## Corrleation Matrix

| var | poor\_fair\_health | adult\_smoking | adult\_obesity | poor\_physical\_health\_days | poor\_mental\_health\_days | excessive\_drinking | pct\_below\_18 | pct\_above\_65 | pct\_nonhispanic\_black | pct\_native\_american | pct\_hispanic | pct\_females | pct\_nonproficient\_english | diabetes\_prevalence | physical\_inactivity | pct\_pacific\_islander | pct\_asian | pct\_nonhispanic\_white | severe\_housing\_issues | food\_insecurity | social\_associations | insufficient\_sleep | frequent\_physical\_distress | frequent\_mental\_distress | homeownership | traffic\_volume | total\_deaths | covid\_deaths | pct\_covid\_deaths | never | rarely | sometimes | frequently | always | pct\_less\_than\_high\_school | pct\_high\_school\_diploma | pct\_college\_associates | pct\_bachelors\_or\_higher | population | unemployment\_rate | median\_household\_income | log\_poverty\_rating | pct\_voters | log\_population | log\_traffic\_volume | log\_covid\_deaths | log\_total\_deaths |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| poor\_fair\_health |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| adult\_smoking | 0.61 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| adult\_obesity | 0.49 | 0.63 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| poor\_physical\_health\_days | 0.87 | 0.77 | 0.55 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| poor\_mental\_health\_days | 0.70 | 0.77 | 0.52 | 0.89 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| excessive\_drinking | -0.59 | -0.39 | -0.32 | -0.60 | -0.54 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_below\_18 | 0.30 | -0.05 | 0.24 | 0.09 | -0.10 | -0.16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_above\_65 | -0.07 | 0.14 | 0.01 | 0.11 | 0.24 | -0.19 | -0.64 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_nonhispanic\_black | 0.44 | 0.32 | 0.22 | 0.36 | 0.29 | -0.27 | 0.08 | -0.18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_native\_american | 0.04 | -0.03 | -0.05 | 0.06 | -0.03 | 0.02 | 0.16 | -0.07 | -0.12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_hispanic | 0.38 | -0.34 | -0.19 | 0.04 | -0.14 | -0.05 | 0.45 | -0.30 | -0.10 | 0.18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_females | 0.10 | 0.08 | -0.06 | 0.14 | 0.21 | -0.19 | -0.02 | 0.13 | 0.34 | -0.09 | -0.12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_nonproficient\_english | 0.32 | -0.35 | -0.26 | 0.00 | -0.16 | -0.03 | 0.36 | -0.32 | 0.02 | 0.09 | 0.85 | -0.04 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| diabetes\_prevalence | 0.56 | 0.62 | 0.64 | 0.64 | 0.62 | -0.53 | 0.00 | 0.28 | 0.25 | -0.08 | -0.19 | 0.10 | -0.21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| physical\_inactivity | 0.64 | 0.67 | 0.69 | 0.64 | 0.60 | -0.47 | 0.11 | 0.15 | 0.32 | -0.13 | -0.12 | 0.06 | -0.13 | 0.72 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_pacific\_islander | -0.07 | -0.14 | -0.13 | -0.07 | -0.09 | 0.01 | 0.04 | -0.01 | -0.07 | 0.02 | 0.07 | -0.04 | 0.08 | -0.07 | -0.12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_asian | -0.26 | -0.48 | -0.49 | -0.37 | -0.39 | 0.19 | -0.07 | -0.24 | 0.01 | -0.03 | 0.18 | 0.04 | 0.39 | -0.34 | -0.38 | 0.38 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_nonhispanic\_white | -0.48 | 0.20 | 0.15 | -0.15 | 0.04 | 0.14 | -0.40 | 0.40 | -0.48 | -0.17 | -0.77 | -0.10 | -0.77 | 0.10 | 0.03 | -0.19 | -0.41 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| severe\_housing\_issues | 0.24 | -0.29 | -0.37 | 0.05 | -0.04 | -0.01 | 0.06 | -0.21 | 0.23 | 0.10 | 0.58 | 0.12 | 0.72 | -0.25 | -0.18 | 0.22 | 0.48 | -0.72 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| food\_insecurity | 0.59 | 0.55 | 0.40 | 0.64 | 0.56 | -0.40 | 0.01 | -0.02 | 0.67 | 0.05 | -0.12 | 0.13 | -0.13 | 0.44 | 0.48 | -0.04 | -0.20 | -0.25 | 0.13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| social\_associations | 0.01 | 0.39 | 0.35 | 0.14 | 0.20 | -0.04 | -0.23 | 0.23 | 0.06 | -0.13 | -0.49 | 0.06 | -0.49 | 0.28 | 0.28 | -0.16 | -0.33 | 0.45 | -0.48 | 0.20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| insufficient\_sleep | 0.48 | 0.53 | 0.41 | 0.52 | 0.55 | -0.33 | -0.01 | -0.02 | 0.43 | -0.17 | -0.09 | 0.16 | 0.01 | 0.47 | 0.55 | 0.03 | -0.02 | -0.15 | 0.10 | 0.34 | 0.04 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| frequent\_physical\_distress | 0.91 | 0.75 | 0.52 | 0.98 | 0.86 | -0.61 | 0.14 | 0.07 | 0.41 | 0.07 | 0.12 | 0.15 | 0.08 | 0.61 | 0.63 | -0.07 | -0.36 | -0.25 | 0.12 | 0.67 | 0.10 | 0.51 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| frequent\_mental\_distress | 0.79 | 0.80 | 0.52 | 0.94 | 0.96 | -0.58 | -0.03 | 0.20 | 0.37 | 0.01 | -0.06 | 0.20 | -0.08 | 0.62 | 0.62 | -0.08 | -0.40 | -0.07 | 0.04 | 0.65 | 0.17 | 0.55 | 0.94 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| homeownership | -0.28 | 0.02 | 0.18 | -0.15 | -0.04 | -0.07 | -0.06 | 0.43 | -0.38 | -0.06 | -0.32 | -0.10 | -0.46 | 0.14 | 0.09 | -0.09 | -0.39 | 0.57 | -0.65 | -0.40 | 0.11 | -0.11 | -0.21 | -0.13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| traffic\_volume | -0.07 | -0.30 | -0.40 | -0.20 | -0.21 | 0.12 | -0.07 | -0.18 | 0.17 | 0.00 | 0.23 | 0.18 | 0.45 | -0.24 | -0.21 | 0.03 | 0.57 | -0.40 | 0.55 | -0.08 | -0.26 | 0.12 | -0.17 | -0.21 | -0.52 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| total\_deaths | -0.05 | -0.25 | -0.39 | -0.16 | -0.17 | 0.10 | -0.02 | -0.17 | 0.23 | -0.04 | 0.28 | 0.22 | 0.43 | -0.23 | -0.24 | 0.03 | 0.44 | -0.45 | 0.47 | -0.01 | -0.35 | 0.14 | -0.11 | -0.14 | -0.41 | 0.57 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| covid\_deaths | 0.04 | -0.22 | -0.34 | -0.11 | -0.15 | 0.04 | 0.05 | -0.20 | 0.25 | -0.02 | 0.34 | 0.22 | 0.49 | -0.18 | -0.15 | 0.00 | 0.39 | -0.49 | 0.51 | 0.00 | -0.33 | 0.18 | -0.05 | -0.10 | -0.43 | 0.64 | 0.95 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_covid\_deaths | 0.48 | 0.16 | 0.16 | 0.26 | 0.11 | -0.26 | 0.37 | -0.24 | 0.28 | 0.09 | 0.35 | 0.08 | 0.33 | 0.19 | 0.36 | -0.17 | -0.07 | -0.40 | 0.19 | 0.25 | 0.05 | 