# All variables coefficients:

## Observation:

#### Highly correlated skewed variables. Some of these variables show issues related with multi-collinearity. Clearly we can remove these to show if the model would improve due to that.

#### Coefficient Table

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coefficientsa** | | | | | | | | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B | | Correlations | | | Collinearity Statistics | |
| B | Std. Error | Beta | Lower Bound | Upper Bound | Zero-order | Partial | Part | Tolerance | VIF |
| 1 | (Constant) | 2.414 | 1.312 |  | 1.840 | .067 | -.173 | 5.002 |  |  |  |  |  |
| population | -3.351 | 2.334 | -2.948 | -1.436 | .153 | -7.954 | 1.252 | .315 | -.102 | -.044 | .000 | 4434.342 |
| householdsize | 1.134 | .601 | .601 | 1.887 | .061 | -.051 | 2.320 | .063 | .133 | .058 | .009 | 106.869 |
| racepctblack | -.025 | .206 | -.028 | -.122 | .903 | -.432 | .381 | .659 | -.009 | -.004 | .018 | 56.753 |
| racePctWhite | .065 | .291 | .061 | .224 | .823 | -.509 | .639 | -.699 | .016 | .007 | .013 | 77.812 |
| racePctAsian | -.068 | .140 | -.060 | -.487 | .627 | -.343 | .207 | -.075 | -.035 | -.015 | .062 | 16.127 |
| racePctHisp | .147 | .205 | .139 | .716 | .475 | -.258 | .552 | .147 | .051 | .022 | .025 | 39.577 |
| agePct12t21 | -.216 | .601 | -.096 | -.360 | .719 | -1.402 | .969 | .209 | -.026 | -.011 | .013 | 74.824 |
| agePct12t29 | -.900 | .778 | -.384 | -1.158 | .248 | -2.433 | .633 | .171 | -.082 | -.036 | .009 | 115.643 |
| agePct16t24 | .402 | .900 | .191 | .447 | .655 | -1.372 | 2.177 | .160 | .032 | .014 | .005 | 191.819 |
| agePct65up | .167 | .588 | .092 | .284 | .777 | -.993 | 1.328 | -.028 | .020 | .009 | .009 | 111.396 |
| numbUrban | 3.685 | 2.360 | 3.192 | 1.561 | .120 | -.970 | 8.339 | .316 | .111 | .048 | .000 | 4398.093 |
| pctUrban | -.178 | .168 | -.051 | -1.061 | .290 | -.510 | .153 | .044 | -.075 | -.033 | .406 | 2.463 |
| medIncome | -.404 | .869 | -.226 | -.465 | .643 | -2.118 | 1.310 | -.526 | -.033 | -.014 | .004 | 248.944 |
| pctWWage | -.557 | .554 | -.309 | -1.006 | .316 | -1.649 | .535 | -.333 | -.071 | -.031 | .010 | 98.975 |
| pctWFarmSelf | -.289 | .148 | -.113 | -1.947 | .053 | -.582 | .004 | -.260 | -.137 | -.060 | .283 | 3.533 |
| pctWInvInc | -.758 | .293 | -.410 | -2.582 | .011 | -1.336 | -.179 | -.616 | -.181 | -.080 | .038 | 26.459 |
| pctWSocSec | -.727 | .577 | -.388 | -1.260 | .209 | -1.866 | .411 | .059 | -.089 | -.039 | .010 | 99.760 |
| pctWPubAsst | .244 | .216 | .197 | 1.134 | .258 | -.181 | .670 | .581 | .081 | .035 | .032 | 31.607 |
| pctWRetire | .102 | .195 | .051 | .524 | .601 | -.282 | .486 | -.110 | .037 | .016 | .098 | 10.166 |
| medFamInc | .885 | .644 | .513 | 1.374 | .171 | -.386 | 2.156 | -.527 | .097 | .042 | .007 | 146.474 |
| perCapInc | -.912 | .694 | -.552 | -1.315 | .190 | -2.280 | .456 | -.411 | -.093 | -.041 | .005 | 185.226 |
| whitePerCap | .420 | .419 | .264 | 1.001 | .318 | -.407 | 1.246 | -.186 | .071 | .031 | .014 | 73.243 |
