| state_city | avganncount | avgdeathsperyear | target_deathrate | incidencerate | medincome | popest2015 | povertypercent | studypercap | binnedinc |
|---|---|---|---|---|---|---|---|---|---|
| Ohio | 169 | 75 | 217.2 | 493.1 | 34116 | 28024 | 24.8 | 0 | [22640, 34218.1] |
| Ohio | 569 | 241 | 185 | 456.6 | 43602 | 104425 | 18 | 536.2700503 | (42724.4, 45201] |
| Ohio | 275 | 127 | 189.4 | 426 | 47369 | 53213 | 14.6 | 1390.637626 | (45201, 48021.6] |
| Ohio | 625 | 263 | 203.2 | 498.3 | 39757 | 98632 | 21.5 | 496.7961716 | (37413.8, 40362.7] |
| Ohio | 271 | 105 | 192.1 | 489.6 | 34216 | 65886 | 29.9 | 15.17773123 | [22640, 34218.1] |
| Ohio | 269 | 110 | 189.7 | 484.8 | 52650 | 45876 | 8.3 | 0 | (51046.4, 54545.6] |
| Ohio | 406 | 185 | 185.2 | 427.9 | 41983 | 69154 | 16.1 | 0 | (40362.7, 42724.4] |
| Ohio | 264 | 112 | 213.3 | 500.2 | 46484 | 43839 | 15 | 0 | (45201, 48021.6] |
| Ohio | 1721 | 706 | 189 | 458.9 | 58558 | 376353 | 14.4 | 263.0509123 | (54545.6, 61494.5] |
| Ohio | 180 | 67 | 172.8 | 472.5 | 46177 | 27811 | 13.5 | 71.91399087 | (45201, 48021.6] |
| Ohio | 215 | 90 | 190.1 | 462.1 | 50302 | 38987 | 11.3 | 0 | (48021.6, 51046.4] |
| Ohio | 814 | 360 | 200.6 | 471.1 | 42029 | 135959 | 18.2 | 478.0853051 | (40362.7, 42724.4] |

| medianage | medianagemale | medianagefemale | geography | percentmarried | pctnohs18_24 | pcths18_24 | pctsomecol18_24 | pctbachdeg18_24 |
|---|---|---|---|---|---|---|---|---|
| 41 | 40.2 | 41.5 | Adams County, Ohio | 52.8 | 16.5 | 47.2 | 32.8 | 3.5 |
| 38.1 | 36.5 | 40 | Allen County, Ohio | 46.2 | 16.7 | 32.3 | | 6.6 |
| 39.9 | 38.8 | 41.1 | Ashland County, Ohio | 53.6 | 13.7 | 31.4 | | 5.3 |
| 41.8 | 40.5 | 43.4 | Ashtabula County, Ohio | 48.2 | 25.4 | 41.9 | 30.3 | 2.5 |
| 28 | 27.5 | 28.6 | Athens County, Ohio | 35.1 | 2.3 | 15.7 | | 7 |
| 41 | 39.8 | 42.2 | Auglaize County, Ohio | 58.4 | 16.5 | 39.9 | | 4.7 |
| 43.9 | 41.3 | 46.5 | Belmont County, Ohio | 50.6 | 18.1 | 36.6 | | 5.5 |
| 40.8 | 40.3 | 41.3 | Brown County, Ohio | 54.1 | 7.6 | 45.3 | | 3.1 |
| 36.4 | 35.2 | 37.7 | Butler County, Ohio | 50.5 | 9.5 | 33.7 | | 7.8 |
| 44.5 | 43.3 | 46.1 | Carroll County, Ohio | 58.4 | 17 | 44.1 | | 5.3 |
| 41.2 | 39.7 | 42.8 | Champaign County, Ohio | 55.2 | 15.6 | 40.5 | | 3.9 |
| 41 | 39.8 | 42 | Clark County, Ohio | 48.4 | 16.1 | 34.7 | 44.1 | 5.1 |

