akulas_HW3

January 23, 2019

1 HomeWork 3

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NaN

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Adam Kulas
watiam: akulas
student number: 20302000
   References: https://archive.ics.uci.edu/ml/machine-learning-databases/communities/
In [1]: import pandas as pd
        import numpy as np
        from numpy import linalg as LA
        from IPython.display import display, HTML
        from sklearn.decomposition import PCA
        from sklearn.pipeline import make_pipeline
        import matplotlib.pyplot as plt
        pd.options.display.max_rows = None
        pd.options.display.max_columns = None
In [2]: data = pd.read_csv('data/communities.data', header=None, na_values='?')
        with open('data/communities.names') as f:
            columns = [line.split(' ')[1] for line in f.readlines() if line.startswith('@attri
        data.columns = columns
        print(data.shape)
        display(data.head(15))
(1994, 128)
                                         communityname
                                                         fold
                                                              population
    state
           county
                    community
0
        8
                                          Lakewoodcity
                                                            1
                                                                     0.19
              NaN
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                                     Bethlehemtownship
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                                     SouthPasadenacity
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| 9 | 29 | NaN | NaN | | Clayt | oncity | 1 | | 0.01 | |
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| 10 | | NaN | NaN | | DalyCi | | 1 | | 0.13 | |
| 11 | 36 | NaN | | Rockvill | | • | 1 | | 0.02 | |
| 12 | 25 2 | 1.0 44 | 105.0 | | Needh | amtown | 1 | | 0.03 | |
| 13 | 55 8 | 7.0 30 | 075.0 | (| GrandChu | tetown | 1 | | 0.01 | |
| 14 | 6 | NaN | NaN | | DanaPoi | ntcity | 1 | | 0.04 | |
| | households | ize race | pctblac | k raceP | ctWhite | racePo | ctAsian | race | PctHisp | \ |
| 0 | 0 | .33 | 0.0 |)2 | 0.90 | | 0.12 | | 0.17 | |
| 1 | 0 | .16 | 0.1 | .2 | 0.74 | | 0.45 | | 0.07 | |
| 2 | 0 | .42 | 0.4 | ! 9 | 0.56 | | 0.17 | | 0.04 | |
| 3 | 0 | .77 | 1.0 | 00 | 0.08 | | 0.12 | | 0.10 | |
| 4 | 0 | .55 | 0.0 |)2 | 0.95 | | 0.09 | | 0.05 | |
| 5 | 0 | .28 | 0.0 |)6 | 0.54 | | 1.00 | | 0.25 | |
| 6 | 0 | .39 | 0.0 | 00 | 0.98 | | 0.06 | | 0.02 | |
| 7 | 0 | .74 | 0.0 |)3 | 0.46 | | 0.20 | | 1.00 | |
| 8 | 0 | .34 | 0.2 | 20 | 0.84 | | 0.02 | | 0.00 | |
| 9 | 0 | .40 | 0.0 |)6 | 0.87 | | 0.30 | | 0.03 | |
| 10 | 0 | .71 | 0.1 | .5 | 0.07 | | 1.00 | | 0.41 | |
| 11 | 0 | .46 | 0.0 | 8(| 0.91 | | 0.07 | | 0.10 | |
| 12 | 0 | .47 | 0.0 |)1 | 0.96 | | 0.13 | | 0.02 | |
| 13 | 0 | .44 | 0.0 | 00 | 0.98 | | 0.04 | | 0.01 | |
| 14 | 0 | .36 | 0.0 |)1 | 0.85 | | 0.14 | | 0.26 | |
| | agePct12t2 | 1 agePct | 12t29 | agePct16 | t24 age | Pct65up | o numbU | rban | pctUrban | . \ |
| 0 | 0.3 | • | 0.47 | _ | .29 | 0.32 | | 0.20 | 1.00 | |
| 1 | 0.2 | | 0.59 | | .35 | 0.27 | | 0.02 | 1.00 | |
| 2 | 0.3 | | 0.47 | | .28 | 0.32 | | 0.00 | 0.00 | |
| 3 | 0.5 | | 0.50 | | .34 | 0.21 | | 0.06 | 1.00 | |
| 4 | 0.3 | | 0.38 | | .23 | 0.36 | | 0.02 | 0.90 | |
| 5 | 0.3 | | 0.48 | | .27 | 0.37 | | 0.04 | 1.00 | |
| 6 | 0.3 | | 0.37 | | .23 | 0.60 | | 0.02 | 0.81 | |
| 7 | 0.5 | | 0.55 | | .36 | 0.35 | | 0.00 | 0.00 | |
| 8 | 0.3 | | 0.45 | | .28 | 0.48 | | 0.04 | 1.00 | |
| 9 | 0.9 | | 0.82 | | .80 | 0.39 | | 0.02 | 1.00 | |
| 10 | 0.4 | | 0.52 | | .35 | 0.33 | | 0.15 | 1.00 | |
| 11 | 0.3 | | 0.36 | | .22 | 0.57 | | 0.04 | 1.00 | |
| 12 | 0.2 | | 0.32 | | .20 | 0.52 | | 0.04 | 1.00 | |
| 13 | 0.3 | | 0.53 | | .32 | 0.23 | | 0.02 | 0.77 | |
| 14 | 0.3 | | 0.46 | | .30 | 0.31 | | 0.05 | 1.00 | |
| | medIncome | pctWWage | nc+LIT | JarmColf | nc+UTn | Inc n | +W20020 | c no | + WDub / a a + | \ |
| 0 | 0.37 | 0.72 | - | 0.34 | - | .60 | 0.2 | - | 0.15 | |
| 1 | 0.31 | 0.72 | | 0.34 | | .45 | 0.2 | | 0.13 | |
| 2 | 0.30 | 0.72 | | 0.11 | | .39 | 0.2 | | 0.29 | |
| 3 | 0.58 | 0.89 | | 0.19 | | .43 | 0.3 | | 0.40 | |
| 3 4 | 0.50 | 0.89 | | 0.21 | | .43 .68 | 0.3 | | 0.20 | |
| 5 | 0.50 | 0.72 | | 0.16 | | .61 | 0.4 | | 0.11 | |
| J | 0.02 | 0.00 | | 0.20 | U | .01 | 0.2 | U | 0.15 | |

| 6 | 0.42 | 0.50 | 0.23 | 0.68 | 0.61 | 0.21 | |
|----|----------------|------|------------|------|-------------|--------------|---|
| 7 | 0.16 | 0.44 | 1.00 | 0.23 | 0.53 | 0.97 | |
| 8 | 0.17 | 0.47 | 0.36 | 0.34 | 0.55 | 0.48 | |
| 9 | 0.54 | 0.59 | 0.22 | 0.86 | 0.42 | 0.02 | |
| 10 | 0.49 | 0.71 | 0.16 | 0.47 | 0.36 | 0.40 | |
| 11 | 0.72 | 0.53 | 0.13 | 0.74 | 0.63 | 0.17 | |
| 12 | 0.80 | | | 0.74 | | 0.07 | |
| | | 0.55 | 0.18 | | 0.51 | | |
| 13 | 0.46 | 0.77 | 0.41 | 0.73 | 0.28 | 0.10 | |
| 14 | 0.71 | 0.67 | 0.42 | 0.55 | 0.25 | 0.14 | |
| | | | | | | | |
| | - | _ | _ | _ | blackPerCap | indianPerCap | \ |
| 0 | 0.43 | 0.39 | 0.40 | 0.39 | 0.32 | 0.27 | |
| 1 | 0.39 | 0.29 | 0.37 | 0.38 | 0.33 | 0.16 | |
| 2 | 0.84 | 0.28 | 0.27 | 0.29 | 0.27 | 0.07 | |
| 3 | 0.82 | 0.51 | 0.36 | 0.40 | 0.39 | 0.16 | |
| 4 | 0.71 | 0.46 | 0.43 | 0.41 | 0.28 | 0.00 | |
| 5 | 0.25 | 0.62 | 0.72 | 0.76 | 0.77 | 0.28 | |
| 6 | 0.54 | 0.43 | 0.47 | 0.44 | 0.40 | 0.24 | |
| 7 | 0.41 | 0.15 | 0.10 | 0.12 | 0.08 | 0.17 | |
| 8 | 0.43 | 0.21 | 0.10 | 0.12 | 0.19 | 0.10 | |
| 9 | 0.31 | 0.21 | 0.25 | 0.23 | 0.13 | 0.09 | |
| | | | | | | | |
| 10 | 0.45 | 0.47 | 0.33 | 0.37 | 0.40 | 0.22 | |
| 11 | 0.59 | 0.80 | 0.72 | 0.71 | 0.36 | 0.70 | |
| 12 | 0.55 | 0.82 | 0.78 | 0.77 | 0.62 | 0.14 | |
| 13 | 0.22 | 0.47 | 0.41 | 0.40 | 0.38 | 0.32 | |
| 14 | 0.36 | 0.70 | 0.79 | 0.82 | 0.29 | 0.37 | |
| | | | | | | | |
| | - | _ | HispPerCap | | - | | |
| 0 | 0.27 | 0.36 | 0.41 | 0. | 80 | 0.19 | |
| 1 | 0.30 | 0.22 | 0.35 | 0. | 01 | 0.24 | |
| 2 | 0.29 | 0.28 | 0.39 | 0. | 01 | 0.27 | |
| 3 | 0.25 | 0.36 | 0.44 | 0. | 01 | 0.10 | |
| 4 | 0.74 | 0.51 | 0.48 | 0. | 00 | 0.06 | |
| 5 | 0.52 | 0.48 | 0.60 | 0. | 01 | 0.12 | |
| 6 | 0.86 | 0.24 | 0.36 | 0. | 01 | 0.11 | |
| 7 | 0.27 | 0.18 | 0.21 | | | 0.64 | |
| 8 | 0.26 | 0.29 | 0.22 | | | 0.45 | |
| 9 | 0.33 | 0.17 | 0.80 | | | 0.11 | |
| 10 | 0.32 | 0.34 | 0.38 | | | 0.18 | |
| 11 | 0.43 | 0.35 | 0.41 | | | 0.10 | |
| | | | | | | | |
| 12 | 0.54 | 0.17 | 0.46 | | | 0.07 | |
| 13 | 0.09 | 0.13 | 0.75 | | | 0.07 | |
| 14 | 0.53 | 0.28 | 0.38 | 0. | 02 | 0.18 | |
| | D . T . 0:10 | B | a 1 5 -=~ | | | D . E | |
| • | PctLess9thGrad | | | | Unemployed | PctEmploy \ | |
| 0 | 0.1 | | 0.18 | 0.48 | 0.27 | 0.68 | |
| 1 | 0.1 | | 0.24 | 0.30 | 0.27 | 0.73 | |
| 2 | 0.2 | 7 | 0.43 | 0.19 | 0.36 | 0.58 | |
| | | | | | | | |

| 3 | 0. | .09 0.25 | 0.31 | 0.33 | 0.71 |
|----|---------------|-----------------|--------------|------------------|-----------|
| 4 | 0. | .25 0.30 | 0.33 | 0.12 | 0.65 |
| 5 | 0. | .13 0.12 | 0.80 | 0.10 | 0.65 |
| 6 | 0. | .29 0.41 | 0.36 | 0.28 | 0.54 |
| 7 | 0. | .96 0.82 | 0.12 | 1.00 | 0.26 |
| 8 | 0. | .52 0.59 | 0.17 | 0.55 | 0.43 |
| 9 | 0. | .04 0.03 | 1.00 | 0.11 | 0.44 |
| 10 | 0. | .33 0.36 | 0.38 | 0.32 | 0.62 |
| 11 | 0. | .18 0.19 | 0.72 | 0.18 | 0.51 |
| 12 | 0. | .07 0.07 | 0.89 | 0.24 | 0.55 |
| 13 | | .20 0.22 | 0.42 | 0.13 | 0.76 |
| 14 | | .11 0.14 | 0.58 | 0.19 | 0.68 |
| | | | | | |
| | PctEmplManu | PctEmplProfServ | PctOccupManu | PctOccupMgmtProf | : \ |
| 0 | 0.23 | 0.41 | 0.25 | 0.52 | ? |
| 1 | 0.57 | 0.15 | 0.42 | 0.36 | 3 |
| 2 | 0.32 | 0.29 | 0.49 | 0.32 | ? |
| 3 | 0.36 | 0.45 | 0.37 | 0.39 |) |
| 4 | 0.67 | 0.38 | 0.42 | 0.46 | 3 |
| 5 | 0.19 | 0.77 | 0.06 | 0.91 | |
| 6 | 0.44 | 0.53 | 0.33 | 0.49 |) |
| 7 | 0.43 | 0.34 | 0.71 | 0.18 | 3 |
| 8 | 0.59 | 0.36 | 0.64 | 0.29 |) |
| 9 | 0.20 | 1.00 | 0.02 | 0.96 | ; |
| 10 | 0.20 | 0.29 | 0.35 | 0.30 |) |
| 11 | 0.18 | 0.67 | 0.13 | 0.79 |) |
| 12 | 0.29 | 0.73 | 0.10 | 0.88 | 3 |
| 13 | 0.67 | 0.24 | 0.42 | 0.47 | • |
| 14 | 0.28 | 0.35 | 0.15 | 0.61 | |
| | | | | | |
| | MalePctDivorc | | | | ersPerFam |
| 0 | 0.6 | | | | 0.35 |
| 1 | 1.0 | | | | 0.29 |
| 2 | 0.6 | | | | 0.45 |
| 3 | 0.3 | | | | 0.75 |
| 4 | 0.2 | 22 0.27 | 7 0.20 | 0.21 | 0.51 |
| 5 | 0.4 | | | | 0.44 |
| 6 | 0.2 | 25 0.34 | 1 0.28 | 0.28 | 0.42 |
| 7 | 0.3 | 38 0.47 | 7 0.59 | 0.52 | 0.78 |
| 8 | 0.6 | 62 0.26 | 0.66 | 0.67 | 0.37 |
| 9 | 0.3 | 30 0.85 | 0.39 | 0.36 | 0.31 |
| 10 | 0.4 | 11 0.55 | 0.46 | 0.46 | 0.85 |
| 11 | 0.1 | 18 0.40 | 0.24 | 0.22 | 0.59 |
| 12 | 0.1 | 13 0.38 | 0.20 | 0.18 | 0.50 |
| 13 | 0.3 | 0.39 | 0.27 | 0.32 | 0.47 |
| 14 | 0.6 | 0.50 | 0.68 | 0.66 | 0.35 |
| | | | | | |