| blackPerCap | -.284 | .227 | -.111 | -1.249 | .213 | -.732 | .164 | -.353 | -.089 | -.039 | .121 | 8.258 |
| indianPerCap | .009 | .121 | .004 | .075 | .940 | -.229 | .248 | -.074 | .005 | .002 | .401 | 2.494 |
| AsianPerCap | -.141 | .124 | -.069 | -1.132 | .259 | -.386 | .105 | -.229 | -.080 | -.035 | .254 | 3.931 |
| OtherPerCap | .124 | .129 | .054 | .964 | .336 | -.130 | .379 | -.167 | .068 | .030 | .303 | 3.301 |
| HispPerCap | -.062 | .147 | -.030 | -.418 | .676 | -.352 | .229 | -.220 | -.030 | -.013 | .186 | 5.389 |
| NumUnderPov | -.459 | .314 | -.423 | -1.461 | .146 | -1.077 | .160 | .437 | -.104 | -.045 | .011 | 88.023 |
| PctPopUnderPov | .510 | .365 | .367 | 1.395 | .165 | -.211 | 1.230 | .616 | .099 | .043 | .014 | 72.903 |
| PctLess9thGrade | -.113 | .319 | -.081 | -.353 | .725 | -.742 | .517 | .323 | -.025 | -.011 | .018 | 55.016 |
| PctNotHSGrad | -.700 | .442 | -.466 | -1.584 | .115 | -1.572 | .171 | .435 | -.112 | -.049 | .011 | 91.111 |
| PctBSorMore | -.360 | .387 | -.231 | -.931 | .353 | -1.123 | .403 | -.296 | -.066 | -.029 | .015 | 64.808 |
| PctUnemployed | .207 | .208 | .143 | .997 | .320 | -.203 | .617 | .548 | .071 | .031 | .046 | 21.621 |
| PctEmploy | .836 | .469 | .443 | 1.783 | .076 | -.089 | 1.762 | -.410 | .126 | .055 | .015 | 64.854 |
| PctEmplManu | -.258 | .133 | -.168 | -1.932 | .055 | -.520 | .005 | -.136 | -.136 | -.060 | .126 | 7.919 |
| PctEmplProfServ | .039 | .207 | .023 | .190 | .849 | -.368 | .447 | .122 | .014 | .006 | .067 | 14.916 |
| PctOccupManu | .675 | .247 | .436 | 2.737 | .007 | .189 | 1.162 | .286 | .191 | .084 | .038 | 26.656 |
| PctOccupMgmtProf | .876 | .484 | .493 | 1.810 | .072 | -.078 | 1.831 | -.306 | .128 | .056 | .013 | 78.084 |
| MalePctDivorce | .481 | 1.186 | .277 | .405 | .686 | -1.859 | 2.820 | .522 | .029 | .012 | .002 | 489.698 |
| MalePctNevMarr | -.172 | .310 | -.106 | -.556 | .579 | -.784 | .439 | .380 | -.040 | -.017 | .026 | 38.347 |
| FemalePctDiv | .689 | 1.640 | .351 | .420 | .675 | -2.545 | 3.922 | .538 | .030 | .013 | .001 | 735.818 |
| TotalPctDiv | -1.791 | 2.669 | -.986 | -.671 | .503 | -7.054 | 3.473 | .546 | -.048 | -.021 | .000 | 2271.067 |
| PersPerFam | -.070 | .843 | -.038 | -.083 | .934 | -1.732 | 1.593 | .236 | -.006 | -.003 | .005 | 220.839 |
| PctFam2Par | -.966 | .721 | -.703 | -1.340 | .182 | -2.388 | .456 | -.741 | -.095 | -.041 | .003 | 289.980 |
| PctKids2Par | -.735 | .642 | -.546 | -1.144 | .254 | -2.001 | .532 | -.759 | -.081 | -.035 | .004 | 239.347 |
| PctYoungKids2Par | .289 | .261 | .230 | 1.105 | .270 | -.227 | .804 | -.696 | .079 | .034 | .022 | 45.398 |
| PctTeen2Par | .213 | .241 | .147 | .882 | .379 | -.263 | .689 | -.701 | .063 | .027 | .034 | 29.123 |
| PctWorkMomYoungKids | -.311 | .310 | -.150 | -1.002 | .318 | -.922 | .301 | -.037 | -.071 | -.031 | .042 | 23.706 |
| PctWorkMom | .181 | .335 | .097 | .540 | .590 | -.480 | .842 | -.158 | .038 | .017 | .030 | 33.799 |