0.22 | 0.32 | 0.19 | -0.24 | 0.18 | 0.10 | 0.28 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| never | 0.20 | 0.43 | 0.35 | 0.28 | 0.20 | -0.22 | 0.13 | 0.04 | -0.02 | 0.02 | -0.25 | -0.08 | -0.28 | 0.29 | 0.32 | -0.08 | -0.29 | 0.28 | -0.32 | 0.19 | 0.32 | 0.02 | 0.27 | 0.24 | 0.07 | -0.25 | -0.30 | -0.25 | 0.14 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| rarely | 0.10 | 0.38 | 0.31 | 0.19 | 0.09 | -0.12 | 0.11 | 0.04 | -0.06 | -0.01 | -0.30 | -0.12 | -0.34 | 0.24 | 0.26 | -0.09 | -0.33 | 0.35 | -0.40 | 0.17 | 0.34 | -0.07 | 0.18 | 0.13 | 0.15 | -0.30 | -0.34 | -0.30 | 0.10 | 0.58 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| sometimes | 0.19 | 0.45 | 0.39 | 0.29 | 0.22 | -0.18 | 0.11 | 0.06 | 0.02 | 0.05 | -0.31 | -0.05 | -0.32 | 0.32 | 0.34 | -0.12 | -0.33 | 0.31 | -0.40 | 0.22 | 0.34 | 0.07 | 0.28 | 0.26 | 0.13 | -0.29 | -0.32 | -0.29 | 0.10 | 0.52 | 0.57 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| frequently | -0.05 | 0.22 | 0.18 | 0.05 | 0.03 | -0.04 | 0.11 | -0.01 | -0.03 | 0.03 | -0.32 | -0.03 | -0.32 | 0.10 | 0.13 | -0.10 | -0.22 | 0.32 | -0.36 | 0.09 | 0.27 | -0.10 | 0.02 | 0.03 | 0.12 | -0.23 | -0.25 | -0.24 | 0.04 | 0.21 | 0.33 | 0.31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| always | -0.14 | -0.49 | -0.40 | -0.26 | -0.18 | 0.18 | -0.15 | -0.04 | 0.03 | -0.03 | 0.40 | 0.09 | 0.42 | -0.31 | -0.34 | 0.13 | 0.39 | -0.42 | 0.49 | -0.22 | -0.42 | 0.03 | -0.24 | -0.21 | -0.16 | 0.36 | 0.40 | 0.36 | -0.12 | -0.74 | -0.80 | -0.79 | -0.66 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_less\_than\_high\_school | 0.77 | 0.25 | 0.32 | 0.56 | 0.39 | -0.41 | 0.46 | -0.16 | 0.19 | 0.09 | 0.61 | -0.08 | 0.61 | 0.37 | 0.44 | -0.02 | -0.09 | -0.56 | 0.37 | 0.29 | -0.19 | 0.30 | 0.62 | 0.48 | -0.25 | 0.05 | 0.03 | 0.12 | 0.45 | 0.06 | -0.03 | 0.03 | -0.16 | 0.05 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_high\_school\_diploma | 0.35 | 0.65 | 0.67 | 0.49 | 0.54 | -0.27 | -0.09 | 0.35 | -0.02 | -0.10 | -0.29 | -0.11 | -0.35 | 0.62 | 0.67 | -0.08 | -0.49 | 0.37 | -0.41 | 0.22 | 0.41 | 0.45 | 0.44 | 0.51 | 0.33 | -0.36 | -0.37 | -0.31 | 0.10 | 0.35 | 0.29 | 0.37 | 0.12 | -0.37 | 0.22 |  |  |  |  |  |  |  |  |  |  |  |  |
| pct\_college\_associates | -0.12 | -0.01 | 0.17 | 0.00 | -0.04 | 0.00 | 0.12 | 0.10 | -0.14 | 0.20 | -0.11 | -0.14 | -0.29 | 0.02 | -0.03 | 0.08 | -0.29 | 0.20 | -0.18 | 0.10 | 0.01 | -0.25 | -0.02 | -0.03 | 0.16 | -0.31 | -0.23 | -0.26 | -0.21 | 0.18 | 0.27 | 0.19 | 0.22 | -0.29 | -0.21 | -0.07 |  |  |  |  |  |  |  |  |  |  |  |
| pct\_bachelors\_or\_higher | -0.60 | -0.59 | -0.72 | -0.64 | -0.56 | 0.41 | -0.23 | -0.21 | -0.01 | -0.07 | -0.07 | 0.18 | 0.07 | -0.64 | -0.69 | 0.03 | 0.53 | -0.06 | 0.18 | -0.36 | -0.19 | -0.36 | -0.62 | -0.59 | -0.18 | 0.37 | 0.35 | 0.28 | -0.20 | -0.36 | -0.32 | -0.36 | -0.11 | 0.37 | -0.58 | -0.79 | -0.31 |  |  |  |  |  |  |  |  |  |  |