PctFam2Par PctKids2Par PctYoungKids2Par PctTeen2Par \

| 0 | 0.55 | 0.59 | | 0.61 | 0. | 56 | | | |
|----------|------------------|-------------|------|--------------|----------|--------------|----------|------|---|
| 1 | 0.43 | 0.47 | | 0.60 | 0. | 39 | | | |
| 2 | 0.42 | 0.44 | | 0.43 | 0. | 43 | | | |
| 3 | 0.65 | 0.54 | | 0.83 | 0. | 65 | | | |
| 4 | 0.91 | 0.91 | | 0.89 | 0. | 85 | | | |
| 5 | 0.62 | 0.69 | | 0.87 | 0. | 53 | | | |
| 6 | 0.77 | 0.81 | | 0.79 | 0. | 74 | | | |
| 7 | 0.45 | 0.43 | | 0.34 | | 34 | | | |
| 8 | 0.51 | 0.55 | | 0.58 | | 47 | | | |
| 9 | 0.65 | 0.73 | | 0.78 | | 67 | | | |
| 10 | 0.62 | 0.56 | | 0.68 | 0. | 62 | | | |
| 11 | 0.85 | 0.87 | | 0.89 | | 78 | | | |
| 12 | 0.87 | 0.90 | | 0.87 | | 73 | | | |
| 13 | 0.88 | 0.92 | | 0.88 | 0. | 82 | | | |
| 14 | 0.66 | 0.68 | | 0.87 | 0. | 59 | | | |
| | | | | | | | | | |
| | PctWorkMomYoungK | ids PctWor | kMom | NumIlleg | PctIlleg | NumImmig | \ | | |
| 0 | 0 | .74 | 0.76 | 0.04 | 0.14 | 0.03 | | | |
| 1 | 0 | .46 | 0.53 | 0.00 | 0.24 | 0.01 | | | |
| 2 | 0 | .71 | 0.67 | 0.01 | 0.46 | 0.00 | | | |
| 3 | 0 | .85 | 0.86 | 0.03 | 0.33 | 0.02 | | | |
| 4 | 0 | .40 | 0.60 | 0.00 | 0.06 | 0.00 | | | |
| 5 | 0 | .30 | 0.43 | 0.00 | 0.11 | 0.04 | | | |
| 6 | 0 | .57 | 0.62 | 0.00 | 0.13 | 0.01 | | | |
| 7 | 0 | . 29 | 0.27 | 0.02 | 0.50 | 0.02 | | | |
| 8 | 0 | .65 | 0.64 | 0.02 | 0.29 | 0.00 | | | |
| 9 | 0 | .72 | 0.71 | 0.00 | 0.07 | 0.01 | | | |
| 10 | 0 | .83 | 0.81 | 0.05 | 0.30 | 0.28 | | | |
| 11 | 0 | .31 | 0.39 | 0.01 | 0.14 | 0.01 | | | |
| 12 | 0 | .33 | 0.48 | 0.00 | 0.03 | 0.01 | | | |
| 13 | 0 | .56 | 0.60 | 0.00 | 0.08 | 0.00 | | | |
| 14 | 0 | .30 | 0.30 | 0.01 | 0.10 | 0.03 | | | |
| | | | | | | | _ | _ | |
| _ | | PctImmigRec | | tImmigRec8 | PctImmig | | tRecent. | _ | \ |
| 0 | 0.24 | 0.2 | | 0.37 | | 0.39 | | 0.07 | |
| 1 | 0.52 | 0.6 | | 0.64 | | 0.63 | | 0.25 | |
| 2 | 0.07 | 0.0 | | 0.15 | | 0.19 | | 0.02 | |
| 3 | 0.11 | 0.2 | | 0.30 | | 0.31 | | 0.05 | |
| 4 | 0.03 | 0.0 | | 0.20 | | 0.27 | | 0.01 | |
| 5 | 0.30 | 0.3 | | 0.43 | | 0.47 | | 0.50 | |
| 6 | 0.00 | 0.0 | | 0.02 | | 0.10 | | 0.00 | |
| 7 | 0.50 | 0.5 | | 0.65 | | 0.59 | | 0.69 | |
| 8 | 0.12 | 0.0 | | 0.07 | | 0.13 | | 0.00 | |
| 9 | 0.41 | 0.4 | | 0.52 | | 0.48 | | 0.22 | |
| 10 | 0.36 | 0.4 | | 0.52 | | 0.57 | | 1.00 | |
| 11 | 0.11 | 0.1 | 7 | 0.21 | | 0.27 | | 0.05 | |
| | | | | | | | | | |
| 12 13 | 0.25 | 0.2 | 8 | 0.26 0.25 | | 0.25 0.22 | | 0.13 | |

| 14 | 0.69 | 9 0. | 74 | 0.70 | 0.6 | 89 | 0.65 | |
|----|----------------|---------------|-------------|-------|---------------|-------|--------------|---|
| | PctRecImmig5 | PctRecImmig8 | PctRecImmi | ig10 | PctSpeakEngl(| nly | \ | |
| 0 | 0.07 | 0.08 | | 0.08 | | .89 | | |
| 1 | 0.27 | 0.25 | (| 0.23 | C | .84 | | |
| 2 | 0.02 | 0.04 | (| 0.05 | (| 88.0 | | |
| 3 | 0.08 | 0.11 | (| 0.11 | (| .81 | | |
| 4 | 0.02 | 0.04 | (| 0.05 | (| 88.0 | | |
| 5 | 0.50 | 0.56 | (| 0.57 | (| .45 | | |
| 6 | 0.01 | 0.01 | (| 0.03 | C | .73 | | |
| 7 | 0.72 | 0.71 | (| 0.60 | (| .12 | | |
| 8 | 0.00 | 0.00 | (| 0.00 | (| .99 | | |
| 9 | 0.21 | 0.22 | (| 0.19 | (| .85 | | |
| 10 | 1.00 | 1.00 | 1 | 1.00 | C | 0.00 | | |
| 11 | 0.07 | 0.08 | (| 0.10 | C | .82 | | |
| 12 | 0.13 | 0.11 | (| 0.10 | C | .87 | | |
| 13 | 0.00 | 0.02 | (| 0.01 | C | .96 | | |
| 14 | 0.61 | 0.53 | (| 0.47 | (| .74 | | |
| | PctNotSpeakEng | glWell PctLa: | rgHouseFam | PctLa | argHouseOccup | Pers | PerOccupHous | \ |
| 0 | | 0.06 | 0.14 | | 0.13 | | 0.33 | |
| 1 | | 0.10 | 0.16 | | 0.10 | | 0.17 | |
| 2 | | 0.04 | 0.20 | | 0.20 | | 0.46 | |
| 3 | | 0.08 | 0.56 | | 0.62 | | 0.85 | |
| 4 | | 0.05 | 0.16 | | 0.19 | | 0.59 | |
| 5 | | 0.28 | 0.25 | | 0.19 | | 0.29 | |
| 6 | | 0.05 | 0.12 | | 0.13 | | 0.42 | |
| 7 | | 0.93 | 0.74 | | 0.75 | | 0.80 | |
| 8 | | 0.01 | 0.12 | | 0.12 | | 0.35 | |
| 9 | | 0.03 | 0.09 | | 0.06 | | 0.15 | |
| 10 | | 0.58 | 0.88 | | 0.82 | | 0.77 | |
| 11 | | 0.08 | 0.34 | | 0.31 | | 0.50 | |
| 12 | | 0.05 | 0.18 | | 0.19 | | 0.50 | |
| 13 | | 0.05 | 0.14 | | 0.14 | | 0.45 | |
| 14 | | 0.32 | 0.26 | | 0.22 | | 0.39 | |
| | PersPerOwnOcc | Hous PersPer | RentOccHous | PctI | PersOwnOccup | PctPe | rsDenseHous | \ |
| 0 | (| 0.39 | 0.28 | | 0.55 | | 0.09 | |
| 1 | (| 0.29 | 0.17 | | 0.26 | | 0.20 | |
| 2 | (| 0.52 | 0.43 | | 0.42 | | 0.15 | |
| 3 | (| 0.77 | 1.00 | | 0.94 | | 0.12 | |
| 4 | (| 0.60 | 0.37 | | 0.89 | | 0.02 | |
| 5 | (| 0.53 | 0.18 | | 0.39 | | 0.26 | |
| 6 | (| 0.54 | 0.24 | | 0.65 | | 0.03 | |
| 7 | (| 0.68 | 0.92 | | 0.39 | | 0.89 | |
| 8 | (| 0.38 | 0.33 | | 0.50 | | 0.10 | |
| 9 | | 0.34 | 0.05 | | 0.48 | | 0.03 | |
| 10 | C | 0.79 | 0.72 | | 0.49 | | 0.91 | |

| 11 | 0.64 0.55 | | | 0.20 | | | .72 | | 0. | |
|----------|-----------------|-----------|--------------|-------|----------|------------|-----------|--------|------|----|
| 12 | | | | 0.25 | | | .83 | | 0. | |
| 13 | 0. | | | 0.19 | | | .65 | | 0. | |
| 14 | 0. | 37 | | 0.45 | | 0 | . 47 | | 0. | 21 |
| | PctHousLess3BR | MedNumBR | HousVac | cant | PctHous | Occup | PctHousO |)wnOcc | \ | |
| 0 | 0.51 | 0.5 | (| 0.21 | | 0.71 | | 0.52 | | |
| 1 | 0.82 | 0.0 | (| 0.02 | | 0.79 | | 0.24 | | |
| 2 | 0.51 | 0.5 | (| 0.01 | | 0.86 | | 0.41 | | |
| 3 | 0.01 | 0.5 | (| 0.01 | | 0.97 | | 0.96 | | |
| 4 | 0.19 | 0.5 | (| 0.01 | | 0.89 | | 0.87 | | |
| 5 | 0.73 | 0.0 | (| 0.02 | | 0.84 | | 0.30 | | |
| 6 | 0.46 | 0.5 | (| 0.01 | | 0.89 | | 0.57 | | |
| 7 | 0.66 | 0.0 | (| 0.01 | | 0.91 | | 0.46 | | |
| 8 | 0.64 | 0.0 | (| 0.04 | | 0.72 | | 0.49 | | |
| 9 | 0.58 | 0.0 | (| 0.02 | | 0.72 | | 0.38 | | |
| 10 | 0.63 | 0.0 | (| 0.06 | | 0.87 | | 0.49 | | |
| 11 | 0.41 | 0.5 | (| 0.02 | | 0.89 | | 0.62 | | |
| 12 | 0.25 | 0.5 | (| 0.01 | | 0.94 | | 0.78 | | |
| 13 | 0.45 | 0.5 | (| 0.01 | | 0.92 | | 0.55 | | |
| 14 | 0.54 | 0.5 | (| 0.10 | | 0.43 | | 0.50 | | |
| | D | | | | | | | | , | |
| • | PctVacantBoarde | | lore6Mos | Med | YrHousBu | | ctHousNoP | | \ | |
| 0 | 0.0 | | 0.26 | | | .65 | | 0.14 | | |
| 1 | 0.0 | | 0.25 | | | .65 | | 0.16 | | |
| 2 | 0.2 | | 0.30 | | | .52 | | 0.47 | | |
| 3 | 0.6 | | 0.47 | | | .52 | | 0.11 | | |
| 4 | 0.0 | | 0.55 | | | .73 | | 0.05 | | |
| 5 | 0.1 | | 0.28 | | | .25 | | 0.02 | | |
| 6 | 0.0 | | 0.49 | | | .38 | | 0.05 | | |
| 7 | 0.2 | | 0.37 | | | .60 | | 0.28 | | |
| 8 9 | 0.0 | | 0.49 | | | .50 .04 | | 0.57 | | |
| | 0.0 | | 0.47 | | | | | 0.01 | | |
| 10 11 | 0.1 | | 0.20 | | | .46 .06 | | 0.05 | | |
| 12 | 0.0 | | 0.43 0.26 | | | .29 | | 0.02 | | |
| 13 | 0.0 | | 0.20 | | | .85 | | 0.01 | | |
| 14 | 0.0 | | 0.21 | | | .79 | | 0.03 | | |
| 17 | 0.0 | O | 0.13 | | O | .10 | | 0.01 | | |
| | PctW0FullPlumb | OwnOccLow | Quart (| OwnOc | cMedVal | 0wn0c | cHiQuart | Rent | LowQ | \ |
| 0 | 0.06 | | 0.22 | | 0.19 | | 0.18 | (| 0.36 | |
| 1 | 0.00 | | 0.21 | | 0.20 | | 0.21 | | 0.42 | |
| 2 | 0.45 | | 0.18 | | 0.17 | | 0.16 | | 0.27 | |
| 3 | 0.11 | | 0.24 | | 0.21 | | 0.19 | | 0.75 | |
| 4 | 0.14 | | 0.31 | | 0.31 | | 0.30 | | 0.40 | |
| 5 | 0.05 | | 0.94 | | 1.00 | | 1.00 | | 0.67 | |
| 6 | 0.05 | | 0.37 | | 0.38 | | 0.39 | (| 0.26 | |
| 7 | 0.23 | | 0.15 | | 0.13 | | 0.13 | (| 0.21 | |
| | | | | | | | | | | |

| 8 | 0 | .22 | 0.07 | | 0.07 | 0.08 | 0.14 |
|----------|-----------------|----------------|------------|----------|---------------------|----------------|------|
| 9 | | .00 | 0.63 | | 0.71 | 0.79 | 0.44 |
| 10 | 0 | .28 | 0.75 | | 0.74 | 0.70 | 0.73 |
| 11 | 0 | .09 | 0.74 | | 0.76 | 0.79 | 0.45 |
| 12 | 0 | .15 | 0.71 | | 0.69 | 0.68 | 0.60 |
| 13 | 0 | .07 | 0.19 | | 0.18 | 0.18 | 0.35 |
| 14 | 0 | .07 | 0.88 | | 0.93 | 0.97 | 0.96 |
| | D + M - 14 | D + II 1- O | M - 4D + 1 | (- JD - | + D -+ II T | - M-10 | LT \ |
| 0 | RentMedian 0.35 | RentHighQ 0.38 | Medkent M | еаке | ntPctHousIn 0.38 | | 0.46 |
| 0 | 0.38 | 0.30 | 0.34 | | 0.3 | | 0.32 |
| 1 2 | 0.38 | 0.40 | 0.31 | | 0.48 | | 0.32 |
| 3 | 0.29 | 0.27 | 0.89 | | 0.40 | | 0.51 |
| 4 | 0.70 | 0.77 | 0.89 | | 0.0 | | 0.51 |
| 5 | 0.63 | 0.68 | 0.62 | | 0.4 | | 0.59 |
| 6 | 0.35 | 0.42 | 0.35 | | 0.4 | | 0.44 |
| 7 | 0.24 | 0.12 | 0.24 | | 0.64 | | 0.59 |
| 8 | 0.17 | 0.16 | 0.15 | | 0.3 | | 0.13 |
| 9 | 0.42 | 0.47 | 0.41 | | 0.23 | | 0.27 |
| 10 | 0.67 | 0.82 | 0.67 | | 0.58 | | 0.67 |
| 11 | 0.54 | 0.65 | 0.49 | | 0.39 | | 0.51 |
| 12 | 0.82 | 1.00 | 0.87 | | 0.40 | | 0.39 |
| 13 | 0.32 | 0.32 | 0.29 | | 0.10 | | 0.35 |
| 14 | 0.91 | 1.00 | 0.87 | | 0.5 | | 0.81 |
| | | | | | | | |
| | MedOwnCostP | • | NumInShelt | | NumStreet | PctForeignBorn | \ |
| 0 | | 0.25 | | 0.04 | 0.00 | 0.12 | |
| 1 | | 0.18 | | 0.00 | 0.00 | 0.21 | |
| 2 | | 0.28 | | 0.00 | 0.00 | 0.14 | |
| 3 | | 0.47 | | 0.00 | 0.00 | 0.19 | |
| 4 | | 0.21 | | 0.00 | 0.00 | 0.11 | |
| 5 | | 0.11 | | 0.00 | 0.00 | 0.70 | |
| 6 | | 0.31 | | 0.00 | 0.00 | 0.15 | |
| 7 | | 0.28 | | 0.00 | 0.00 | 0.59 | |
| 8 | | 0.36 | | 0.01 | 0.00 | 0.01 | |
| 9 | | 0.28 | | 0.00 | 0.00 | 0.22 | |
| 10 | | 0.19 | | 0.07 | 0.14 0.00 | 1.00 | |
| 11 12 | | 0.68 0.46 | | 0.01 | 0.00 | 0.20 | |
| 13 | | 0.46 | | 0.00 | 0.00 | 0.22 | |
| 14 | | 0.20 | | 0.00 | 0.00 | 0.40 | |
| 14 | | 0.21 | | 7.00 | 0.11 | 0.40 | |
| | PctBornSame | State PctS | ameHouse85 | Pct | SameCity85 | PctSameState85 | \ |
| 0 | | 0.42 | 0.50 | | 0.51 | 0.64 | |
| 1 | | 0.50 | 0.34 | | 0.60 | 0.52 | |
| 2 | | 0.49 | 0.54 | | 0.67 | 0.56 | |
| 3 | | 0.30 | 0.73 | | 0.64 | 0.65 | |
| 4 | | 0.72 | 0.64 | | 0.61 | 0.53 | |