| pcths25_over | pctbachdeg25_over | pctemployed16_over | pctunemployed16_over | pctprivatecoverage | pctprivatecoveragealone | pctempprivcoverage |
|---|---|---|---|---|---|---|
| 43.6 | 6.4 | 46 | 13.4 | 49.6 | 37.2 | 34.6 |
| 39.7 | 10.1 | 57.1 | 9.2 | 68.4 | 51.8 | 48.1 |
| 42.8 | 13.1 | 57 | 7.8 | 70.7 | 54 | 50.1 |
| 44.9 | 8.9 | 50.7 | 8.9 | 61.7 | 46.9 | 43 |
| 32.3 | 13.9 | 47.7 | 10.9 | 70.6 | 58.6 | 51.4 |
| 43.9 | 11.6 | 63.4 | 5 | 78.2 |  | 55.4 |
| 43.5 | 9.4 | 51.3 | 8.5 | 69.5 | 51.5 | 47.9 |
| 48.1 | 8 | 53.3 | 9.9 | 63.2 | 49.4 | 45.1 |
| 34 | 18.4 | 60.6 | 7.2 | 73.6 | 61.6 | 56.5 |
| 47.5 | 6.7 | 55 | 7.1 | 65.3 | 50 | 45.4 |
| 45.1 | 10.7 | 58.2 | 9.1 | 71.9 | 55.4 | 51.5 |
| 36.4 | 11.5 | 54.1 | 10 | 64.9 | 47.8 | 43.6 |

| pctpubliccoverage | pctpubliccoveragealone | pctwhite | pctblack | pctasian | pctotherrace | pctmarriedhouseholds | birthrate |
|---|---|---|---|---|---|---|---|
| 46.4 | 31 | 97.4281767 | 0.382585285 | 0.109816147 | 0.092103865 | 50.47890956 | 4.079365079 |
| 36.2 | 19.5 | 83.54500171 | 12.05844329 | 0.751929731 | 0.531389026 | 46.1311459 | 6.237398089 |
| 32 | 15.4 | 96.93733667 | 0.836639155 | 0.537705165 | 0.342176014 | 54.49160425 | 5.646027941 |
| 39.1 | 22.6 | 93.25596079 | 3.406596711 | 0.472052677 | 0.484079497 | 47.3540756 | 6.447299298 |
| 31.3 | 18.6 | 91.04257087 | 2.328623757 | 3.336719303 | 0.333979746 | 40.43404785 | 2.52476505 |
| 30.7 | 14.2 | 97.39280187 | 0.451245831 | 0.512283914 | 0.364048569 | 56.72511405 | 6.028766704 |
| 37.7 | 18.8 | 93.48907418 | 3.834100058 | 0.368027602 | 0.405405405 | 49.99105065 | 3.534951105 |
| 37.4 | 21.5 | 97.2359708 | 0.98537754 | 0.185323299 | 0.19436346 | 54.66050864 | 8.672957238 |
| 27.7 | 16 | 86.03229738 | 7.785514498 | 2.670868475 | 1.001508571 | 52.67666271 | 5.479735318 |
| 35.1 | 19.6 | 97.16864709 | 0.835654596 | 0.222136032 | 0.363174782 | 59.31461903 | 5.228870221 |
| 34.2 | 17.8 | 94.44317518 | 1.896275988 | 0.385855355 | 0.390932399 | 55.08958456 | 4.636217581 |
| 40.9 | 23.2 | 86.24101968 | 8.512939698 | 0.724272256 | 1.196401295 | 46.15847762 | 5.319358009 |