| NumIlleg | -.020 | .234 | -.017 | -.086 | .932 | -.482 | .441 | .510 | -.006 | -.003 | .025 | 39.405 |
| PctIlleg | -.081 | .197 | -.083 | -.413 | .680 | -.470 | .307 | .729 | -.029 | -.013 | .024 | 42.065 |
| NumImmig | -.210 | .175 | -.140 | -1.200 | .232 | -.554 | .135 | .212 | -.085 | -.037 | .070 | 14.336 |
| PctImmigRecent | .471 | .351 | .270 | 1.342 | .181 | -.221 | 1.163 | .130 | .095 | .041 | .023 | 42.640 |
| PctImmigRec5 | -.636 | .589 | -.356 | -1.079 | .282 | -1.798 | .526 | .146 | -.077 | -.033 | .009 | 114.573 |
| PctImmigRec8 | -.495 | .637 | -.274 | -.778 | .437 | -1.751 | .760 | .185 | -.055 | -.024 | .008 | 130.501 |
| PctImmigRec10 | .882 | .471 | .484 | 1.873 | .063 | -.047 | 1.810 | .218 | .132 | .058 | .014 | 70.262 |
| PctRecentImmig | -.405 | .604 | -.412 | -.670 | .504 | -1.597 | .787 | .033 | -.048 | -.021 | .003 | 397.164 |
| PctRecImmig5 | -.115 | 1.147 | -.118 | -.100 | .920 | -2.377 | 2.147 | .047 | -.007 | -.003 | .001 | 1466.527 |
| PctRecImmig8 | 2.424 | 1.311 | 2.525 | 1.850 | .066 | -.160 | 5.009 | .058 | .131 | .057 | .001 | 1959.587 |
| PctRecImmig10 | -2.615 | 1.019 | -2.721 | -2.566 | .011 | -4.625 | -.605 | .070 | -.180 | -.079 | .001 | 1183.284 |
| PctSpeakEnglOnly | .224 | .305 | .210 | .736 | .463 | -.377 | .825 | -.070 | .052 | .023 | .012 | 85.427 |
| PctNotSpeakEnglWell | .245 | .266 | .239 | .922 | .358 | -.279 | .769 | .145 | .066 | .028 | .014 | 70.673 |
| PctLargHouseFam | .670 | .836 | .483 | .801 | .424 | -.979 | 2.318 | .403 | .057 | .025 | .003 | 382.098 |
| PctLargHouseOccup | -.974 | .994 | -.660 | -.980 | .329 | -2.934 | .987 | .305 | -.070 | -.030 | .002 | 477.365 |
| PersPerOccupHous | -.517 | 1.187 | -.297 | -.435 | .664 | -2.857 | 1.824 | .018 | -.031 | -.013 | .002 | 489.844 |
| PersPerOwnOccHous | .317 | .609 | .170 | .521 | .603 | -.884 | 1.519 | -.003 | .037 | .016 | .009 | 111.572 |
| PersPerRentOccHous | -.956 | .494 | -.583 | -1.935 | .054 | -1.930 | .019 | .185 | -.137 | -.060 | .010 | 95.642 |
| PctPersOwnOccup | -1.181 | 1.288 | -.705 | -.917 | .360 | -3.721 | 1.359 | -.462 | -.065 | -.028 | .002 | 622.852 |
| PctPersDenseHous | .591 | .302 | .488 | 1.955 | .052 | -.005 | 1.186 | .333 | .138 | .060 | .015 | 65.657 |
| PctHousLess3BR | .468 | .305 | .224 | 1.536 | .126 | -.133 | 1.070 | .411 | .109 | .047 | .045 | 22.357 |
| MedNumBR | -.025 | .071 | -.022 | -.352 | .725 | -.165 | .115 | -.244 | -.025 | -.011 | .246 | 4.069 |
| HousVacant | .119 | .173 | .120 | .689 | .492 | -.222 | .461 | .389 | .049 | .021 | .031 | 32.088 |
| PctHousOccup | .118 | .159 | .074 | .742 | .459 | -.196 | .431 | -.304 | .053 | .023 | .095 | 10.528 |
| PctHousOwnOcc | 1.551 | 1.363 | .871 | 1.138 | .256 | -1.137 | 4.239 | -.419 | .081 | .035 | .002 | 616.688 |
| PctVacantBoarded | .005 | .070 | .005 | .068 | .946 | -.133 | .142 | .536 | .005 | .002 | .183 | 5.470 |
| PctVacMore6Mos | .037 | .137 | .022 | .269 | .788 | -.234 | .308 | .182 | .019 | .008 | .143 | 6.975 |