| 5 | 0.42 | 0.4 | 9 0.73 | 0.64 | | |
|----|------------------|------------------|-------------------|----------------|-----------|---|
| 6 | 0.81 | 0.7 | 7 0.91 | 0.84 | | |
| 7 | 0.58 | | 0.79 | 0.78 | | |
| 8 | 0.78 | | | 0.75 | | |
| 9 | 0.42 | | | 0.09 | | |
| 10 | 0.35 | | | 0.62 | | |
| 11 | 0.88 | | | 0.93 | | |
| 12 | 0.66 | | 0.66 | 0.73 | | |
| 13 | 0.86 | 0.4 | | 0.69 | | |
| 14 | 0.42 | 0.3 | 1 0.51 | 0.53 | | |
| | LemasSwornFT Le | masSwFTPerPop | LemasSwFTFieldOps | LemasSwFTField | dPerPop \ | \ |
| 0 | 0.03 | 0.13 | 0.96 | | 0.17 | |
| 1 | NaN | NaN | NaN | | NaN | |
| 2 | NaN | NaN | NaN | | NaN | |
| 3 | NaN | NaN | NaN | | NaN | |
| 4 | NaN | NaN | NaN | | NaN | |
| 5 | NaN | NaN | NaN | | NaN | |
| 6 | NaN | NaN | NaN | | NaN | |
| 7 | NaN | NaN | NaN | | NaN | |
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| 10 | NaN | NaN | NaN | | NaN | |
| 11 | NaN | NaN | NaN | | NaN | |
| 12 | NaN | NaN | NaN | | NaN | |
| 13 | NaN | NaN | NaN | | NaN | |
| 14 | NaN | NaN | NaN | | NaN | |
| | LemasTotalReq L | .emasTotReqPerPo | o PolicReqPerOffi | c PolicPerPop | \ | |
| 0 | 0.06 | 0.1 | | • | ` | |
| 1 | NaN | Na | | | | |
| 2 | NaN | Na | | | | |
| 3 | NaN | Na | | | | |
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| 5 | NaN | Na | N Na | N NaN | | |
| 6 | NaN | Na. | N Na | N NaN | | |
| 7 | NaN | Na | N Na | N NaN | | |
| 8 | NaN | Na | N Na | N NaN | | |
| 9 | NaN | Na | N Na | N NaN | | |
| 10 | NaN | Na | N Na | N NaN | | |
| 11 | NaN | Na | N Na | N NaN | | |
| 12 | NaN | Na | N Na | N NaN | | |
| 13 | NaN | Na | N Na | N NaN | | |
| 14 | NaN | Na | N Na | N NaN | | |
| | RacialMatchCommP | Ol Pc+PolicWhi | te PctPolicBlack | PctPolicHisp | \ | |
| 0 | | 94 0.5 | | 0.07 | ` | |
| 1 | | | aN NaN | NaN | | |
| - | 14 | | | 11011 | | |

| 2 | Na | N | NaN | NaN | NaN | | |
|----|------------------|------------|----------|----------------|--------------|-------|---|
| 3 | Na | N | NaN | NaN | NaN | | |
| 4 | Na | N | NaN | NaN | NaN | | |
| 5 | Na | N | NaN | NaN | NaN | | |
| 6 | Na | N | NaN | NaN | NaN | | |
| 7 | Na | N | NaN | NaN | NaN | | |
| 8 | Na | N | NaN | NaN | NaN | | |
| 9 | Na | N | NaN | NaN | NaN | | |
| 10 | Na | N | NaN | NaN | NaN | | |
| 11 | Na | N | NaN | NaN | NaN | | |
| 12 | Na | N | NaN | NaN | NaN | | |
| 13 | Na | N | NaN | NaN | NaN | | |
| 14 | Na | N | NaN | NaN | NaN | | |
| | PctPolicAsian Pc | tPolicMino | r OfficA | ssgnDrugUnits | NumKindsDrug | sSeiz | \ |
| 0 | 0.1 | 0.0 | 7 | 0.02 | | 0.57 | |
| 1 | NaN | Na | N | NaN | | NaN | |
| 2 | NaN | Na | N | NaN | | NaN | |
| 3 | NaN | Na | N | NaN | | NaN | |
| 4 | NaN | Na | N | NaN | | NaN | |
| 5 | NaN | Na | N | NaN | | NaN | |
| 6 | NaN | Na | N | NaN | | NaN | |
| 7 | NaN | Na | N | NaN | | NaN | |
| 8 | NaN | Na | N | NaN | | NaN | |
| 9 | NaN | Na | N | NaN | | NaN | |
| 10 | NaN | Na | N | NaN | | NaN | |
| 11 | NaN | Na | N | NaN | | NaN | |
| 12 | NaN | Na | N | NaN | | NaN | |
| 13 | NaN | Na | N | NaN | | NaN | |
| 14 | NaN | Na | N | NaN | | NaN | |
| | PolicAveOTWorked | LandArea | PopDens | PctUsePubTrans | PolicCars | \ | |
| 0 | 0.29 | 0.12 | 0.26 | 0.20 | | | |
| 1 | NaN | 0.02 | 0.12 | 0.45 | NaN | | |
| 2 | NaN | 0.01 | 0.21 | 0.02 | NaN | | |
| 3 | NaN | 0.02 | 0.39 | 0.28 | NaN | | |
| 4 | NaN | 0.04 | 0.09 | 0.02 | NaN | | |
| 5 | NaN | 0.01 | 0.58 | 0.10 | NaN | | |
| 6 | NaN | 0.05 | 0.08 | 0.06 | NaN | | |
| 7 | NaN | 0.01 | 0.33 | 0.00 | NaN | | |
| 8 | NaN | 0.04 | 0.17 | 0.04 | NaN | | |
| 9 | NaN | 0.00 | 0.47 | 0.11 | NaN | | |
| 10 | NaN | 0.02 | 1.00 | 1.00 | NaN | | |
| 11 | NaN | 0.01 | 0.63 | 1.00 | NaN | | |
| 12 | NaN | 0.03 | 0.18 | 0.59 | NaN | | |
| 13 | NaN | 0.08 | 0.04 | 0.00 | NaN | | |
| 14 | NaN | 0.02 | 0.40 | 0.15 | NaN | | |

| | PolicOperBudg | Lemas | PctPolicOnPatr | LemasGangUnitDeploy | \ |
|---|--------------------|--|---|--|---|
| 0 | 0.04 | | 0.9 | 0.5 | |
| 1 | NaN | | NaN | NaN | |
| 2 | NaN | | NaN | NaN | |
| 3 | NaN | | NaN | NaN | |
| 4 | NaN | | NaN | NaN | |
| 5 | NaN | | NaN | NaN | |
| 6 | NaN | | NaN | NaN | |
| 7 | NaN | | NaN | NaN | |
| 8 | NaN | | NaN | NaN | |
| 9 | NaN | | NaN | NaN | |
| 10 | NaN | | NaN | NaN | |
| 11 | NaN | | NaN | NaN | |
| 12 | NaN | | NaN | NaN | |
| 13 | NaN | | NaN | NaN | |
| 14 | NaN | | NaN | NaN | |
| | | | | | |
| | I omo aDa+Offi aDa | an al In | Doli aDudaDamba | n Wielen+CrimeaDerDer | |
| 0 | LemasPctOfficDr | _ | - | ViolentCrimesPerPop | |
| 0 | LemasPctOfficDr | 0.32 | 0.14 | 1 0.20 | |
| 1 | LemasPctOfficDr | 0.32 | 0.14 Nal | 0.20 0.67 | |
| 1 2 | LemasPctOfficDr | 0.32 0.00 0.00 | 0.14 Nal Nal | 0.20 0.67 0.43 | |
| 1 2 3 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 | 0.14 Nai Nai Nai | 0.20 0.67 0.43 0.12 | |
| 1 2 3 4 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 | 0.1 ² Nal Nal Nal | 0.20 0.67 0.43 0.12 0.03 | |
| 1 2 3 4 5 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 | 0.14 Nai Nai Nai Nai Nai | 0.20 0.67 0.43 0.12 0.03 0.14 | |
| 1 2 3 4 5 6 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 0.00 | 0.14 Nal Nal Nal Nal Nal | 0.20 0.67 0.43 0.12 0.03 0.14 0.03 | |
| 1 2 3 4 5 6 7 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 0.00 0.00 | 0.14 Nai Nai Nai Nai Nai Nai | 0.20 0.67 0.43 0.12 0.03 0.14 0.03 0.03 | |
| 1 2 3 4 5 6 7 8 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00 | 0.14 Nai Nai Nai Nai Nai Nai Nai | 0.20 0.67 0.43 0.12 0.03 0.03 0.14 0.03 0.55 | |
| 1 2 3 4 5 6 7 8 9 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00 | 0.14 Nal Nal Nal Nal Nal Nal Nal | 0.20 0.20 0.67 0.43 0.12 0.03 0.14 0.03 0.03 0.15 | |
| 1 2 3 4 5 6 7 8 9 10 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00 | 0.14 Nai Nai Nai Nai Nai Nai Nai Nai | 0.20 0.67 0.43 0.12 0.03 0.14 0.03 0.14 0.03 0.15 0.53 0.15 | |
| 1 2 3 4 5 6 7 8 9 10 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00 | 0.14 Nal Nal Nal Nal Nal Nal Nal Nal | 0.20 0.67 0.43 0.12 0.03 0.14 0.03 0.14 0.055 0.055 0.053 0.15 0.08 | |
| 1 2 3 4 5 6 7 8 9 10 11 12 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00 | 0.14 Nal Nal Nal Nal Nal Nal Nal Nal Nal | 0.20 0.20 0.67 0.43 0.12 0.03 0.14 0.03 0.03 0.15 0.053 0.15 0.024 0.08 0.06 | |
| 1 2 3 4 5 6 7 8 9 10 11 | LemasPctOfficDr | 0.32 0.00 0.00 0.00 0.00 0.00 0.00 0.00 | 0.14 Nal Nal Nal Nal Nal Nal Nal Nal | 0.20 0.67 0.43 0.12 0.03 0.14 0.03 0.14 0.03 0.15 0.055 0.053 0.15 0.06 0.09 | |

1.1 Clean Data

Some if the data is missing in the dataset. This missing data is filled with the mean value of the feature.

```
In [3]: data_filled = data
        data_filled.iloc[:,4:] = data.iloc[:,4:].apply(lambda x: x.fillna(x.mean()),axis=0)
        data_filled.columns = columns
        display(data_filled.head(30))
                   community
                                        communityname fold population \
    state
          county
0
        8
              {\tt NaN}
                         NaN
                                         Lakewoodcity
                                                           1
                                                                    0.19
                                                                    0.00
1
       53
              NaN
                         NaN
                                          Tukwilacity
                                                           1
```

| 2 | 24 | NaN | NaN | Aberde | entown | 1 | 0.00 | |
|----|---------|--------|------------|------------------|---------|-------|-------------|---|
| 3 | 34 | 5.0 | 81440.0 | Willingboroto | wnship | 1 | 0.04 | |
| 4 | 42 | 95.0 | 6096.0 | Bethlehemto | wnship | 1 | 0.01 | |
| 5 | 6 | NaN | NaN | SouthPasade | nacity | 1 | 0.02 | |
| 6 | 44 | 7.0 | 41500.0 | Linco | lntown | 1 | 0.01 | |
| 7 | 6 | NaN | NaN | Sel | macity | 1 | 0.01 | |
| 8 | 21 | NaN | NaN | Henders | oncity | 1 | 0.03 | |
| 9 | 29 | NaN | NaN | Clayt | oncity | 1 | 0.01 | |
| 10 | 6 | NaN | NaN | DalyCi | tycity | 1 | 0.13 | |
| 11 | 36 | NaN | NaN | RockvilleCentrev | illage | 1 | 0.02 | |
| 12 | 25 | 21.0 | 44105.0 | Needh | amtown | 1 | 0.03 | |
| 13 | 55 | 87.0 | 30075.0 | GrandChu | tetown | 1 | 0.01 | |
| 14 | 6 | NaN | NaN | DanaPoi | ntcity | 1 | 0.04 | |
| 15 | 19 | 187.0 | 91370.0 | FortDod | gecity | 1 | 0.03 | |
| 16 | 36 | 1.0 | 1000.0 | Alba | nycity | 1 | 0.15 | |
| 17 | 34 | 27.0 | 17650.0 | Denvilleto | wnship | 1 | 0.01 | |
| 18 | 18 | NaN | NaN | Valparai | socity | 1 | 0.02 | |
| 19 | 42 | 129.0 | 66376.0 | Rostraverto | wnship | 1 | 0.00 | |
| 20 | 6 | NaN | NaN | Modes | tocity | 1 | 0.25 | |
| 21 | 12 | 31.0 | NaN | Jacksonvil | lecity | 1 | 1.00 | |
| 22 | 41 | NaN | NaN | KlamathFal | lscity | 1 | 0.01 | |
| 23 | 19 | 193.0 | 93926.0 | SiouxCi | tycity | 1 | 0.11 | |
| 24 | 6 | NaN | NaN | Dela | nocity | 1 | 0.02 | |
| 25 | 8 | NaN | NaN | Gold | lencity | 1 | 0.00 | |
| 26 | 6 | NaN | NaN | Garde | nacity | 1 | 0.06 | |
| 27 | 39 | 29.0 | 61798.0 | Perryto | wnship | 1 | 0.01 | |
| 28 | 54 | NaN | NaN | Beckl | eycity | 1 | 0.01 | |
| 29 | 9 | 7.0 | 22490.0 | EastHampt | ontown | 1 | 0.00 | |
| | househo | ldaisa | racepctbla | ck racePctWhite | racePct | Agion | racePctHisp | \ |
| 0 | nousend | 0.33 | 0. | | Tacerci | 0.12 | 0.17 | ` |
| 1 | | 0.33 | 0. | | | 0.12 | 0.07 | |
| 2 | | 0.10 | 0. | | | 0.43 | 0.04 | |
| 3 | | 0.42 | 1. | | | 0.12 | 0.10 | |
| 4 | | 0.77 | 0. | | | 0.12 | 0.05 | |
| 5 | | 0.28 | 0. | | | 1.00 | 0.25 | |
| 6 | | 0.39 | 0. | | | 0.06 | 0.02 | |
| 7 | | 0.74 | 0. | | | 0.20 | 1.00 | |
| 8 | | 0.34 | 0. | | | 0.02 | 0.00 | |
| 9 | | 0.40 | 0. | | | 0.30 | 0.03 | |
| 10 | | 0.71 | 0. | | | 1.00 | 0.41 | |
| 11 | | 0.46 | 0. | | | 0.07 | 0.10 | |
| 12 | | 0.47 | 0. | | | 0.13 | 0.02 | |
| 13 | | 0.44 | 0. | | | 0.04 | 0.01 | |
| 14 | | 0.36 | 0. | | | 0.14 | 0.26 | |
| 15 | | 0.34 | 0. | | | 0.03 | 0.03 | |
| 16 | | 0.31 | 0. | | | 0.14 | 0.06 | |
| 17 | | 0.53 | 0. | | | 0.20 | 0.03 | |
| | | | | | | | | |