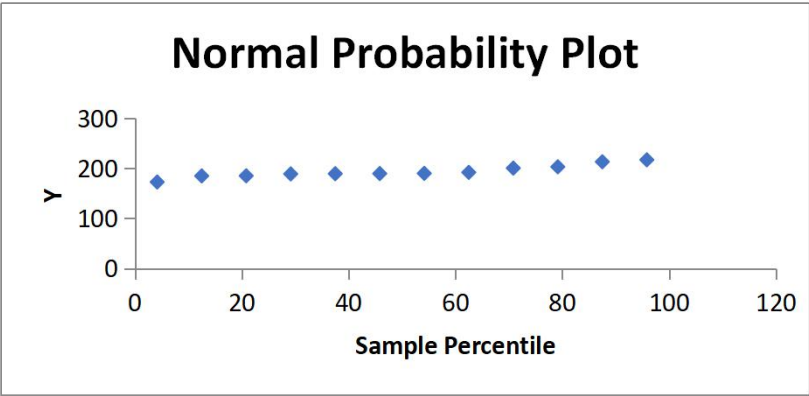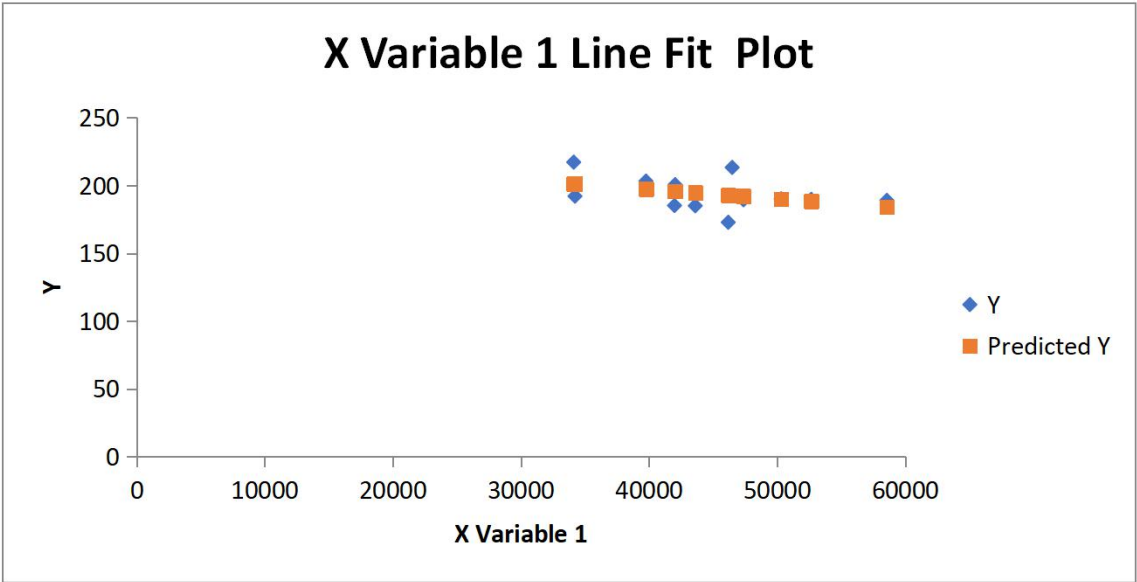| Column | Label | Type | Description | Reference |
|--------|-------|------|-------------|-----------|
| A | state_city | string | State name or city name | |
| B | avganncount | decimal | Mean number of reported cases of cancer diagnosed annually | (a) |
| C | avgdeathsperyear | integer | Mean number of reported mortalities due to cancer | (a) |
| D | target_deathrate | decimal | Dependent variable. Mean per capita (100,000) cancer mortalities | (a) |
| E | incidencerate | decimal | Mean per capita (100,000) cancer diagnoses | (a) |
| F | medincome | integer | Median income per county | (b) |
| G | popest2015 | integer | Population of county | (b) |
| H | povertypercent | decimal | Percent of populace in poverty | (b) |
| I | studypercap | decimal | Per capita number of cancer-related clinical trials per county | (a) |
| J | binnedinc | string | Median income per capita binned by decile | (b) |
| K | medianage | decimal | Median age of county residents | (b) |
| L | medianagemale | decimal | Median age of male county residents | (b) |
| M | medianagefemale | decimal | Median age of female county residents | (b) |
| N | geography | string | County name | (b) |
| O | percentmarried | decimal | Percent of county residents who are married | (b) |
| P | pctnohs18_24 | decimal | Percent of county residents ages 18-24 highest education attained: less than high school | (b) |
| Q | pcths18_24 | decimal | Percent of county residents ages 18-24 highest education attained: high school diploma | (b) |
| R | pctsomecol18_24 | decimal | Percent of county residents ages 18-24 highest education attained: some college | (b) |
| S | pctbachdeg18_24 | decimal | Percent of county residents ages 18-24 highest education attained: bachelor's degree | (b) |
| T | pcths25_over | decimal | Percent of county residents ages 25 and over highest education attained: high school diploma | (b) |
| U | pctbachdeg25_over | decimal | Percent of county residents ages 25 and over highest education attained: bachelor's degree | (b) |
| V | pctemployed16_over | decimal | Percent of county residents ages 16 and over employed | (b) |
| W | pctunemployed16_over | decimal | Percent of county residents ages 16 and over unemployed | (b) |
| X | pctprivatecoverage | decimal | Percent of county residents with private health coverage | (b) |
| Y | pctprivatecoveragealone | decimal | Percent of county residents with private health coverage alone (no public assistance) | (b) |
| Z | pctempprivcoverage | decimal | Percent of county residents with employee-provided private health coverage | (b) |
| AA | pctpubliccoverage | decimal | Percent of county residents with government-provided health coverage | (b) |
| AB | pctpubliccoveragealone | decimal | Percent of county residents with government-provided health coverage alone | (b) |
| AC | pctwhite | decimal | Percent of county residents who identify as White | (b) |
| AD | pctblack | decimal | Percent of county residents who identify as Black | (b) |
| AE | pctasian | decimal | Percent of county residents who identify as Asian | (b) |
| AF | pctotherrace | decimal | Percent of county residents who identify in a category which is not White, Black, or Asian | (b) |

| | AG | pctmarriedhouseholds | decimal | Percent of married households | (b) |
|---|---|---|---|---|---|
| | AH | birthrate | decimal | Number of live births relative to number of women in county | (b) |
| | | | | | |
| | | | | | |
| **Note:** | | | | | |
| (a): years 2010-2016 | | | | | |
| (b): 2013 Census Estimates | | | | | |