| MedYrHousBuilt | .013 | .124 | .012 | .108 | .914 | -.231 | .258 | -.159 | .008 | .003 | .078 | 12.833 |
| PctHousNoPhone | .045 | .144 | .033 | .314 | .754 | -.238 | .328 | .534 | .022 | .010 | .088 | 11.355 |
| PctWOFullPlumb | -.251 | .121 | -.177 | -2.079 | .039 | -.489 | -.013 | .438 | -.147 | -.064 | .131 | 7.660 |
| OwnOccLowQuart | .310 | .824 | .253 | .376 | .708 | -1.316 | 1.935 | -.316 | .027 | .012 | .002 | 475.856 |
| OwnOccMedVal | -1.008 | 1.189 | -.856 | -.847 | .398 | -3.353 | 1.337 | -.283 | -.060 | -.026 | .001 | 1072.603 |
| OwnOccHiQuart | .355 | .537 | .315 | .662 | .509 | -.703 | 1.414 | -.236 | .047 | .020 | .004 | 238.285 |
| RentLowQ | -.931 | .376 | -.645 | -2.472 | .014 | -1.673 | -.188 | -.382 | -.173 | -.076 | .014 | 71.668 |
| RentMedian | .105 | 1.051 | .068 | .100 | .921 | -1.969 | 2.178 | -.345 | .007 | .003 | .002 | 488.716 |
| RentHighQ | -.191 | .458 | -.148 | -.419 | .676 | -1.094 | .711 | -.332 | -.030 | -.013 | .008 | 131.710 |
| MedRent | 1.718 | .781 | 1.090 | 2.200 | .029 | .178 | 3.258 | -.341 | .155 | .068 | .004 | 257.958 |
| MedRentPctHousInc | -.296 | .187 | -.144 | -1.588 | .114 | -.665 | .072 | .304 | -.112 | -.049 | .116 | 8.616 |
| MedOwnCostPctInc | -.241 | .151 | -.145 | -1.594 | .113 | -.539 | .057 | -.052 | -.113 | -.049 | .115 | 8.666 |
| MedOwnCostPctIncNoMtg | -.066 | .111 | -.046 | -.597 | .551 | -.285 | .152 | .053 | -.043 | -.018 | .160 | 6.257 |
| NumInShelters | -.018 | .106 | -.015 | -.174 | .862 | -.228 | .191 | .394 | -.012 | -.005 | .134 | 7.451 |
| NumStreet | .234 | .085 | .179 | 2.746 | .007 | .066 | .402 | .396 | .192 | .085 | .225 | 4.453 |
| PctForeignBorn | .735 | .377 | .735 | 1.948 | .053 | -.009 | 1.479 | .003 | .137 | .060 | .007 | 149.776 |
| PctBornSameState | -.307 | .227 | -.222 | -1.352 | .178 | -.754 | .141 | .055 | -.096 | -.042 | .035 | 28.474 |
| PctSameHouse85 | .069 | .288 | .036 | .241 | .810 | -.499 | .638 | -.062 | .017 | .007 | .044 | 22.974 |
| PctSameCity85 | .016 | .184 | .009 | .088 | .930 | -.346 | .379 | .154 | .006 | .003 | .083 | 12.106 |
| PctSameState85 | .254 | .192 | .174 | 1.324 | .187 | -.125 | .633 | .086 | .094 | .041 | .055 | 18.122 |
| LemasSwornFT | -1.344 | 1.103 | -.672 | -1.218 | .225 | -3.520 | .831 | .342 | -.086 | -.038 | .003 | 320.408 |
| LemasSwFTFieldOps | -.917 | .874 | -.439 | -1.049 | .295 | -2.640 | .806 | -.330 | -.075 | -.032 | .005 | 183.867 |
| LemasSwFTFieldPerPop | .608 | .575 | .341 | 1.058 | .291 | -.526 | 1.741 | .156 | .075 | .033 | .009 | 109.370 |
| LemasTotalReq | -.206 | .239 | -.121 | -.862 | .390 | -.677 | .265 | .353 | -.061 | -.027 | .049 | 20.606 |
| LemasTotReqPerPop | .333 | .225 | .198 | 1.478 | .141 | -.111 | .777 | .270 | .105 | .046 | .053 | 18.925 |
| PolicReqPerOffic | -.001 | .127 | -.001 | -.009 | .993 | -.252 | .250 | .174 | -.001 | .000 | .115 | 8.677 |
| PolicPerPop | -.473 | .539 | -.274 | -.877 | .382 | -1.536 | .591 | .149 | -.062 | -.027 | .010 | 102.459 |