| 18 | 0.4 | 17 C | 0.01 | 0.97 | 0.07 | | 0.02 | |
|----|-------------|--------------|---------------|-----------|-------------|--------|----------|---|
| 19 | 0.4 | | 0.05 | 0.96 | 0.01 | | 0.01 | |
| 20 | 0.5 | | 0.05 | 0.71 | 0.48 | | 0.30 | |
| 21 | 0.4 | | .47 | 0.59 | 0.12 | | 0.05 | |
| 22 | 0.3 | | 0.02 | 0.87 | 0.12 | | 0.11 | |
| 23 | 0.4 | | 0.04 | 0.89 | 0.09 | | 0.06 | |
| | | | | | | | | |
| 24 | 0.9 | | 0.05 | 0.00 | 1.00 | | 1.00 | |
| 25 | 0.3 | | 0.02 | 0.91 | 0.16 | | 0.09 | |
| 26 | 0.4 | | 0.46 | 0.00 | 1.00 | | 0.43 | |
| 27 | 0.3 | | 0.01 | 0.99 | 0.02 | | 0.01 | |
| 28 | 0.2 | | .43 | 0.64 | 0.08 | | 0.01 | |
| 29 | 0.5 | 50 0 | 0.01 | 0.98 | 0.02 | | 0.02 | |
| | agePct12t21 | agePct12t29 | agePct16t24 | agePct6 | 55up numbUr | ban po | ctUrban | \ |
| 0 | 0.34 | 0.47 | - | - | _ | .20 | 1.00 | |
| 1 | 0.26 | 0.59 | | | | 0.02 | 1.00 | |
| 2 | 0.39 | 0.47 | | | | 0.00 | 0.00 | |
| 3 | 0.51 | 0.50 | | | | 0.06 | 1.00 | |
| 4 | 0.38 | 0.38 | | | | 0.02 | 0.90 | |
| 5 | 0.31 | 0.48 | | | | 0.04 | 1.00 | |
| 6 | 0.30 | 0.37 | | | | 0.02 | 0.81 | |
| 7 | 0.52 | 0.55 | | | | 0.00 | 0.00 | |
| 8 | 0.38 | 0.45 | | | | 0.04 | 1.00 | |
| 9 | 0.90 | 0.82 | | | | 0.02 | 1.00 | |
| 10 | 0.40 | 0.52 | | | |).15 | 1.00 | |
| 11 | 0.34 | 0.36 | | | | 0.04 | 1.00 | |
| 12 | 0.29 | 0.30 | | | | 0.04 | 1.00 | |
| 13 | 0.29 | 0.53 | | | | 0.02 | 0.77 | |
| | | | | | | | | |
| 14 | 0.32 | 0.46 | | | | 0.05 | 1.00 | |
| 15 | 0.39 | 0.41 | | | | 0.00 | 0.00 | |
| 16 | 0.58 | 0.72 | | | | 0.16 | 1.00 | |
| 17 | 0.34 | 0.39 | | | | 0.02 | 0.76 | |
| 18 | 0.70 | 0.67 | | | | 0.00 | 0.00 | |
| 19 | 0.37 | 0.37 | | | | 0.01 | 0.58 | |
| 20 | 0.42 | 0.48 | | | | .26 | 1.00 | |
| 21 | 0.41 | 0.53 | | | | .00 | 0.99 | |
| 22 | 0.49 | 0.56 | | | | 0.00 | 0.00 | |
| 23 | 0.45 | 0.48 | | | | 13 | 1.00 | |
| 24 | 0.54 | 0.58 | | | | 0.00 | 0.00 | |
| 25 | 0.55 | 0.63 | 0.53 | 3 0 | 0.31 | 0.02 | 1.00 | |
| 26 | 0.35 | 0.50 | 0.32 | 2 0 | 0.34 | 0.08 | 1.00 | |
| 27 | 0.35 | 0.38 | 0.23 | 3 0 |).59 | 0.00 | 0.00 | |
| 28 | 0.36 | 0.33 | 0.22 | 2 0 |).74 | 0.00 | 0.00 | |
| 29 | 0.31 | 0.40 | 0.23 | 3 0 |).25 | 0.00 | 0.00 | |
| | medIncome ; | nctWWage nct | :WFarmSelf po | r+WTnvTnc | nctWsocsec | nc+l/I | Diih∆ee+ | \ |
| 0 | 0.37 | 0.72 | 0.34 | 0.60 | 0.29 | - | 0.15 | ` |
| 1 | 0.31 | 0.72 | 0.11 | 0.45 | 0.25 | | 0.13 | |
| 1 | 0.31 | 0.12 | 0.11 | 0.40 | 0.20 | , | 0.23 | |

| 2 3 4 | | | | | | | |
|---|--|--|--|--|--|--|---|
| 4 | 0.30 | 0.58 | 0.19 | 0.39 | 0.38 | 0.40 | |
| 4 | 0.58 | 0.89 | 0.21 | 0.43 | 0.36 | 0.20 | |
| | 0.50 | 0.72 | 0.16 | 0.68 | 0.44 | 0.11 | |
| 5 | 0.52 | 0.68 | 0.20 | 0.61 | 0.28 | 0.15 | |
| 6 | 0.42 | 0.50 | 0.23 | 0.68 | 0.61 | 0.21 | |
| 7 | 0.16 | 0.44 | 1.00 | 0.23 | 0.53 | 0.97 | |
| 8 | 0.17 | 0.47 | 0.36 | 0.34 | 0.55 | 0.48 | |
| 9 | 0.54 | 0.59 | 0.22 | | 0.42 | 0.02 | |
| 10 | 0.49 | 0.71 | 0.16 | 0.47 | 0.36 | 0.40 | |
| 11 | 0.72 | 0.53 | 0.23 | 0.74 | 0.63 | 0.17 | |
| 12 | 0.80 | 0.55 | 0.18 | | 0.51 | 0.07 | |
| 13 | 0.46 | 0.77 | 0.41 | 0.73 | 0.28 | 0.10 | |
| 14 | 0.71 | 0.67 | 0.42 | | 0.25 | 0.14 | |
| 15 | 0.18 | 0.42 | 0.81 | 0.49 | 0.62 | 0.37 | |
| 16 | 0.22 | 0.52 | 0.10 | 0.51 | 0.48 | 0.39 | |
| 17 | 0.79 | 0.77 | 0.10 | | 0.44 | 0.15 | |
| 18 | 0.33 | 0.77 | 0.13 | | 0.43 | 0.13 | |
| 19 | 0.33 | 0.34 | 0.28 | | 0.70 | 0.36 | |
| 20 | 0.33 | 0.55 | 0.33 | | 0.39 | 0.64 | |
| 21 | 0.33 | 0.62 | 0.37 | 0.36 | 0.40 | 0.30 | |
| 22 | 0.28 | 0.62 | 0.16 | 0.42 | 0.40 | 0.41 | |
| 23 | 0.13 | 0.40 | 0.20 | | 0.56 | 0.41 | |
| 23 24 | 0.22 | 0.52 | 0.44 | | 0.49 | 0.92 | |
| 2 4 25 | 0.10 | 0.64 | 0.41 | 0.14 | 0.30 | 0.15 | |
| 26 | | 0.68 | | | | | |
| | 0.35 | | 0.16 | 0.36 | 0.36 | 0.38 | |
| 27 | 0.23 | 0.38 | 0.39 | 0.51 | 0.64 | 0.35 | |
| 28 | 0.12 | 0.10 | 0.11 | 0.39 | 0.84 | 0.48 | |
| 29 | 0.60 | 0.83 | 0.25 | 0.63 | 0.26 | 0.12 | |
| | pctWRetire | | perCapInc | whitePerCap | blackPerCap | indianPerCap | \ |
| 0 | 0.43 | 0.39 | 0.40 | 0.39 | 0.32 | 0.27 | |
| 1 | 0.39 | 0.29 | 0.37 | 0.38 | 0.33 | 0.16 | |
| 2 | 0.84 | 0.28 | 0.27 | 0.29 | 0.27 | 0.07 | |
| 2 | 0.82 | | | | | | |
| 3 | 0.02 | 0.51 | 0.36 | 0.40 | 0.39 | 0.16 | |
| | 0.71 | 0.51 0.46 | 0.36 0.43 | 0.40 0.41 | 0.39 0.28 | 0.16 0.00 | |
| 3 | | | | | | | |
| 3 4 | 0.71 | 0.46 | 0.43 | 0.41 | 0.28 | 0.00 | |
| 3 4 5 | 0.71 0.25 | 0.46 0.62 | 0.43 0.72 | 0.41 0.76 | 0.28 0.77 | 0.00 0.28 | |
| 3 4 5 6 | 0.71 0.25 0.54 | 0.46 0.62 0.43 | 0.43 0.72 0.47 | 0.41 0.76 0.44 | 0.28 0.77 0.40 | 0.00 0.28 0.24 | |
| 3 4 5 6 7 | 0.71 0.25 0.54 0.41 | 0.46 0.62 0.43 0.15 | 0.43 0.72 0.47 0.10 | 0.41 0.76 0.44 0.12 | 0.28 0.77 0.40 0.08 | 0.00 0.28 0.24 0.17 | |
| 3 4 5 6 7 8 | 0.71 0.25 0.54 0.41 0.43 | 0.46 0.62 0.43 0.15 0.21 | 0.43 0.72 0.47 0.10 0.23 | 0.41 0.76 0.44 0.12 0.23 | 0.28 0.77 0.40 0.08 0.19 | 0.00 0.28 0.24 0.17 0.10 | |
| 3 4 5 6 7 8 9 | 0.71 0.25 0.54 0.41 0.43 0.31 | 0.46 0.62 0.43 0.15 0.21 | 0.43 0.72 0.47 0.10 0.23 0.89 | 0.41 0.76 0.44 0.12 0.23 0.94 | 0.28 0.77 0.40 0.08 0.19 0.11 | 0.00 0.28 0.24 0.17 0.10 0.09 | |
| 3 4 5 6 7 8 9 10 | 0.71 0.25 0.54 0.41 0.43 0.31 | 0.46 0.62 0.43 0.15 0.21 0.85 0.47 | 0.43 0.72 0.47 0.10 0.23 0.89 0.33 | 0.41 0.76 0.44 0.12 0.23 0.94 | 0.28 0.77 0.40 0.08 0.19 0.11 0.40 | 0.00 0.28 0.24 0.17 0.10 0.09 | |
| 3 4 5 6 7 8 9 10 11 | 0.71 0.25 0.54 0.41 0.43 0.31 0.45 | 0.46 0.62 0.43 0.15 0.21 0.85 0.47 0.80 | 0.43 0.72 0.47 0.10 0.23 0.89 0.33 0.72 | 0.41 0.76 0.44 0.12 0.23 0.94 0.37 | 0.28 0.77 0.40 0.08 0.19 0.11 0.40 0.36 | 0.00 0.28 0.24 0.17 0.10 0.09 0.22 0.70 | |
| 3 4 5 6 7 8 9 10 11 | 0.71 0.25 0.54 0.41 0.43 0.31 0.45 0.59 | 0.46 0.62 0.43 0.15 0.21 0.85 0.47 0.80 0.82 | 0.43 0.72 0.47 0.10 0.23 0.89 0.33 0.72 | 0.41 0.76 0.44 0.12 0.23 0.94 0.37 0.71 | 0.28 0.77 0.40 0.08 0.19 0.11 0.40 0.36 0.62 | 0.00 0.28 0.24 0.17 0.10 0.09 0.22 0.70 0.14 | |
| 3 4 5 6 7 8 9 10 11 12 13 | 0.71 0.25 0.54 0.41 0.43 0.31 0.45 0.59 | 0.46 0.62 0.43 0.15 0.21 0.85 0.47 0.80 0.82 0.47 | 0.43 0.72 0.47 0.10 0.23 0.89 0.33 0.72 0.78 | 0.41 0.76 0.44 0.12 0.23 0.94 0.37 0.71 0.77 | 0.28 0.77 0.40 0.08 0.19 0.11 0.40 0.36 0.62 0.38 | 0.00 0.28 0.24 0.17 0.10 0.09 0.22 0.70 0.14 0.32 | |
| 3 4 5 6 7 8 9 10 11 12 13 14 | 0.71 0.25 0.54 0.41 0.43 0.31 0.45 0.59 0.55 0.22 | 0.46 0.62 0.43 0.15 0.21 0.85 0.47 0.80 0.82 0.47 | 0.43 0.72 0.47 0.10 0.23 0.89 0.33 0.72 0.78 0.41 | 0.41 0.76 0.44 0.12 0.23 0.94 0.37 0.71 0.77 0.40 | 0.28 0.77 0.40 0.08 0.19 0.11 0.40 0.36 0.62 0.38 0.29 | 0.00 0.28 0.24 0.17 0.10 0.09 0.22 0.70 0.14 0.32 0.37 | |

| 18 | 0.40 | 0.41 | 0.34 | 0.32 | 0.22 | | 0.37 |
|----|---------------|--------------|-------------|---------------------|---------|----------|------|
| 19 | 0.87 | 0.24 | 0.22 | 0.21 | 0.24 | | 0.15 |
| 20 | 0.44 | 0.32 | 0.29 | 0.32 | 0.23 | | 0.17 |
| 21 | 0.45 | 0.29 | 0.30 | 0.35 | 0.21 | | 0.20 |
| 22 | 0.41 | 0.17 | 0.20 | 0.20 | 0.13 | | 0.08 |
| 23 | 0.39 | 0.25 | 0.25 | 0.25 | 0.16 | | 0.07 |
| 24 | 0.28 | 0.12 | 0.08 | 0.20 | 0.14 | | 0.11 |
| 25 | 0.41 | 0.32 | 0.34 | 0.34 | 0.27 | | 0.15 |
| 26 | 0.34 | 0.34 | 0.32 | 0.32 | 0.38 | | 0.17 |
| 27 | 0.63 | 0.24 | 0.23 | 0.22 | 0.23 | | 0.25 |
| 28 | 0.82 | 0.21 | 0.25 | 0.27 | 0.16 | | 0.28 |
| 29 | 0.31 | 0.58 | 0.48 | 0.46 | 0.41 | | 0.08 |
| 20 | 0.01 | 0.00 | 0.10 | 0.10 | 0.11 | | 0.00 |
| | _ | OtherPerCap | | ${\tt NumUnderPov}$ | PctPopU | | \ |
| 0 | 0.27 | 0.36 | 0.41 | 0.08 | | 0.19 | |
| 1 | 0.30 | 0.22 | 0.35 | 0.01 | | 0.24 | |
| 2 | 0.29 | 0.28 | 0.39 | 0.01 | | 0.27 | |
| 3 | 0.25 | 0.36 | 0.44 | 0.01 | | 0.10 | |
| 4 | 0.74 | 0.51 | 0.48 | 0.00 | | 0.06 | |
| 5 | 0.52 | 0.48 | 0.60 | 0.01 | | 0.12 | |
| 6 | 0.86 | 0.24 | 0.36 | 0.01 | | 0.11 | |
| 7 | 0.27 | 0.18 | 0.21 | 0.03 | | 0.64 | |
| 8 | 0.26 | 0.29 | 0.22 | 0.04 | | 0.45 | |
| 9 | 0.33 | 0.17 | 0.80 | 0.00 | | 0.11 | |
| 10 | 0.32 | 0.34 | 0.38 | 0.06 | | 0.18 | |
| 11 | 0.43 | 0.35 | 0.41 | 0.01 | | 0.07 | |
| 12 | 0.54 | 0.17 | 0.46 | 0.01 | | 0.07 | |
| 13 | 0.09 | 0.13 | 0.75 | 0.00 | | 0.07 | |
| 14 | 0.53 | 0.28 | 0.38 | 0.02 | | 0.18 | |
| 15 | 0.46 | 0.33 | 0.28 | 0.03 | | 0.33 | |
| 16 | 0.20 | 0.20 | 0.30 | 0.15 | | 0.48 | |
| 17 | 0.51 | 1.00 | 0.62 | 0.00 | | 0.04 | |
| 18 | 0.69 | 0.72 | 0.35 | 0.02 | | 0.22 | |
| 19 | 0.00 | 0.00 | 0.31 | 0.01 | | 0.28 | |
| 20 | 0.17 | 0.24 | 0.30 | 0.19 | | 0.34 | |
| 21 | 0.33 | 0.28 | 0.40 | 0.76 | | 0.33 | |
| 22 | 0.18 | 0.17 | 0.19 | 0.03 | | 0.58 | |
| 23 | 0.20 | 0.19 | 0.22 | 0.10 | | 0.36 | |
| 24 | 0.17 | 0.18 | 0.21 | 0.05 | | 0.63 | |
| 25 | 0.15 | 0.30 | 0.35 | 0.01 | | 0.30 | |
| 26 | 0.37 | 0.28 | 0.33 | 0.04 | | 0.25 | |
| 27 | 0.48 | 0.20 | 0.51 | 0.02 | | 0.32 | |
| 28 | 1.00 | 0.00 | 0.86 | 0.03 | | 0.57 | |
| 29 | 0.39 | 0.38 | 0.41 | 0.00 | | 0.01 | |
| _0 | 0.00 | 0.00 | 0.11 | 0.00 | | | |
| | PctLess9thGra | ade PctNotHS | Grad PctBSc | rMore PctUne | mployed | PctEmplo | оу \ |
| 0 | | | 0.18 | 0.48 | 0.27 | 0.6 | • |
| 1 | | | 0.24 | 0.30 | 0.27 | 0.7 | |
| | | | | | | | |