SUMMARY OUTPUT

|  Regression Statistics | |
| --- | --- |
| Multiple R | 0.395180237 |
| R Square | 0.15616742 |
| Adjusted R Square | 0.071784162 |
| Standard Error | 12.08327516 |
| Observations | 12 |

ANOVA

|  | df | SS | MS | F | Significance F |
| --- | --- | --- | --- | --- | --- |
| Regression | 1 | 270.2112813 | 270.2112813 | 1.850691994 | 0.203576882 |
| Residual | 10 | 1460.055385 | 146.0055385 | | |
| Total | 11 | 1730.266667 | | | |

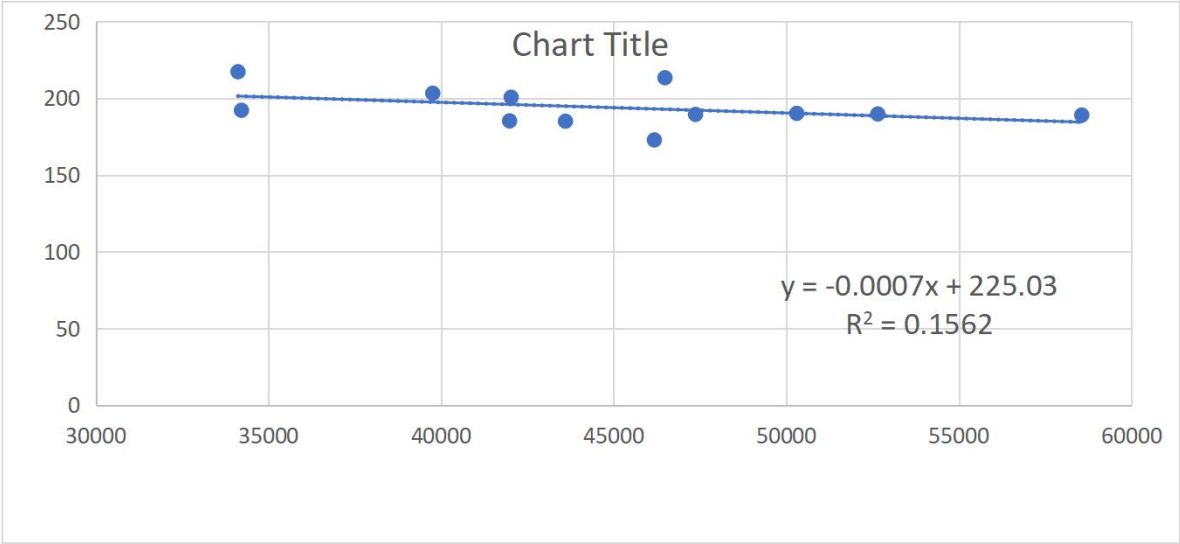|  | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% | Lower 95.0% | Ipper 95.0% |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Intercept | 225.0338953 | 23.10166714 | 9.741024055 | 2.02065E-06 | 173.5601732 | 276.5076174 | 173.5601732 | 276.5076 |
| X Variable 1 | -0.000693926 | 0.000510089 | -1.360401409 | 0.203576882 | -0.001830475 | 0.000442623 | -0.001830475 | 0.000443 |



X Variable 1 Line Fit Plot



Normal Probability Plot

RESIDUAL OUTPUT

| Observation | Predicted Y | Residuals |
|---|---|---|
| 1 | 201.3599249 | 15.84007506 |
| 2 | 194.7773454 | -9.777345407 |
| 3 | 192.1633272 | -2.763327161 |
| 4 | 197.4454899 | 5.754510139 |
| 5 | 201.2905324 | -9.190532363 |
| 6 | 188.4987054 | 1.20129465 |
| 7 | 195.9008112 | -10.70081117 |
| 8 | 192.7774514 | 20.52254856 |
| 9 | 184.3989921 | 4.601007896 |
| 10 | 192.9904866 | -20.19048664 |
| 11 | 190.128043 | -0.028042978 |
| 12 | 195.8688906 | 4.73110941 |

