predict(sm.
    ↳add_constant(data1[data1['tobacco']==1][x1o+x3o]))
```

OLS Regression Results

```
=====
Dep. Variable:          dbrwt      R-squared:                0.104
Model:                  OLS        Adj. R-squared:            0.102
Method:                 Least Squares    F-statistic:          270.5
Date:                  Sun, 01 Oct 2023    Prob (F-statistic):      0.00
Time:                  12:36:51      Log-Likelihood:         -1.4089e+05
No. Observations:      18266          AIC:                   2.819e+05
Df Residuals:          18230          BIC:                   2.821e+05
Df Model:               35
Covariance Type:       HCO
=====
```

	coef	std err	z	P> z	[0.025	0.975]
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alcohol	-163.3115	24.550	-6.652	0.000	-211.429	-115.194
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mrace3_3	-167.4720	13.704	-12.220	0.000	-194.332	-140.612
ormothhis	-77.5020	27.635	-2.804	0.005	-131.666	-23.338
adeq_2.0	-54.5226	9.678	-5.634	0.000	-73.492	-35.554
adeq_3.0	-114.6232	17.073	-6.714	0.000	-148.086	-81.161
cardiac	-82.6574	56.646	-1.459	0.145	-193.682	28.367
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educ_2.0	402.3176	23.876	16.850	0.000	355.522	449.113
dmr	17.0077	8.747	1.944	0.052	-0.137	34.152
tot_2.0	-5.1465	15.477	-0.333	0.740	-35.482	25.189
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tot_4.0	-27.3091	20.935	-1.304	0.192	-68.341	13.723
tot_5.0	-63.9396	24.694	-2.589	0.010	-112.339	-15.540
tot_6.0	-76.3054	30.510	-2.501	0.012	-136.103	-16.507
tot_7.0	-110.1465	40.720	-2.705	0.007	-189.957	-30.336
tot_8.0	-86.1346	48.399	-1.780	0.075	-180.995	8.726
live_1.0	-0.9922	62.181	-0.016	0.987	-122.865	120.881
live_2.0	-115.5088	45.901	-2.516	0.012	-205.474	-25.544
live_3.0	55.1775	22.283	2.476	0.013	11.504	98.851
live_4.0	93.3936	21.240	4.397	0.000	51.764	135.023
live_5.0	103.8280	19.108	5.434	0.000	66.377	141.279

live_6.0	99.5220	20.235	4.918	0.000	59.862	139.182
live_7.0	128.4165	21.778	5.897	0.000	85.733	171.100
live_8.0	86.8393	24.476	3.548	0.000	38.867	134.811
live_9.0	60.9546	19.249	3.167	0.002	23.227	98.682
csex	120.6599	8.006	15.071	0.000	104.968	136.352
plur_1	857.7695	34.256	25.040	0.000	790.630	924.909

Omnibus:	2196.366	Durbin-Watson:	1.962
Prob(Omnibus):	0.000	Jarque-Bera (JB):	6112.474
Skew:	-0.663	Prob(JB):	0.00
Kurtosis:	5.505	Cond. No.	824.

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

OLS Regression Results

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Method:	Least Squares	F-statistic:	409.5
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Time:	12:36:51	Log-Likelihood:	-7.4177e+05
No. Observations:	96344	AIC:	1.484e+06
Df Residuals:	96308	BIC:	1.484e+06
Df Model:	35		
Covariance Type:	HCO		

	coef	std err	z	P> z	[0.025	0.975]
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mrace3_3	-206.9223	6.613	-31.288	0.000	-219.884	-193.960
ormothhis	-135.0967	9.536	-14.167	0.000	-153.787	-116.406
adeq_2.0	-40.2654	4.536	-8.877	0.000	-49.156	-31.375
adeq_3.0	-96.9767	9.856	-9.839	0.000	-116.295	-77.659
cardiac	-40.6683	20.591	-1.975	0.048	-81.026	-0.311
pre4000	441.8313	13.611	32.462	0.000	415.155	468.508
phyper	-170.4147	11.919	-14.298	0.000	-193.776	-147.054
diabetes	84.4447	11.751	7.186	0.000	61.414	107.476
anemia	-1.4728	18.395	-0.080	0.936	-37.525	34.580
lung	-16.6682	20.740	-0.804	0.422	-57.317	23.981
dlivord	41.5482	3.730	11.140	0.000	34.238	48.858
educ_0.0	-2.0392	81.303	-0.025	0.980	-161.391	157.312
educ_1.0	-14.3029	80.758	-0.177	0.859	-172.585	143.980
educ_2.0	13.8540	80.782	0.171	0.864	-144.476	172.184
dmarr	53.7473	5.430	9.899	0.000	43.106	64.389
tot_2.0	-1.8531	6.778	-0.273	0.785	-15.138	11.432

tot_3.0	-12.6683	7.992	-1.585	0.113	-28.332	2.996
tot_4.0	-29.3406	9.740	-3.012	0.003	-48.431	-10.251
tot_5.0	-52.6223	12.455	-4.225	0.000	-77.035	-28.210
tot_6.0	-57.8893	16.885	-3.428	0.001	-90.984	-24.795
tot_7.0	-91.1741	23.263	-3.919	0.000	-136.768	-45.580
tot_8.0	-147.8490	27.979	-5.284	0.000	-202.687	-93.011
live_1.0	-42.6083	28.275	-1.507	0.132	-98.026	12.810
live_2.0	-230.9783	31.287	-7.383	0.000	-292.299	-169.658
live_3.0	38.3551	10.710	3.581	0.000	17.364	59.346
live_4.0	92.0723	9.626	9.565	0.000	73.205	110.939
live_5.0	101.0564	8.627	11.715	0.000	84.149	117.964
live_6.0	85.6823	9.136	9.378	0.000	67.776	103.589
live_7.0	80.5471	10.266	7.846	0.000	60.426	100.668
live_8.0	63.5410	11.583	5.486	0.000	40.838	86.244
live_9.0	42.0208	9.867	4.259	0.000	22.682	61.360
csex	123.0078	3.437	35.793	0.000	116.272	129.743
plur_1	960.4314	15.318	62.701	0.000	930.409	990.453

```
=====
Omnibus:                12881.615    Durbin-Watson:                1.950
Prob(Omnibus):           0.000    Jarque-Bera (JB):            39494.877
Skew:                    -0.705    Prob(JB):                     0.00
Kurtosis:                 5.802    Cond. No.                     315.
=====
```

Notes:

[1] Standard Errors are heteroscedasticity robust (HCO)

```
[69]: #ATT
print(data1['tob1h'].mean() - data1['tob0h'].mean())
```

-224.17678177160496

```
[ ]:
```