| 2 | 0 | 0.43 | 0.19 | 0.36 | 0.58 |
|----|-------------|-----------------|--------------|------------------|------|
| 3 | 0 | 0.09 | 0.31 | 0.33 | 0.71 |
| 4 | 0 | 0.30 | 0.33 | 0.12 | 0.65 |
| 5 | 0 | 0.13 | 0.80 | 0.10 | 0.65 |
| 6 | 0 | 0.49 | 0.36 | 0.28 | 0.54 |
| 7 | 0 | 0.85 | 0.12 | 1.00 | 0.26 |
| 8 | 0 | 0.52 | 0.17 | 0.55 | 0.43 |
| 9 | 0 | 0.04 | 1.00 | 0.11 | 0.44 |
| 10 | 0 | 0.33 | 0.38 | 0.32 | 0.62 |
| 11 | 0 | 0.18 | 0.72 | 0.18 | 0.51 |
| 12 | 0 | 0.07 | 0.89 | 0.24 | 0.55 |
| 13 | | 0.20 | | 0.13 | 0.76 |
| 14 | | 0.11 | | 0.19 | 0.68 |
| 15 | | 0.30 | | 0.32 | 0.42 |
| 16 | | 0.30 | | 0.37 | 0.44 |
| 17 | | 0.10 | | 0.11 | 0.68 |
| 18 | | 0.16 | | 0.19 | 0.48 |
| 19 | | 0.38 | | 0.72 | 0.25 |
| 20 | | 0.34 | | 0.59 | 0.43 |
| 21 | | 0.25 | | 0.30 | 0.59 |
| 22 | | 0.42 | | 0.63 | 0.32 |
| 23 | | 0.29 0.3 | | 0.33 | 0.53 |
| 24 | | .00 1.00 | | 1.00 | 0.22 |
| 25 | | 0.11 | | 0.30 | 0.56 |
| 26 | | 0.35 0.46 | | 0.35 | 0.57 |
| 27 | | 0.30 0.4 | | 0.34 | 0.37 |
| 28 | | 0.46 | | 0.54 | 0.13 |
| 29 | | 0.18 0.2 | | 0.22 | 0.81 |
| | · | | 0.11 | V | 0.02 |
| | PctEmplManu | PctEmplProfServ | PctOccupManu | PctOccupMgmtProf | \ |
| 0 | 0.23 | 0.41 | 0.25 | 0.52 | · |
| 1 | 0.57 | 0.15 | 0.42 | 0.36 | |
| 2 | 0.32 | 0.29 | 0.49 | 0.32 | |
| 3 | 0.36 | 0.45 | 0.37 | 0.39 | |
| 4 | 0.67 | 0.38 | 0.42 | 0.46 | |
| 5 | 0.19 | 0.77 | 0.06 | 0.91 | |
| 6 | 0.44 | 0.53 | 0.33 | 0.49 | |
| 7 | 0.43 | 0.34 | 0.71 | 0.18 | |
| 8 | 0.59 | 0.36 | 0.64 | 0.29 | |
| 9 | 0.20 | 1.00 | 0.02 | 0.96 | |
| 10 | 0.20 | 0.29 | 0.35 | 0.30 | |
| 11 | 0.18 | 0.67 | 0.13 | 0.79 | |
| 12 | 0.29 | 0.73 | 0.10 | 0.88 | |
| 13 | 0.67 | 0.24 | 0.42 | 0.47 | |
| 14 | 0.28 | 0.35 | 0.15 | 0.61 | |
| 15 | 0.38 | 0.48 | 0.48 | 0.36 | |
| 16 | 0.08 | 0.73 | 0.21 | 0.53 | |
| 17 | 0.42 | 0.37 | 0.21 | 0.66 | |
| | V . 12 | 0.01 | 0.21 | 0.00 | |

| 18 | 0.36 | 0.77 | 0.25 | 0. | 56 | |
|----|----------------|--------------------|--------------|--------------|------------|---|
| 19 | 0.39 | 0.35 | 0.49 | | 34 | |
| 20 | 0.38 | 0.41 | 0.43 | | 36 | |
| 21 | 0.18 | 0.33 | 0.35 | | 38 | |
| 22 | 0.45 | 0.44 | 0.56 | | 34 | |
| 23 | 0.43 | 0.47 | 0.44 | | 33 | |
| 24 | 0.09 | 0.26 | 0.32 | | 16 | |
| 25 | 0.33 | 0.53 | 0.31 | | 58 | |
| 26 | 0.62 | 0.23 | 0.42 | | 32 | |
| 27 | 0.78 | 0.35 | 0.71 | | 25 | |
| 28 | 0.05 | 0.77 | 0.18 | | 57 | |
| 29 | 0.52 | 0.47 | 0.27 | | 57 | |
| 20 | 0.02 | 0.11 | 0.21 | 0. | 01 | |
| | MalePctDivorce | MalePctNevMarr | FemalePctDiv | TotalPctDiv | PersPerFam | \ |
| 0 | 0.68 | 0.40 | 0.75 | 0.75 | 0.35 | |
| 1 | 1.00 | 0.63 | 0.91 | 1.00 | 0.29 | |
| 2 | 0.63 | 0.41 | 0.71 | 0.70 | 0.45 | |
| 3 | 0.34 | 0.45 | 0.49 | 0.44 | 0.75 | |
| 4 | 0.22 | 0.27 | 0.20 | 0.21 | 0.51 | |
| 5 | 0.49 | 0.57 | 0.61 | 0.58 | 0.44 | |
| 6 | 0.25 | 0.34 | 0.28 | 0.28 | 0.42 | |
| 7 | 0.38 | 0.47 | 0.59 | 0.52 | 0.78 | |
| 8 | 0.62 | 0.26 | 0.66 | 0.67 | 0.37 | |
| 9 | 0.30 | 0.85 | 0.39 | 0.36 | 0.31 | |
| 10 | 0.41 | 0.55 | 0.46 | 0.46 | 0.85 | |
| 11 | 0.18 | 0.40 | 0.24 | 0.22 | 0.59 | |
| 12 | 0.13 | 0.38 | 0.20 | 0.18 | 0.50 | |
| 13 | 0.37 | 0.39 | 0.27 | 0.32 | 0.47 | |
| 14 | 0.60 | 0.50 | 0.68 | 0.66 | 0.35 | |
| 15 | 0.50 | 0.34 | 0.45 | 0.49 | 0.38 | |
| 16 | 0.50 | 0.94 | 0.45 | 0.49 | 0.36 | |
| 17 | 0.25 | 0.40 | 0.25 | 0.26 | 0.52 | |
| 18 | 0.38 | 0.58 | 0.43 | 0.43 | 0.41 | |
| 19 | 0.31 | 0.29 | 0.27 | 0.30 | 0.41 | |
| 20 | 0.60 | 0.35 | 0.68 | 0.67 | 0.60 | |
| 21 | 0.69 | 0.41 | 0.71 | 0.73 | 0.47 | |
| 22 | 0.72 | 0.49 | 0.69 | 0.72 | 0.40 | |
| 23 | 0.48 | 0.39 | 0.48 | | 0.49 | |
| 24 | 0.28 | 0.49 | 0.36 | 0.33 | 1.00 | |
| 25 | 0.60 | 0.73 | 0.66 | 0.64 | 0.28 | |
| 26 | 0.55 | 0.59 | 0.65 | 0.62 | 0.58 | |
| 27 | 0.51 | 0.25 | 0.47 | 0.50 | 0.40 | |
| 28 | 0.61 | 0.33 | 0.58 | | 0.35 | |
| 29 | 0.41 | 0.35 | 0.38 | 0.40 | 0.47 | |
| | DatEamOD D | .V.+ J.= OD= D-+ V | | а#Па am OD \ | | |
| 0 | | | • | ctTeen2Par \ | | |
| 0 | 0.55 | 0.59 | 0.61 | 0.56 | | |
| 1 | 0.43 | 0.47 | 0.60 | 0.39 | | |

| 2 | 0.42 | 0.44 | 0.43 | 0. | 43 | |
|----|---------------------|------------|----------|----------|----------|---|
| 3 | | 0.54 | 0.83 | | 65 | |
| 4 | | 0.91 | 0.89 | | 85 | |
| 5 | | 0.69 | 0.87 | | 53 | |
| 6 | | 0.81 | 0.79 | | 74 | |
| 7 | | 0.43 | 0.73 | | 34 | |
| 8 | | 0.55 | 0.54 | | 47 | |
| 9 | | 0.73 | | | 67 | |
| | | | 0.78 | | | |
| 10 | | 0.56 | 0.68 | | 62 | |
| 11 | | 0.87 | 0.89 | | 78 | |
| 12 | | 0.90 | 0.87 | | 73 | |
| 13 | | 0.92 | 0.88 | | 82 | |
| 14 | | 0.68 | 0.87 | | 59 | |
| 15 | | 0.60 | 0.61 | | 52 | |
| 16 | | 0.25 | 0.25 | | 19 | |
| 17 | | 0.88 | 0.97 | | 74 | |
| 18 | | 0.73 | 0.72 | | 63 | |
| 19 | | 0.74 | 0.83 | 0. | 89 | |
| 20 | 0.60 | 0.61 | 0.64 | 0. | 61 | |
| 21 | 0.53 | 0.51 | 0.59 | 0. | 51 | |
| 22 | 0.49 | 0.53 | 0.47 | 0. | 68 | |
| 23 | 0.59 | 0.61 | 0.51 | 0. | 66 | |
| 24 | 0.54 | 0.46 | 0.42 | 0. | 60 | |
| 25 | 0.58 | 0.60 | 0.75 | 0. | 59 | |
| 26 | 0.47 | 0.47 | 0.61 | 0. | 46 | |
| 27 | 0.65 | 0.68 | 0.76 | 0. | 59 | |
| 28 | 0.41 | 0.44 | 0.42 | 0. | 55 | |
| 29 | 0.83 | 0.83 | 0.79 | 0. | 81 | |
| | | | | | | |
| | PctWorkMomYoungKids | PctWorkMom | NumIlleg | PctIlleg | NumImmig | \ |
| 0 | 0.74 | 0.76 | 0.04 | 0.14 | 0.03 | |
| 1 | 0.46 | 0.53 | 0.00 | 0.24 | 0.01 | |
| 2 | 0.71 | 0.67 | 0.01 | 0.46 | 0.00 | |
| 3 | 0.85 | 0.86 | 0.03 | 0.33 | 0.02 | |
| 4 | 0.40 | 0.60 | 0.00 | 0.06 | 0.00 | |
| 5 | 0.30 | 0.43 | 0.00 | 0.11 | 0.04 | |
| 6 | 0.57 | 0.62 | 0.00 | 0.13 | 0.01 | |
| 7 | 0.29 | 0.27 | 0.02 | 0.50 | 0.02 | |
| 8 | 0.65 | 0.64 | 0.02 | 0.29 | 0.00 | |
| 9 | 0.72 | 0.71 | 0.00 | 0.07 | 0.01 | |
| 10 | 0.83 | 0.81 | 0.05 | 0.30 | 0.28 | |
| 11 | 0.31 | 0.39 | 0.01 | 0.14 | 0.01 | |
| 12 | 0.33 | 0.48 | 0.00 | 0.14 | 0.01 | |
| 13 | 0.56 | 0.60 | 0.00 | 0.08 | 0.00 | |
| 14 | 0.30 | | | | | |
| 15 | | 0.30 | 0.01 | 0.10 | 0.03 | |
| | 0.64 | 0.71 | 0.01 | 0.19 | 0.00 | |
| 16 | 0.61 | 0.65 | 0.13 | 0.73 | 0.05 | |
| 17 | 0.51 | 0.48 | 0.00 | 0.04 | 0.01 | |

| 18 19 20 21 22 23 24 25 26 27 | | 0.45 0.30 0.55 0.37 0.68 0.47 0.65 0.56 | 0.60 0.31 0.30 0.56 0.48 0.71 0.47 0.67 0.49 | 0.01 0.00 0.08 0.49 0.01 0.05 0.03 0.00 0.05 | 0.11 0.06 0.22 0.35 0.20 0.26 0.43 0.07 0.49 0.06 | 0. 0. 0. 0. 0. | 00 00 14 16 00 02 06 00 10 | | |
|--|----------------|--|--|--|--|----------------------------|--|---------|---|
| 28 | | 0.23 | 0.40 | 0.01 | 0.29 | | .00 | | |
| 29 | | 0.70 | 0.82 | 0.00 | 0.04 | 0. | .00 | | |
| | PctImmigRecent | _ | | • | PctImmigR | ec10 | PctRece | ntImmig | \ |
| 0 | 0.24 | 0.2 | 7 | 0.37 | (| 0.39 | | 0.07 | |
| 1 | 0.52 | 0.6 | 2 | 0.64 | (| 0.63 | | 0.25 | |
| 2 | 0.07 | 0.0 | 6 | 0.15 | (| 0.19 | | 0.02 | |
| 3 | 0.11 | 0.2 | 0 | 0.30 | (| 0.31 | | 0.05 | |
| 4 | 0.03 | 0.0 | 7 | 0.20 | (| 0.27 | | 0.01 | |
| 5 | 0.30 | 0.3 | 5 | 0.43 | (| 0.47 | | 0.50 | |
| 6 | 0.00 | 0.0 | 2 | 0.02 | (| 0.10 | | 0.00 | |
| 7 | 0.50 | 0.5 | 9 | 0.65 | (| 0.59 | | 0.69 | |
| 8 | 0.12 | 0.0 | 9 | 0.07 | (| 0.13 | | 0.00 | |
| 9 | 0.41 | 0.4 | 4 | 0.52 | (| 0.48 | | 0.22 | |
| 10 | 0.36 | 0.4 | 3 | 0.52 | (| 0.57 | | 1.00 | |
| 11 | 0.11 | 0.1 | 7 | 0.21 | (| 0.27 | | 0.05 | |
| 12 | 0.25 | 0.2 | 8 | 0.26 | (| 0.25 | | 0.13 | |
| 13 | 0.08 | 0.0 | 6 | 0.25 | (| 0.22 | | 0.01 | |
| 14 | 0.69 | 0.7 | 4 | 0.70 | (| 0.69 | | 0.65 | |
| 15 | 0.05 | 0.0 | 4 | 0.03 | (| 0.13 | | 0.00 | |
| 16 | 0.39 | 0.3 | 9 | 0.46 | (| 0.46 | | 0.21 | |
| 17 | 0.15 | 0.2 | 6 | 0.32 | (| 0.30 | | 0.09 | |
| 18 | 0.40 | 0.3 | 5 | 0.37 | (| 0.39 | | 0.08 | |
| 19 | 0.00 | 0.0 | 0 | 0.00 | (| 0.00 | | 0.00 | |
| 20 | 0.31 | | | 0.57 | | 0.64 | | 0.28 | |
| 21 | 0.27 | 0.3 | 4 | 0.40 | (| 0.43 | | 0.07 | |
| 22 | 0.48 | 0.5 | 5 | 0.59 | (| 0.56 | | 0.14 | |
| 23 | 0.49 | 0.5 | 9 | 0.62 | (| 0.64 | | 0.11 | |
| 24 | 0.36 | 0.4 | 2 | 0.53 | (| 0.60 | | 1.00 | |
| 25 | 0.79 | 0.7 | 7 | 0.69 | (| 0.61 | | 0.29 | |
| 26 | 0.39 | | | 0.59 | | 0.65 | | 0.80 | |
| 27 | 0.18 | | | 0.11 | | 0.09 | | 0.02 | |
| 28 | 0.10 | | | 0.13 | | 0.14 | | 0.01 | |
| 29 | 0.22 | | | 0.19 | | 0.16 | | 0.04 | |
| | | | | | | | | | |
| | PctRecImmig5 | _ | PctR | _ | PctSpeakEng | | | | |
| 0 | 0.07 | 0.08 | | 0.08 | | 0.89 | | | |
| 1 | 0.27 | 0.25 | | 0.23 | | 0.84 | Į | | |