PROBABILITY OUTPUT

| Percentile | Y |
|---|---|
| 4.166666667 | 172.8 |
| 12.5 | 185 |
| 20.83333333 | 185.2 |
| 29.16666667 | 189 |
| 37.5 | 189.4 |
| 45.83333333 | 189.7 |
| 54.16666667 | 190.1 |
| 62.5 | 192.1 |
| 70.83333333 | 200.6 |
| 79.16666667 | 203.2 |
| 87.5 | 213.3 |
| 95.83333333 | 217.2 |

| target_deathrate (y) | (y^2) | medincome (x) | (x^2) | xy |
|---|---|---|---|---|
| 217.2 | 47175.84 | 34116 | 1163901456 | 7409995.2 |
| 185 | 34225 | 43602 | 1901134404 | 8066370 |
| 189.4 | 35872.36 | 47369 | 2243822161 | 8971688.6 |
| 203.2 | 41290.24 | 39757 | 1580619049 | 8078622.4 |
| 192.1 | 36902.41 | 34216 | 1170734656 | 6572893.6 |
| 189.7 | 35986.09 | 52650 | 2772022500 | 9987705 |
| 185.2 | 34299.04 | 41983 | 1762572289 | 7775251.6 |
| 213.3 | 45496.89 | 46484 | 2160762256 | 9915037.2 |
| 189 | 35721 | 58558 | 3429039364 | 11067462 |
| 172.8 | 29859.84 | 46177 | 2132315329 | 7979385.6 |
| 190.1 | 36138.01 | 50302 | 2530291204 | 9562410.2 |
| 200.6 | 40240.36 | 42029 | 1766436841 | 8431017.4 |

TOTAL 2327.6  453207.08  537243  24613651509  103817838.8
AVERAGE 193.9666667  44770.25

| 34116 | 217.2 |
|---|---|
| 43602 | 185 |
| 47369 | 189.4 |
| 39757 | 203.2 |
| 34216 | 192.1 |
| 52650 | 189.7 |
| 41983 | 185.2 |
| 46484 | 213.3 |
| 58558 | 189 |
| 46177 | 172.8 |
| 50302 | 190.1 |
| 42029 | 200.6 |

Chart Title

$y = -0.0007x + 225.03$

$R^2 = 0.1562$

X'

| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|
| 4.07937 | 6.23740 | 5.64603 | 6.4473 | 2.52477 | 6.02877 | 3.53495 | 8.67296 | 5.47974 |
| 0 | 536.27 | 1390.64 | 496.796 | 15.1777 | 0 | 0 | 0 | 263.051 |

X'X

X'

| 1 | 1 | 1 |
|---|---|---|
| 5.22887 | 4.63622 | 5.31936 |
| 71.914 | 0 | 478.085 |

X'X

|  | medincome (x) | birthrate (x1) | studypercap (x2) | target_deathrate (y) | (y^2) |
|---|---|---|---|---|---|
|  | 34116 | 4.079365079 | 0 | 217.2 | 47175.84 |
|  | 43602 | 6.237398089 | 536.2700503 | 185 | 34225 |
|  | 47369 | 5.646027941 | 1390.637626 | 189.4 | 35872.36 |
|  | 39757 | 6.447299298 | 496.7961716 | 203.2 | 41290.24 |
|  | 34216 | 2.52476505 | 15.17773123 | 192.1 | 36902.41 |
|  | 52650 | 6.028766704 | 0 | 189.7 | 35986.09 |
|  | 41983 | 3.534951105 | 0 | 185.2 | 34299.04 |
|  | 46484 | 8.672957238 | 0 | 213.3 | 45496.89 |
|  | 58558 | 5.479735318 | 263.0509123 | 189 | 35721 |
|  | 46177 | 5.228870221 | 71.91399087 | 172.8 | 29859.84 |
|  | 50302 | 4.636217581 | 0 | 190.1 | 36138.01 |
|  | 42029 | 5.319358009 | 478.0853051 | 200.6 | 40240.36 |
| TOTAL | 537243 | 63.83571163 | 3251.931787 | 2327.6 | 453207.08 |
| AVERAGE | 44770.25 |  |  | 193.9666667 |  |

| birthrate (x1) | studypercap (x2) | target_deathrate (y) |
|---|---|---|
| 4.079365079 | 0 | 217.2 |
| 6.237398089 | 536.2700503 | 185 |
| 5.646027941 | 1390.637626 | 189.4 |
| 6.447299298 | 496.7961716 | 203.2 |
| 2.52476505 | 15.17773123 | 192.1 |
| 6.028766704 | 0 | 189.7 |
| 3.534951105 | 0 | 185.2 |
| 8.672957238 | 0 | 213.3 |
| 5.479735318 | 263.0509123 | 189 |
| 5.228870221 | 71.91399087 | 172.8 |
| 4.636217581 | 0 | 190.1 |
| 5.319358009 | 478.0853051 | 200.6 |