| population | -0.09 | -0.34 | -0.42 | -0.22 | -0.26 | 0.12 | 0.04 | -0.24 | 0.16 | -0.03 | 0.33 | 0.15 | 0.49 | -0.28 | -0.29 | 0.05 | 0.53 | -0.47 | 0.50 | -0.09 | -0.40 | 0.08 | -0.18 | -0.23 | -0.40 | 0.60 | 0.96 | 0.93 | 0.09 | -0.30 | -0.35 | -0.33 | -0.26 | 0.41 | 0.06 | -0.40 | -0.25 | 0.37 |  |  |  |  |  |  |  |  |  |
| unemployment\_rate | 0.27 | 0.04 | 0.05 | 0.20 | 0.19 | -0.09 | -0.01 | 0.05 | 0.19 | 0.02 | 0.30 | 0.14 | 0.36 | 0.12 | 0.11 | 0.19 | 0.18 | -0.40 | 0.46 | 0.10 | -0.19 | 0.41 | 0.21 | 0.20 | -0.20 | 0.27 | 0.26 | 0.28 | 0.06 | -0.31 | -0.35 | -0.28 | -0.35 | 0.43 | 0.31 | 0.14 | -0.13 | -0.20 | 0.25 |  |  |  |  |  |  |  |  |
| median\_household\_income | -0.68 | -0.73 | -0.61 | -0.77 | -0.69 | 0.39 | -0.01 | -0.19 | -0.27 | -0.05 | 0.05 | -0.02 | 0.15 | -0.58 | -0.60 | 0.09 | 0.57 | -0.02 | 0.09 | -0.66 | -0.36 | -0.33 | -0.78 | -0.76 | 0.15 | 0.32 | 0.24 | 0.18 | -0.24 | -0.36 | -0.32 | -0.38 | -0.14 | 0.39 | -0.44 | -0.59 | -0.20 | 0.74 | 0.33 | -0.11 |  |  |  |  |  |  |  |
| log\_poverty\_rating | 0.03 | -0.27 | -0.37 | -0.09 | -0.11 | 0.10 | 0.05 | -0.29 | 0.29 | 0.00 | 0.37 | 0.25 | 0.51 | -0.27 | -0.30 | 0.07 | 0.49 | -0.58 | 0.61 | 0.04 | -0.46 | 0.16 | -0.04 | -0.07 | -0.53 | 0.56 | 0.84 | 0.78 | 0.06 | -0.40 | -0.45 | -0.41 | -0.29 | 0.51 | 0.09 | -0.47 | -0.23 | 0.39 | 0.80 | 0.35 | 0.21 |  |  |  |  |  |  |
| pct\_voters | -0.69 | -0.27 | -0.36 | -0.47 | -0.30 | 0.36 | -0.54 | 0.46 | -0.25 | -0.06 | -0.50 | 0.12 | -0.48 | -0.28 | -0.44 | -0.06 | -0.02 | 0.55 | -0.31 | -0.39 | 0.11 | -0.34 | -0.52 | -0.38 | 0.46 | -0.13 | -0.06 | -0.17 | -0.54 | -0.15 | -0.07 | -0.06 | 0.05 | 0.07 | -0.74 | -0.16 | 0.13 | 0.44 | -0.09 | -0.18 | 0.42 | -0.15 |  |  |  |  |  |
| log\_population | -0.25 | -0.47 | -0.52 | -0.36 | -0.34 | 0.24 | 0.02 | -0.28 | 0.13 | -0.04 | 0.30 | 0.21 | 0.45 | -0.43 | -0.47 | 0.08 | 0.56 | -0.44 | 0.49 | -0.22 | -0.51 | 0.02 | -0.32 | -0.34 | -0.35 | 0.55 | 0.82 | 0.75 | -0.06 | -0.46 | -0.47 | -0.47 | -0.27 | 0.55 | -0.12 | -0.57 | -0.23 | 0.57 | 0.81 | 0.25 | 0.50 | 0.94 | 0.07 |  |  |  |  |
| log\_traffic\_volume | -0.17 | -0.42 | -0.49 | -0.31 | -0.30 | 0.26 | -0.01 | -0.31 | 0.18 | 0.01 | 0.31 | 0.21 | 0.47 | -0.42 | -0.41 | 0.05 | 0.57 | -0.49 | 0.57 | -0.14 | -0.37 | -0.01 | -0.27 | -0.29 | -0.52 | 0.76 | 0.64 | 0.62 | 0.09 | -0.40 | -0.43 | -0.45 | -0.27 | 0.51 | -0.07 | -0.57 | -0.20 | 0.53 | 0.63 | 0.24 | 0.41 | 0.73 | -0.04 | 0.75 |  |  |  |
| log\_covid\_deaths | -0.02 | -0.24 | -0.37 | -0.14 | -0.15 | 0.07 | 0.05 | -0.21 | 0.28 | -0.03 | 0.30 | 0.31 | 0.43 | -0.23 | -0.23 | -0.03 | 0.42 | -0.49 | 0.47 | -0.01 | -0.34 | 0.16 | -0.09 | -0.13 | -0.42 | 0.54 | 0.83 | 0.82 | 0.31 | -0.33 | -0.36 | -0.35 | -0.20 | 0.40 | 0.02 | -0.42 | -0.26 | 0.41 | 0.77 | 0.25 | 0.26 | 0.90 | -0.09 | 0.89 | 0.71 |  |  |
| log\_total\_deaths | -0.17 | -0.33 | -0.45 | -0.24 | -0.20 | 0.16 | -0.06 | -0.16 | 0.21 | -0.05 | 0.22 | 0.30 | 0.37 | -0.31 | -0.37 | 0.05 | 0.49 | -0.41 | 0.46 | -0.09 | -0.39 | 0.09 | -0.20 | -0.20 | -0.38 | 0.53 | 0.84 | 0.77 | 0.02 | -0.40 | -0.42 | -0.41 | -0.23 | 0.48 | -0.11 | -0.49 | -0.20 | 0.50 | 0.78 | 0.26 | 0.35 | 0.94 | 0.07 | 0.96 | 0.73 | 0.95 |  |