| _ | 0.00 | 0.04 | 0.05 | 0.00 | | |
|--|---|---|---|---|--|---|
| 2 | 0.02 | 0.04 | 0.05 | 0.88 | | |
| 3 | 0.08 | 0.11 | 0.11 | 0.81 | | |
| 4 | 0.02 | 0.04 | 0.05 | 0.88 | | |
| 5 | 0.50 | 0.56 | 0.57 | 0.45 | | |
| 6 | 0.01 | 0.01 | 0.03 | 0.73 | | |
| 7 | 0.72 | 0.71 | 0.60 | 0.12 | | |
| 8 | 0.00 | 0.00 | 0.00 | 0.99 | | |
| 9 | 0.21 | 0.22 | 0.19 | 0.85 | | |
| 10 | 1.00 | 1.00 | 1.00 | 0.00 | | |
| 11 | 0.07 | 0.08 | 0.10 | 0.82 | | |
| 12 | 0.13 | 0.11 | 0.10 | 0.87 | | |
| 13 | 0.00 | 0.02 | 0.01 | 0.96 | | |
| 14 | 0.61 | 0.53 | 0.47 | 0.74 | | |
| 15 | 0.00 | 0.00 | 0.01 | 0.95 | | |
| 16 | 0.19 | 0.20 | 0.18 | 0.81 | | |
| 17 | 0.14 | 0.15 | 0.13 | 0.82 | | |
| 18 | 0.06 | 0.06 | 0.06 | 0.95 | | |
| 19 | 0.00 | 0.00 | 0.00 | 0.94 | | |
| 20 | 0.36 | 0.41 | 0.42 | 0.64 | | |
| 21 | 0.07 | 0.08 | 0.08 | 0.90 | | |
| 22 | 0.14 | 0.13 | 0.12 | 0.90 | | |
| 23 | 0.11 | 0.11 | 0.10 | 0.92 | | |
| 24 | 1.00 | 1.00 | 1.00 | 0.00 | | |
| 25 | 0.25 | 0.20 | 0.17 | 0.88 | | |
| 26 | 0.84 | 0.96 | 0.97 | 0.26 | | |
| | | | | | | |
| 7.1 | (),()1 | (),()1 | 0.01 | 0.95 | | |
| 27 28 | 0.01 | 0.01 | 0.01 | 0.95 0.94 | | |
| 28 | 0.01 | 0.01 | 0.01 | 0.94 | | |
| | | | | | | |
| 28 | 0.01 0.02 | 0.01 0.03 | 0.01 0.02 | 0.94 0.94 | cupHous | \ |
| 28 29 | 0.01 0.02 PctNotSpeakEnglWell | 0.01 0.03 PctLargHouseFam | 0.01 0.02 PctLargHouseOcc | 0.94 0.94 cup PersPerOc | _ | \ |
| 28 29 0 | 0.01 0.02 PctNotSpeakEnglWell 0.06 | 0.01 0.03 PctLargHouseFam 0.14 | 0.01 0.02 PctLargHouseOcc | 0.94 0.94 cup PersPerOc 13 | 0.33 | \ |
| 28 29 0 1 | 0.01 0.02 PctNotSpeakEnglWell | 0.01 0.03 PctLargHouseFam | 0.01 0.02 PctLargHouseOcc | 0.94 0.94 cup PersPerOc | _ | \ |
| 28 29 0 1 2 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 | 0.01 0.02 PctLargHouseOcc 0. 0. | 0.94 0.94 sup PersPerOc 13 10 20 | 0.33 0.17 0.46 | \ |
| 28 29 0 1 2 3 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 | 0.33 0.17 0.46 0.85 | \ |
| 28 29 0 1 2 3 4 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 | 0.33 0.17 0.46 0.85 0.59 | \ |
| 28 29 0 1 2 3 4 5 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. | 0.94 0.94 eup PersPerOc 13 10 20 62 19 | 0.33 0.17 0.46 0.85 0.59 0.29 | \ |
| 28 29 0 1 2 3 4 5 6 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 19 19 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 | \ |
| 28 29 0 1 2 3 4 5 6 7 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. | 0.94 0.94 eup PersPerOc 13 10 20 62 19 19 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. | 0.94 0.94 eup PersPerOc 13 10 20 62 19 19 13 75 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 9 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 0.74 0.12 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 19 19 13 75 12 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 0.15 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 9 10 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 0.74 0.12 0.09 0.88 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 19 19 13 75 12 06 82 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 0.15 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 9 10 11 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 0.03 0.58 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 0.74 0.12 0.09 0.88 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 19 19 13 75 12 06 82 31 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 0.15 0.77 0.50 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 9 10 11 12 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 0.03 0.58 0.08 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 0.74 0.12 0.09 0.88 0.34 0.18 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. | 0.94 0.94 eup PersPerOc 13 10 20 62 19 19 13 75 12 06 82 31 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 0.15 0.77 0.50 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 9 10 11 12 13 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 0.03 0.58 0.08 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 0.74 0.12 0.09 0.88 0.34 0.18 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 19 19 13 75 12 06 82 31 19 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 0.15 0.77 0.50 0.45 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 0.03 0.58 0.08 0.05 0.08 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 0.74 0.12 0.09 0.88 0.34 0.18 0.14 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 19 19 13 75 12 06 82 31 19 14 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 0.15 0.77 0.50 0.50 0.45 0.39 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 0.03 0.58 0.08 0.05 0.08 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 0.74 0.12 0.09 0.88 0.34 0.18 0.14 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 19 19 13 75 12 06 82 31 19 14 22 12 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 0.15 0.77 0.50 0.50 0.45 0.39 0.32 | \ |
| 28 29 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 | 0.01 0.02 PctNotSpeakEnglWell 0.06 0.10 0.04 0.08 0.05 0.28 0.05 0.93 0.01 0.03 0.58 0.08 0.05 0.08 | 0.01 0.03 PctLargHouseFam 0.14 0.16 0.20 0.56 0.16 0.25 0.12 0.74 0.12 0.09 0.88 0.34 0.18 0.14 | 0.01 0.02 PctLargHouseOcc 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. | 0.94 0.94 cup PersPerOc 13 10 20 62 19 19 13 75 12 06 82 31 19 14 | 0.33 0.17 0.46 0.85 0.59 0.29 0.42 0.80 0.35 0.15 0.77 0.50 0.50 0.45 0.39 | |

| 18 | 0. | .01 | 0.12 | | 0.11 | | 0.33 | |
|----|-------------------|----------|--------------|--------------|--------|------------|--------|---|
| 19 | 0. | .02 | 0.10 | | 0.12 | | 0.46 | |
| 20 | 0. | . 35 | 0.43 | | 0.39 | | 0.56 | |
| 21 | 0. | .04 | 0.23 | | 0.20 | | 0.42 | |
| 22 | 0. | 0.10 | | | 0.18 | | 0.32 | |
| 23 | | . 09 | 0.23 0.27 | | 0.24 | | 0.43 | |
| 24 | | .00 | 1.00 | | 1.00 | | 1.00 | |
| 25 | | . 03 | 0.08 | | 0.08 | | 0.24 | |
| 26 | | . 67 | 0.46 | | 0.40 | | 0.51 | |
| 27 | | .01 | 0.13 | | 0.13 | | 0.38 | |
| 28 | | . 03 | 0.16 | | 0.13 | | 0.26 | |
| 29 | | .02 | 0.14 | | 0.15 | | 0.51 | |
| | | | | | | | | |
| | PersPerOwnOccHous | s PersPe | rRentOccHous | PctPersOwnOc | cup | PctPersDen | seHous | \ |
| 0 | 0.39 | | 0.28 | | .55 | | 0.09 | |
| 1 | 0.29 | | 0.17 | | .26 | | 0.20 | |
| 2 | 0.52 | | 0.43 | | .42 | | 0.15 | |
| 3 | 0.77 | | 1.00 | | .94 | | 0.12 | |
| 4 | 0.60 | | 0.37 | | .89 | | 0.02 | |
| 5 | 0.53 | | 0.18 | | .39 | | 0.26 | |
| 6 | 0.54 | | 0.24 | | .65 | | 0.03 | |
| 7 | 0.68 | | 0.92 | | .39 | | 0.89 | |
| 8 | 0.38 | | 0.33 | | .50 | | 0.10 | |
| 9 | 0.34 | | 0.05 | | .48 | | 0.03 | |
| 10 | 0.79 | | 0.72 | | .49 | | 0.91 | |
| 11 | 0.64 | | 0.20 | | .72 | | 0.09 | |
| 12 | 0.55 | | 0.25 | | .83 | | 0.02 | |
| 13 | 0.63 | | 0.19 | | .65 | | 0.04 | |
| 14 | 0.37 | | 0.45 | | .47 | | 0.21 | |
| 15 | 0.39 | | 0.22 | | .62 | | 0.04 | |
| 16 | 0.33 | | 0.22 | | .24 | | 0.10 | |
| 17 | 0.58 | | 0.34 | | .89 | | 0.04 | |
| 18 | 0.49 | | 0.19 | | .54 | | 0.06 | |
| 19 | 0.45 | | 0.41 | | .83 | | 0.04 | |
| 20 | 0.54 | | 0.60 | | .47 | | 0.39 | |
| 21 | 0.46 | | 0.40 | | .55 | | 0.20 | |
| 22 | 0.37 | | 0.32 | | .38 | | 0.18 | |
| 23 | 0.48 | | 0.35 | | .64 | | 0.12 | |
| 24 | 1.00 | | 1.00 | | .39 | | 1.00 | |
| 25 | 0.30 | | 0.23 | | .49 | | 0.09 | |
| 26 | 0.48 | | 0.56 | | .30 | | 0.81 | |
| 27 | 0.41 | | 0.32 | | .66 | | 0.03 | |
| 28 | 0.26 | | 0.30 | | .53 | | 0.07 | |
| 29 | 0.58 | | 0.29 | | .81 | | 0.04 | |
| | 0.00 | - | 0.20 | O . | | | 3.01 | |
| | PctHousLess3BR N | MedNumBR | HousVacant | PctHousOccup | PctF | HousOwnOcc | \ | |
| 0 | 0.51 | 0.5 | 0.21 | 0.71 | _ 5 51 | 0.52 | • | |
| 1 | 0.82 | 0.0 | 0.02 | 0.79 | | 0.24 | | |
| _ | 3.32 | 0.3 | 0.02 | | | · · - · | | |

| 2 | 0.51 | 0.5 | 0.01 | 0.8 | 0.41 |
|----|------------------|--------------|----------|-----------|------------------|
| 3 | 0.01 | 0.5 | 0.01 | 0.9 | |
| 4 | 0.19 | 0.5 | 0.01 | 0.8 | |
| 5 | 0.73 | 0.0 | 0.02 | 0.8 | |
| 6 | 0.46 | 0.5 | 0.02 | 0.8 | |
| 7 | 0.66 | 0.0 | 0.01 | | |
| 8 | | | | 0.9 | |
| | 0.64 | 0.0 | 0.04 | 0.7 | |
| 9 | 0.58 | 0.0 | 0.02 | 0.7 | |
| 10 | 0.63 | 0.0 | 0.06 | 0.8 | |
| 11 | 0.41 | 0.5 | 0.02 | 0.8 | |
| 12 | 0.25 | 0.5 | 0.01 | 0.9 | |
| 13 | 0.45 | 0.5 | 0.01 | 0.9 | |
| 14 | 0.54 | 0.5 | 0.10 | 0.4 | |
| 15 | 0.53 | 0.5 | 0.04 | 0.7 | |
| 16 | 0.60 | 0.0 | 0.22 | 0.6 | 4 0.22 |
| 17 | 0.27 | 0.5 | 0.01 | 0.8 | 0.86 |
| 18 | 0.55 | 0.5 | 0.01 | 0.8 | 9 0.46 |
| 19 | 0.42 | 0.5 | 0.01 | 0.7 | 5 0.83 |
| 20 | 0.48 | 0.5 | 0.15 | 0.8 | 3 0.49 |
| 21 | 0.49 | 0.5 | 1.00 | 0.6 | 0.54 |
| 22 | 0.71 | 0.0 | 0.03 | 0.6 | 0.38 |
| 23 | 0.56 | 0.0 | 0.09 | 0.8 | 0.61 |
| 24 | 0.63 | 0.0 | 0.01 | 0.8 | 7 0.42 |
| 25 | 0.61 | 0.0 | 0.02 | 0.7 | 0 0.47 |
| 26 | 0.79 | 0.0 | 0.05 | 0.8 | 3 0.33 |
| 27 | 0.40 | 0.5 | 0.02 | 0.8 | |
| 28 | 0.53 | 0.5 | 0.06 | 0.5 | |
| 29 | 0.38 | 0.5 | 0.02 | 0.5 | |
| | | | | | |
| | PctVacantBoarded | PctVacMore6M | os MedYr | HousBuilt | PctHousNoPhone \ |
| 0 | 0.05 | 0. | | 0.65 | 0.14 |
| 1 | 0.02 | 0. | | 0.65 | 0.16 |
| 2 | 0.29 | 0. | | 0.52 | 0.47 |
| 3 | 0.60 | 0. | | 0.52 | 0.11 |
| 4 | 0.04 | 0. | | 0.73 | 0.05 |
| 5 | 0.16 | 0. | | 0.25 | 0.02 |
| 6 | 0.09 | 0. | | 0.38 | 0.05 |
| 7 | 0.22 | 0. | | 0.60 | 0.28 |
| 8 | 0.05 | 0. | | 0.50 | 0.57 |
| 9 | 0.03 | 0. | | 0.04 | 0.01 |
| 10 | 0.10 | 0. | | 0.04 | 0.01 |
| | | | | | |
| 11 | 0.07 | 0. | | 0.06 | 0.02 |
| 12 | 0.00 | 0. | | 0.29 | 0.01 |
| 13 | 0.05 | 0. | | 0.85 | 0.08 |
| 14 | 0.00 | 0. | | 0.79 | 0.07 |
| 15 | 0.41 | 0. | | 0.25 | 0.24 |
| 16 | 0.79 | 0. | | 0.00 | 0.40 |
| 17 | 0.25 | 0. | 54 | 0.33 | 0.03 |

| 27 | 18 19 20 21 22 23 24 25 26 | 0.27 0.31 0.09 0.52 0.33 0.45 0.15 0.10 | | 0.43 0.50 0.84 0.44 0.16 0.73 0.44 0.63 0.40 0.23 0.43 0.19 0.29 0.54 0.34 0.65 0.12 0.42 | | .44 .73 .63 .23 .19 .54 .65 | 0.12 0.05 0.14 0.37 0.54 0.34 0.52 0.19 0.15 | | |
|---|--|--|---------|---|---------------|---|--|---|--|
| PctW0FullPlumb | | | | | | | | | |
| 0 0.06 0.22 0.19 0.18 0.36 1 0.00 0.21 0.22 0.19 0.18 0.36 1 0.00 0.21 0.20 0.21 0.42 2 0.45 0.18 0.17 0.16 0.27 3 0.11 0.24 0.21 0.19 0.75 4 0.14 0.31 0.31 0.30 0.40 5 0.05 0.94 1.00 1.00 0.67 6 0.05 0.37 0.38 0.39 0.26 7 0.23 0.15 0.13 0.13 0.13 0.21 8 0.22 0.07 0.07 0.07 0.08 0.14 0.9 0.73 1 0.00 0.63 0.71 0.79 0.44 1.0 0.28 0.75 0.74 0.76 0.79 0.45 11 0.09 0.74 0.76 0.79 0.45 12 0.15 0.71 0.69 0.68 0.60 13 0.07 0.19 0.18 0.18 0.35 14 0.07 0.88 0.93 0.97 0.96 15 0.44 0.04 0.04 0.05 0.10 16 0.26 0.23 0.23 0.23 0.23 0.23 0.23 17 0.38 0.39 0.25 0.38 0.39 0.25 0.28 0.31 0.31 0.31 0.40 0.27 19 0.18 0.19 0.50 0.80 18 0.05 0.14 0.14 0.14 0.14 0.27 19 0.18 0.05 0.10 0.28 0.50 0.49 0.50 0.80 0.80 0.25 0.02 0.28 0.31 0.31 0.31 0.31 0.40 0.25 0.10 0.26 0.28 0.31 0.31 0.31 0.31 0.40 0.25 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.25 0.19 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.25 0.19 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.25 0.19 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.25 0.19 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.25 0.10 0.18 0.25 0.19 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.25 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.25 0.19 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.12 0.10 0.18 0.25 0.19 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.12 0.10 0.18 0.25 0.19 0.25 0.29 0.06 0.06 0.06 0.08 0.14 0.12 0.10 0.18 0.25 0.18 0.22 0.20 0.21 0.32 0.25 0.50 0.60 0.27 0.32 0.07 0.06 0.06 0.07 0.13 0.25 0.26 0.34 0.54 0.52 0.50 0.60 0.27 0.32 0.07 0.06 0.06 0.07 0.13 0.25 0.29 0.023 0.43 0.42 0.39 0.43 0.42 0.39 0.43 | | | | | | | | | |
| 1 0.00 0.21 0.20 0.21 0.42 2 0.45 0.18 0.17 0.16 0.27 3 0.11 0.24 0.21 0.19 0.75 4 0.14 0.31 0.31 0.30 0.40 5 0.05 0.94 1.00 1.00 0.67 6 0.05 0.37 0.38 0.39 0.26 7 0.23 0.15 0.13 0.13 0.13 0.21 8 0.22 0.07 0.07 0.07 0.08 0.14 9 0.00 0.63 0.71 0.79 0.44 10 0.28 0.75 0.74 0.76 0.79 0.45 11 0.09 0.74 0.76 0.79 0.45 12 0.15 0.71 0.69 0.68 0.60 13 0.07 0.19 0.18 0.18 0.18 0.35 14 0.07 0.88 0.93 0.97 0.96 15 0.44 0.04 0.04 0.05 0.10 16 0.26 0.23 0.23 0.23 0.31 17 0.08 0.50 0.49 0.50 0.80 18 0.05 0.14 0.14 0.14 0.27 19 0.18 0.08 0.09 0.10 0.06 10 0.28 0.31 0.31 0.31 0.40 21 0.23 0.11 0.11 0.13 0.25 22 0.29 0.06 0.06 0.06 0.08 0.14 23 0.25 0.05 0.04 0.04 0.05 0.10 26 0.28 0.31 0.31 0.31 0.31 0.40 21 0.23 0.11 0.11 0.13 0.25 22 0.29 0.06 0.06 0.06 0.08 0.14 24 1.00 0.14 0.14 0.12 0.10 0.08 25 0.18 0.22 0.20 0.21 0.32 26 0.34 0.54 0.52 0.50 0.60 27 0.32 0.07 0.07 0.06 0.07 0.13 28 0.22 0.07 0.07 0.07 0.09 0.10 29 0.23 0.43 0.42 0.39 0.48 | 0 | | OwnOccL | | | | | \ | |
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| 5 0.05 0.94 1.00 1.00 0.67 6 0.05 0.37 0.38 0.39 0.26 7 0.23 0.15 0.13 0.13 0.21 8 0.22 0.07 0.07 0.08 0.14 9 0.00 0.63 0.71 0.79 0.44 10 0.28 0.75 0.74 0.70 0.73 11 0.09 0.74 0.76 0.79 0.45 12 0.15 0.71 0.69 0.68 0.60 13 0.07 0.19 0.18 0.18 0.35 14 0.07 0.88 0.93 0.97 0.96 15 0.44 0.04 0.04 0.05 0.10 16 0.26 0.23 0.23 0.23 0.23 0.23 17 0.08 0.50 0.49 0.50 0.80 18 0.05 0.14 0.14 | | | | | | | | | |
| 6 | 4 | 0.14 | | 0.31 | 0.31 | 0.30 | 0.40 | | |
| 7 | 5 | 0.05 | | 0.94 | 1.00 | 1.00 | 0.67 | | |
| 8 | | 0.05 | | 0.37 | 0.38 | 0.39 | 0.26 | | |
| 9 | | | | | | | | | |
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| 19 | | | | | | | | | |
| 20 0.28 0.31 0.31 0.31 0.40 21 0.23 0.11 0.11 0.13 0.25 22 0.29 0.06 0.06 0.08 0.14 23 0.25 0.05 0.04 0.05 0.14 24 1.00 0.14 0.12 0.10 0.18 25 0.18 0.22 0.20 0.21 0.32 26 0.34 0.54 0.52 0.50 0.60 27 0.32 0.07 0.06 0.07 0.13 28 0.22 0.07 0.07 0.09 0.10 29 0.23 0.43 0.42 0.39 0.43 RentMedian RentHighQ MedRent MedRentPctHousInc MedOwnCostPctInc \ MedOwnCostPctInc \ MedOwnCostPctInc \ O.46 0 0.35 0.38 0.34 0.38 0.46 | | | | | | | | | |
| 21 0.23 0.11 0.11 0.13 0.25 22 0.29 0.06 0.06 0.08 0.14 23 0.25 0.05 0.04 0.05 0.14 24 1.00 0.14 0.12 0.10 0.18 25 0.18 0.22 0.20 0.21 0.32 26 0.34 0.54 0.52 0.50 0.60 27 0.32 0.07 0.06 0.07 0.13 28 0.22 0.07 0.07 0.09 0.10 29 0.23 0.43 0.42 0.39 0.43 RentMedian RentHighQ MedRent MedRentPctHousInc MedOwnCostPctInc \ 0.38 0.46 | | | | | | | | | |
| 22 0.29 0.06 0.06 0.08 0.14 23 0.25 0.05 0.04 0.05 0.14 24 1.00 0.14 0.12 0.10 0.18 25 0.18 0.22 0.20 0.21 0.32 26 0.34 0.54 0.52 0.50 0.60 27 0.32 0.07 0.06 0.07 0.13 28 0.22 0.07 0.07 0.09 0.10 29 0.23 0.43 0.42 0.39 0.43 RentMedian RentHighQ MedRent MedRentPctHousInc MedOwnCostPctInc \ \tag{MedOwnCostPctInc \ \tag{O.46} | | | | | | | | | |
| 24 1.00 0.14 0.12 0.10 0.18 25 0.18 0.22 0.20 0.21 0.32 26 0.34 0.54 0.52 0.50 0.60 27 0.32 0.07 0.06 0.07 0.13 28 0.22 0.07 0.07 0.09 0.10 29 0.23 0.43 0.42 0.39 0.43 RentMedian RentHighQ MedRent PctHousInc MedOwnCostPctInc \ 0 0.35 0.38 0.34 0.38 0.46 | | | | | | | | | |
| 25 | 23 | 0.25 | | 0.05 | 0.04 | 0.05 | 0.14 | | |
| 26 0.34 0.54 0.52 0.50 0.60 27 0.32 0.07 0.06 0.07 0.13 28 0.22 0.07 0.07 0.09 0.10 29 0.23 0.43 0.42 0.39 0.43 RentMedian RentHighQ MedRent MedRentPctHousInc MedOwnCostPctInc \ 0.38 0.46 | 24 | 1.00 | | 0.14 | 0.12 | 0.10 | 0.18 | | |
| 27 0.32 0.07 0.06 0.07 0.13 28 0.22 0.07 0.07 0.09 0.10 29 0.23 0.43 0.42 0.39 0.43 RentMedian RentHighQ MedRent MedRentPctHousInc MedOwnCostPctInc \ 0.38 0.46 0 0.35 0.38 0.34 0.38 0.46 | 25 | 0.18 | | 0.22 | 0.20 | 0.21 | 0.32 | | |
| 28 | | 0.34 | | 0.54 | 0.52 | 0.50 | 0.60 | | |
| 29 0.23 0.43 0.42 0.39 0.43 RentMedian RentHighQ MedRent MedRentPctHousInc MedOwnCostPctInc \ 0 0.35 0.38 0.34 0.38 0.38 0.46 | | | | | | | | | |
| RentMedian RentHighQ MedRent MedRentPctHousInc MedOwnCostPctInc \ 0 0.35 0.38 0.34 0.38 0.46 | | | | | | | | | |
| 0 0.35 0.38 0.34 0.38 0.46 | 29 | 0.23 | | 0.43 | 0.42 | 0.39 | 0.43 | | |
| 0 0.35 0.38 0.34 0.38 0.46 | | RentMedian Ren | tHighQ | MedRent | MedRentPctHou | sInc MedOwnCo | stPctInc \ | \ | |
| | 0 | | _ | | | | | • | |
| | | | | | | | | | |

| 2 | 0.29 | 0.27 | 0.31 | 0.4 | .8 0.39 |
|----------|--------------------|--------------|--------------|--------------|------------------|
| 3 | 0.70 | 0.77 | 0.89 | 0.6 | 0.51 |
| 4 | 0.36 | 0.38 | 0.38 | 0.2 | 0.51 |
| 5 | 0.63 | 0.68 | 0.62 | 0.4 | |
| 6 | 0.35 | 0.42 | 0.35 | 0.4 | |
| | | | | | |
| 7 | 0.24 | 0.25 | 0.24 | 0.6 | |
| 8 | 0.17 | 0.16 | 0.15 | 0.3 | |
| 9 | 0.42 | 0.47 | 0.41 | 0.2 | |
| 10 | 0.67 | 0.82 | 0.67 | 0.5 | 0.67 |
| 11 | 0.54 | 0.65 | 0.49 | 0.3 | 0.51 |
| 12 | 0.82 | 1.00 | 0.87 | 0.4 | .0 0.39 |
| 13 | 0.32 | 0.32 | 0.29 | 0.1 | .6 0.35 |
| 14 | 0.91 | 1.00 | 0.87 | 0.5 | |
| 15 | 0.13 | 0.14 | 0.13 | 0.4 | |
| 16 | 0.32 | 0.36 | 0.33 | 0.5 | |
| 17 | 0.76 | 0.96 | 0.80 | 0.6 | |
| | | | | | |
| 18 | 0.29 | 0.30 | 0.30 | 0.4 | |
| 19 | 0.12 | 0.15 | 0.20 | 0.1 | |
| 20 | 0.40 | 0.45 | 0.40 | 0.6 | |
| 21 | 0.28 | 0.32 | 0.30 | 0.4 | |
| 22 | 0.17 | 0.18 | 0.16 | 0.5 | 0.38 |
| 23 | 0.17 | 0.18 | 0.17 | 0.4 | .4 0.20 |
| 24 | 0.22 | 0.23 | 0.22 | 0.5 | 0.55 |
| 25 | 0.31 | 0.33 | 0.28 | 0.5 | 0.59 |
| 26 | 0.57 | 0.63 | 0.56 | 0.6 | |
| 27 | 0.14 | 0.13 | 0.17 | 0.4 | |
| 28 | 0.14 | 0.16 | 0.15 | 0.6 | |
| 29 | 0.49 | 0.60 | 0.54 | 0.2 | |
| 23 | 0.43 | 0.00 | 0.04 | 0.2 | .0 |
| | M = 40 C = =+D =+T | N - M+ | NTCh1+ | N | DatEanai mpDamm |
| ^ | MedOwnCostPctI | • | | | PctForeignBorn \ |
| 0 | | 0.25 | 0.04 | 0.00 | 0.12 |
| 1 | | 0.18 | 0.00 | 0.00 | 0.21 |
| 2 | | 0.28 | 0.00 | 0.00 | 0.14 |
| 3 | | 0.47 | 0.00 | 0.00 | 0.19 |
| 4 | | 0.21 | 0.00 | 0.00 | 0.11 |
| 5 | | 0.11 | 0.00 | 0.00 | 0.70 |
| 6 | | 0.31 | 0.00 | 0.00 | 0.15 |
| 7 | | 0.28 | 0.00 | 0.00 | 0.59 |
| 8 | | 0.36 | 0.01 | 0.00 | 0.01 |
| 9 | | 0.28 | 0.00 | 0.00 | 0.22 |
| 10 | | 0.19 | 0.07 | 0.14 | 1.00 |
| 11 | | 0.68 | 0.01 | 0.00 | 0.20 |
| | | | | | |
| 12 | | 0.46 | 0.00 | 0.00 | 0.22 |
| | | 0.00 | A A4 | | |
| 13 | | 0.26 | 0.01 | 0.00 | 0.03 |
| 14 | | 0.21 | 0.00 | 0.11 | 0.40 |
| 14 15 | | 0.21 0.35 | 0.00 0.01 | 0.11 0.00 | 0.40 0.03 |
| 14 | | 0.21 | 0.00 | 0.11 | 0.40 |

| 18 | | 0.28 | 0.00 | 0.08 | |
|----|------------------|------------------|------------------|----------------------|---|
| 19 | | 0.28 | 0.00 | 0.02 | |
| 20 | | 0.21 | 0.12 0.09 | 0.38 | |
| 21 | | 0.32 | 0.39 | 0.10 | |
| 22 | | 0.42 | 0.00 | 0.12 | |
| 23 | | 0.43 | 0.05 | 0.09 | |
| 24 | | 0.21 | 0.00 | 1.00 | |
| 25 | | 0.39 | 0.00 | 0.15 | |
| 26 | | 0.11 | 0.00 | 0.87 | |
| 27 | | 0.26 | 0.00 | 0.04 | |
| 28 | | 0.26 | 0.00 | 0.05 | |
| 29 | | 0.35 | 0.00 | 0.07 | |
| | PctBornSameState | PctSameHouse85 | PctSameCity85 | PctSameState85 \ | |
| 0 | 0.42 | 0.50 | 0.51 | 0.64 | |
| 1 | 0.50 | 0.34 | 0.60 | 0.52 | |
| 2 | 0.49 | 0.54 | 0.67 | 0.56 | |
| 3 | 0.30 | 0.73 | 0.64 | 0.65 | |
| 4 | 0.72 | 0.64 | 0.61 | 0.53 | |
| 5 | 0.42 | 0.49 | 0.73 | 0.64 | |
| 6 | 0.81 | 0.77 | 0.91 | 0.84 | |
| 7 | 0.58 | 0.52 | 0.79 | 0.78 | |
| 8 | 0.78 | 0.48 | 0.79 | 0.75 | |
| 9 | 0.42 | 0.34 | 0.23 | 0.09 | |
| 10 | 0.35 | 0.53 | 0.39 | 0.62 | |
| 11 | 0.88 | 0.91 | 0.90 | 0.93 | |
| 12 | 0.66 | 0.82 | 0.66 | 0.73 | |
| 13 | 0.86 | 0.43 | 0.47 | 0.69 | |
| 14 | 0.42 | 0.31 | 0.51 | 0.53 | |
| 15 | 0.85 | 0.60 | 0.74 | 0.78 | |
| 16 | 0.80 | 0.41 | 0.53 | 0.80 | |
| 17 | 0.64 | 0.80 | 0.74 | 0.73 | |
| 18 | 0.58 | 0.40 | 0.49 | 0.45 | |
| 19 | 0.98 | 0.91 | 0.78 | 0.93 | |
| 20 | 0.58 | 0.31 | 0.48 | 0.73 | |
| 21 | 0.44 | 0.45 | 0.60 | 0.48 | |
| 22 | 0.41 | 0.37 | 0.51 | 0.45 | |
| 23 | 0.72 | 0.58 | 0.72 | 0.64 | |
| 24 | 0.43 | 0.54 | 0.70 | 0.74 | |
| 25 | 0.34 | 0.31 | 0.36 | 0.44 | |
| 26 | 0.39 | 0.57 | 0.82 | 0.72 | |
| 27 | 0.82 | 0.63 | 0.82 | 0.82 | |
| 28 | 0.82 | 0.68 | 0.79 | 0.78 | |
| 29 | 0.71 | 0.68 | 0.64 | 0.78 | |
| | LemasSwornFT Len | nasSwFTPerPop Le | emasSwFTFieldOps | LemasSwFTFieldPerPop | \ |
| 0 | 0.030000 | 0.130000 | 0.960000 | - | |
| 1 | 0.069655 | 0.217461 | 0.924734 | 0.246332 | |
| | | | | | |

| 2 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
|----|---------------|-------------------|------------------|---------------|
| 3 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 4 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 5 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 6 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 7 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 8 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 9 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 10 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 11 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 12 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 13 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 14 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 15 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 16 | 0.060000 | 0.300000 | 0.930000 | 0.380000 |
| 17 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 18 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 19 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 20 | 0.030000 | 0.080000 | 0.960000 | 0.120000 |
| 21 | 0.250000 | 0.160000 | 0.750000 | 0.190000 |
| 22 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 23 | 0.010000 | 0.110000 | 0.980000 | 0.140000 |
| 24 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 25 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 26 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 27 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 28 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| 29 | 0.069655 | 0.217461 | 0.924734 | 0.246332 |
| | | | | |
| | LemasTotalReq | LemasTotReqPerPop | PolicReqPerOffic | PolicPerPop \ |
| 0 | 0.060000 | 0.180000 | 0.440000 | 0.130000 |
| 1 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 2 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 3 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 4 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 5 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 6 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 7 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 8 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 9 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 10 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 11 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 12 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 13 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 14 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 15 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| 16 | 0.050000 | 0.210000 | 0.230000 | 0.300000 |
| 17 | 0.097994 | 0.215204 | 0.343636 | 0.217492 |
| | | | | |

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18
         0.097994
                              0.215204
                                                  0.343636
                                                                0.217492
19
         0.097994
                              0.215204
                                                  0.343636
                                                                0.217492
20
         0.050000
                              0.110000
                                                  0.350000
                                                                0.080000
21
                              0.190000
         0.350000
                                                  0.380000
                                                                0.160000
22
         0.097994
                              0.215204
                                                  0.343636
                                                                0.217492
23
         0.030000
                              0.140000
                                                  0.370000
                                                                0.110000
24
         0.097994
                              0.215204
                                                  0.343636
                                                                0.217492
25
         0.097994
                              0.215204
                                                  0.343636
                                                                0.217492
26
                              0.215204
                                                                0.217492
         0.097994
                                                  0.343636
27
         0.097994
                              0.215204
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                                                                0.217492
28
         0.097994
                              0.215204
                                                  0.343636
                                                                0.217492
29
         0.097994
                                                  0.343636
                              0.215204
                                                                0.217492
    RacialMatchCommPol
                          PctPolicWhite
                                          PctPolicBlack
                                                           PctPolicHisp
0
               0.940000
                               0.930000
                                                 0.03000
                                                               0.070000
1
               0.689404
                                                 0.22047
                                                               0.134859
                               0.726959
2
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
3
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
4
               0.689404
                               0.726959
                                                 0.22047
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5
               0.689404
                               0.726959
                                                 0.22047
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6
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                                                 0.22047
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7
               0.689404
                               0.726959
                                                 0.22047
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8
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
9
               0.689404
                               0.726959
                                                 0.22047
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10
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
11
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
12
                               0.726959
                                                 0.22047
               0.689404
                                                               0.134859
13
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
14
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
15
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
16
               0.610000
                               0.890000
                                                 0.15000
                                                               0.010000
17
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
18
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
19
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
20
               0.800000
                               0.820000
                                                 0.04000
                                                               0.190000
21
               0.820000
                               0.700000
                                                 0.45000
                                                               0.030000
22
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
23
               0.840000
                               0.960000
                                                 0.00000
                                                               0.000000
24
               0.689404
                               0.726959
                                                 0.22047
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25
               0.689404
                               0.726959
                                                 0.22047
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26
               0.689404
                               0.726959
                                                 0.22047
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27
               0.689404
                               0.726959
                                                 0.22047
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28
                                                 0.22047
               0.689404
                               0.726959
                                                               0.134859
29
               0.689404
                               0.726959
                                                 0.22047
                                                               0.134859
                                     OfficAssgnDrugUnits
    PctPolicAsian
                    PctPolicMinor
                                                            NumKindsDrugsSeiz
0
         0.100000
                          0.070000
                                                 0.020000
                                                                       0.57000
1
         0.114859
                          0.259185
                                                 0.075549
                                                                       0.55605
```

| 2 | 0.114859 | 0.25918 | | 0.075549 | | 55605 |
|----|------------------|----------|---------|----------------|-----------|-------|
| 3 | 0.114859 | 0.25918 | | 0.075549 | | 55605 |
| 4 | 0.114859 | 0.25918 | | 0.075549 | | 55605 |
| 5 | 0.114859 | 0.25918 | | 0.075549 | | 55605 |
| 6 | 0.114859 | 0.25918 | 55 | 0.075549 | 0. | 55605 |
| 7 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 8 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 9 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 10 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 11 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 12 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 13 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 14 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 15 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 16 | 0.060000 | 0.12000 | 0 | 0.100000 | 0. | 64000 |
| 17 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 18 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 19 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 20 | 0.190000 | 0.18000 | 0 | 0.050000 | 0. | 57000 |
| 21 | 0.050000 | 0.33000 | 0 | 0.130000 | 0. | 57000 |
| 22 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 23 | 0.000000 | 0.00000 | 0 | 0.020000 | 0. | 86000 |
| 24 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 25 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 26 | 0.114859 | 0.25918 | | 0.075549 | 0. | 55605 |
| 27 | 0.114859 | 0.25918 | 5 | 0.075549 | 0. | 55605 |
| 28 | 0.114859 | 0.25918 | | 0.075549 | | 55605 |
| 29 | 0.114859 | 0.25918 | | 0.075549 | | 55605 |
| | | | | | | |
| | PolicAveOTWorked | LandArea | PopDens | PctUsePubTrans | PolicCars | \ |
| 0 | 0.290000 | 0.12 | 0.26 | 0.20 | 0.060000 | |
| 1 | 0.305987 | 0.02 | 0.12 | 0.45 | 0.163103 | |
| 2 | 0.305987 | 0.01 | 0.21 | 0.02 | 0.163103 | |
| 3 | 0.305987 | 0.02 | 0.39 | 0.28 | 0.163103 | |
| 4 | 0.305987 | 0.04 | 0.09 | 0.02 | 0.163103 | |
| 5 | 0.305987 | 0.01 | 0.58 | 0.10 | 0.163103 | |
| 6 | 0.305987 | 0.05 | 0.08 | 0.06 | 0.163103 | |
| 7 | 0.305987 | 0.01 | 0.33 | 0.00 | 0.163103 | |
| 8 | 0.305987 | 0.04 | 0.17 | 0.04 | 0.163103 | |
| 9 | 0.305987 | 0.00 | 0.47 | 0.11 | 0.163103 | |
| 10 | 0.305987 | 0.02 | 1.00 | 1.00 | 0.163103 | |
| 11 | 0.305987 | 0.01 | 0.63 | 1.00 | 0.163103 | |
| 12 | 0.305987 | 0.03 | 0.18 | 0.59 | 0.163103 | |
| 13 | 0.305987 | 0.08 | 0.04 | 0.00 | 0.163103 | |
| 14 | 0.305987 | 0.02 | 0.40 | 0.15 | 0.163103 | |
| 15 | 0.305987 | 0.04 | 0.15 | 0.04 | 0.163103 | |
| 16 | 0.220000 | 0.06 | 0.39 | 0.84 | 0.060000 | |
| 17 | 0.305987 | 0.03 | 0.09 | 0.21 | 0.163103 | |
| | | | | · | | |

| 18 | 0.305987 | 0.03 | 0.20 | 0.07 | 0.163103 |
|----|---------------------|------------|--------|--------------------|----------|
| 19 | 0.305987 | 0.09 | 0.03 | 0.05 | 0.163103 |
| 20 | 0.360000 | 0.09 | 0.46 | 0.05 | 0.090000 |
| 21 | 1.000000 | 1.00 | 0.07 | 0.15 | 1.000000 |
| 22 | 0.305987 | 0.05 | 0.09 | 0.06 | 0.163103 |
| 23 | 0.290000 | 0.16 | 0.12 | 0.07 | 0.040000 |
| 24 | 0.305987 | 0.02 | 0.22 | 0.02 | 0.163103 |
| 25 | 0.305987 | 0.02 | 0.15 | 0.16 | 0.163103 |
| 26 | 0.305987 | 0.01 | 0.79 | 0.21 | 0.163103 |
| 27 | 0.305987 | 0.04 | 0.09 | 0.00 | 0.163103 |
| 28 | 0.305987 | 0.02 | 0.17 | 0.00 | 0.163103 |
| 29 | 0.305987 | 0.10 | 0.02 | 0.08 | 0.163103 |
| 20 | 0.000001 | 0.10 | 0.02 | 0.00 | 0.100100 |
| | PolicOperBudg Lemas | PctPolicOn | Patr I | LemasGangUnitDeplo | oy \ |
| 0 | 0.040000 | 0.900 | | 0.50000 | • |
| 1 | 0.076708 | 0.698 | | 0.44043 | |
| 2 | 0.076708 | 0.698 | | 0.44043 | |
| 3 | 0.076708 | 0.698 | | 0.44043 | |
| 4 | 0.076708 | 0.698 | | 0.44043 | |
| 5 | 0.076708 | 0.698 | | 0.44043 | |
| 6 | 0.076708 | 0.698 | | 0.44043 | |
| 7 | 0.076708 | 0.698 | | 0.44043 | |
| 8 | 0.076708 | 0.698 | | 0.44043 | |
| 9 | 0.076708 | 0.698 | | 0.44043 | |
| 10 | 0.076708 | 0.698 | | 0.44043 | |
| | | | | | |
| 11 | 0.076708 | 0.698 | | 0.44043 | |
| 12 | 0.076708 | 0.698 | | 0.44043 | |
| 13 | 0.076708 | 0.698 | | 0.44043 | |
| 14 | 0.076708 | 0.698 | | 0.44043 | |
| 15 | 0.076708 | 0.698 | | 0.44043 | |
| 16 | 0.060000 | 0.910 | | 0.50000 | |
| 17 | 0.076708 | 0.698 | | 0.44043 | |
| 18 | 0.076708 | 0.698 | | 0.44043 | |
| 19 | 0.076708 | 0.698 | | 0.44043 | |
| 20 | 0.050000 | 0.880 | | 0.50000 | |
| 21 | 0.350000 | 0.730 | | 0.00000 | |
| 22 | 0.076708 | 0.698 | | 0.44043 | |
| 23 | 0.010000 | 0.810 | 0000 | 1.00000 | 00 |
| 24 | 0.076708 | 0.698 | 3589 | 0.44043 | 39 |
| 25 | 0.076708 | 0.698 | 3589 | 0.44043 | 39 |
| 26 | 0.076708 | 0.698 | 3589 | 0.44043 | 39 |
| 27 | 0.076708 | 0.698 | 3589 | 0.44043 | 39 |
| 28 | 0.076708 | 0.698 | 3589 | 0.44043 | 39 |
| 29 | 0.076708 | 0.698 | 3589 | 0.44043 | 39 |
| | | | | | |
| | LemasPctOfficDrugUn | PolicBudg | PerPop | ViolentCrimesPer | Pop |
| 0 | 0.32 | 0.1 | 140000 | (| 0.20 |
| 1 | 0.00 | 0.1 | 195078 | (| 0.67 |
| | | | | | |

| 2 | 0.00 | 0.195078 | 0.43 |
|----|------|----------|------|
| 3 | 0.00 | 0.195078 | 0.12 |
| 4 | 0.00 | 0.195078 | 0.03 |
| 5 | 0.00 | 0.195078 | 0.14 |
| 6 | 0.00 | 0.195078 | 0.03 |
| 7 | 0.00 | 0.195078 | 0.55 |
| 8 | 0.00 | 0.195078 | 0.53 |
| 9 | 0.00 | 0.195078 | 0.15 |
| 10 | 0.00 | 0.195078 | 0.24 |
| 11 | 0.00 | 0.195078 | 0.08 |
| 12 | 0.00 | 0.195078 | 0.06 |
| 13 | 0.00 | 0.195078 | 0.09 |
| 14 | 0.00 | 0.195078 | 0.21 |
| 15 | 0.00 | 0.195078 | 0.30 |
| 16 | 0.88 | 0.260000 | 0.49 |
| 17 | 0.00 | 0.195078 | 0.07 |
| 18 | 0.00 | 0.195078 | 0.15 |
| 19 | 0.00 | 0.195078 | 0.03 |
| 20 | 0.76 | 0.130000 | 0.34 |
| 21 | 0.31 | 0.210000 | 0.69 |
| 22 | 0.00 | 0.195078 | 0.21 |
| 23 | 0.56 | 0.090000 | 0.63 |
| 24 | 0.00 | 0.195078 | 0.31 |
| 25 | 0.00 | 0.195078 | 0.12 |
| 26 | 0.00 | 0.195078 | 0.84 |
| 27 | 0.00 | 0.195078 | 0.10 |
| 28 | 0.00 | 0.195078 | 0.49 |
| 29 | 0.00 | 0.195078 | 0.02 |
| | | | |

1.2 Perform PCA

The data used for the PCA starts from column 4 onwards.

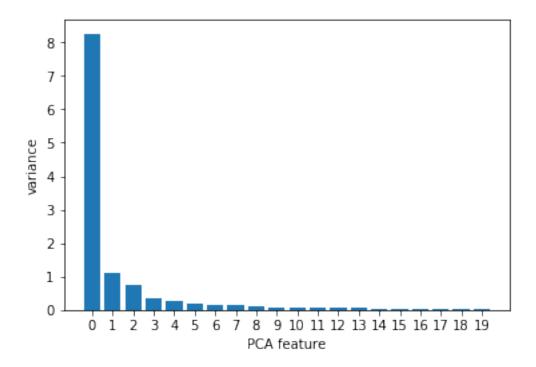
This decision was made because the county state or community cannot use mean to fill NaN values. Alternatively the mode could be used to replace the NaN values or the sample could have been dropped

```
In [4]: # Create a PCA instance: pca
    pca = PCA()

# Fit the data
    pca.fit(data_filled.iloc[:,4:])

# Plot the explained variances
    n = 20
    features = range(pca.n_components_)
    plt.bar(features[:n], pca.explained_variance_[:n])
    plt.xlabel('PCA feature')
```

```
plt.ylabel('variance')
plt.xticks(features[:n])
plt.show()
eigen_values = pd.Series(pca.explained_variance_)[:n]
display(eigen_values)
```



```
0
      8.261395
      1.089839
1
2
      0.760844
3
      0.333962
4
      0.287441
5
      0.186957
6
      0.161923
7
      0.133371
8
      0.111869
9
      0.088794
10
      0.076732
      0.057319
11
12
      0.055713
13
      0.053844
14
      0.048041
15
      0.045104
      0.039366
16
17
      0.033291
18
      0.029954
```

```
19
     0.028349
dtype: float64
In [5]: # Determine how many features must be kept to retain 95% of the variance
       total_variance = np.sum(eigen_values)
       num_pca_features = []
       for num_components in range(20):
           ratio = np.sum(eigen_values[:num_components]) / total_variance
           num_pca_features.append(ratio)
           print('number of PCs: ', num_components, ' Variance Ratio: ', ratio)
number of PCs: 0 Variance Ratio: 0.0
number of PCs: 1 Variance Ratio: 0.6951633856327811
number of PCs:
               2 Variance Ratio: 0.7868689827183053
number of PCs: 3 Variance Ratio: 0.8508909735025484
number of PCs: 4 Variance Ratio: 0.8789925212379436
number of PCs: 5 Variance Ratio: 0.9031794951857989
number of PCs: 6 Variance Ratio: 0.9189111428813157
number of PCs: 7 Variance Ratio: 0.932536311317395
number of PCs: 8 Variance Ratio: 0.9437589290582613
number of PCs: 9 Variance Ratio: 0.9531722386249255
number of PCs: 10 Variance Ratio: 0.9606438938352004
number of PCs: 11 Variance Ratio: 0.9671005844367883
number of PCs: 12 Variance Ratio: 0.9719237310352683
number of PCs: 13 Variance Ratio: 0.9766117595932257
number of PCs: 14 Variance Ratio: 0.9811425240972542
number of PCs: 15 Variance Ratio: 0.9851849662681417
number of PCs: 16 Variance Ratio: 0.9889802763341629
number of PCs: 17 Variance Ratio: 0.9922927319284601
number of PCs:
               18 Variance Ratio: 0.9950940675282125
number of PCs: 19 Variance Ratio: 0.9976145618995417
```

We can see the top 20 pca features in the above table and scree plot figure.

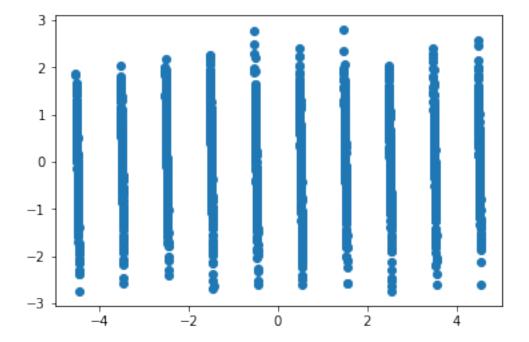
To me there is not a clear point where the dimensions could be cut off, however there are a couple techniques we could use to make the decision. - Looking at the scree plot, the variance begins to drop more drastically starting at PCA feature 3. Therefore we could arbitrarily choose PCA 0, 1, and 2 to represent the data - The second way would be to sum the value of the eigen_values, and choose enough features to retain some ratio of the total variance. We can see that if we keep the top 9 highest variance features we will retain over 95% of the variance

1.3 Dimsionality Reduction

This is what the sample would look like if the first two components are used and plotted on a 2d scatter plot

```
In [6]: # dimensionality reduction
    pca = PCA(n_components=2)
```

```
# Fit the data
pca.fit(data_filled.iloc[:,4:])
transformed = pca.transform(data_filled.iloc[:,4:])
xs = transformed[:,0]
ys = transformed[:,1]
plt.scatter(xs, ys)
plt.show()
```



1.4 Manual Calculation of PCA and eigenvalues

For completeness the eigenvalues and eigenvectors were computed using only numpy We can see that the values closely resemble sklearn's returned results. Sklearn uses SVD in the background to compute the PCA

```
eigenVectors = pd.DataFrame(eigenVectors[:,idx])
display(eigenValues[:20])
```

0 8.257252 1 1.089292 2 0.760463 3 0.333794 4 0.287296 5 0.186863 6 0.161842 7 0.133304 8 0.111813 9 0.088749 10 0.076694 11 0.057290 12 0.055685 13 0.053817 14 0.048017 15 0.045081 16 0.039346 17 0.033275 18 0.029939 19 0.028335 dtype: float64