| RacialMatchCommPol | -.140 | .116 | -.115 | -1.205 | .230 | -.368 | .089 | -.458 | -.086 | -.037 | .105 | 9.509 |
| PctPolicWhite | -.012 | .126 | -.009 | -.093 | .926 | -.261 | .237 | -.444 | -.007 | -.003 | .093 | 10.756 |
| PctPolicBlack | .088 | .260 | .075 | .337 | .736 | -.425 | .600 | .544 | .024 | .010 | .019 | 51.872 |
| PctPolicHisp | .218 | .283 | .155 | .769 | .443 | -.341 | .777 | .123 | .055 | .024 | .023 | 42.571 |
| PctPolicAsian | .086 | .081 | .071 | 1.068 | .287 | -.073 | .246 | .103 | .076 | .033 | .214 | 4.665 |
| PctPolicMinor | -.233 | .347 | -.190 | -.671 | .503 | -.917 | .451 | .487 | -.048 | -.021 | .012 | 84.392 |
| OfficAssgnDrugUnits | -.292 | .274 | -.127 | -1.068 | .287 | -.832 | .248 | .343 | -.076 | -.033 | .067 | 14.904 |
| NumKindsDrugsSeiz | .044 | .057 | .032 | .775 | .439 | -.068 | .155 | .132 | .055 | .024 | .549 | 1.821 |
| PolicAveOTWorked | -.043 | .051 | -.036 | -.857 | .392 | -.143 | .056 | .034 | -.061 | -.026 | .551 | 1.815 |
| LandArea | .133 | .102 | .101 | 1.310 | .192 | -.067 | .334 | .162 | .093 | .040 | .161 | 6.222 |
| PopDens | .043 | .112 | .040 | .386 | .700 | -.178 | .265 | .233 | .027 | .012 | .089 | 11.188 |
| PctUsePubTrans | -.147 | .086 | -.157 | -1.698 | .091 | -.317 | .024 | .237 | -.120 | -.052 | .111 | 8.972 |
| PolicCars | .143 | .126 | .111 | 1.131 | .259 | -.106 | .392 | .382 | .080 | .035 | .098 | 10.161 |
| PolicOperBudg | .707 | .463 | .359 | 1.527 | .128 | -.206 | 1.621 | .338 | .108 | .047 | .017 | 58.086 |
| LemasPctPolicOnPatr | -.160 | .104 | -.124 | -1.548 | .123 | -.365 | .044 | -.082 | -.110 | -.048 | .148 | 6.764 |
| LemasGangUnitDeploy | .006 | .029 | .009 | .211 | .833 | -.050 | .062 | .116 | .015 | .007 | .540 | 1.850 |
| LemasPctOfficDrugUn | -.046 | .055 | -.045 | -.839 | .403 | -.155 | .063 | .034 | -.060 | -.026 | .335 | 2.981 |
| PolicBudgPerPop | -.304 | .206 | -.181 | -1.474 | .142 | -.711 | .103 | .096 | -.104 | -.045 | .063 | 15.891 |
| 1. Dependent Variable: ViolentCrimesPerPop  Multiple Regressions Model  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Model Summaryb** | | | | | | | | | | | | Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson | | R Square Change | F Change | df1 | df2 | Sig. F Change | | 1 | .902a | .813 | .698 | .15195 | .813 | 7.065 | 121 | 197 | .000 | 1.916 | | a. Predictors: (Constant), PolicBudgPerPop, pctWPubAsst, LemasGangUnitDeploy, LemasPctOfficDrugUn, PctEmplProfServ, pctWRetire, NumKindsDrugsSeiz, PctHousOccup, LemasPctPolicOnPatr, PolicAveOTWorked, indianPerCap, NumStreet, pctUrban, PolicReqPerOffic, MedNumBR, OtherPerCap, MedOwnCostPctIncNoMtg, PctWorkMomYoungKids, RacialMatchCommPol, PctPolicWhite, PctSameState85, MedRentPctHousInc, LandArea, pctWFarmSelf, PctPolicAsian, PctImmigRecent, AsianPerCap, agePct12t21, FemalePctDiv, PctEmplManu, OfficAssgnDrugUnits, racePctHisp, PctUsePubTrans, HispPerCap, PctVacMore6Mos, blackPerCap, MedOwnCostPctInc, racePctAsian, PctVacantBoarded, PctWOFullPlumb, PctPolicBlack, NumInShelters, PersPerOwnOccHous, PopDens, NumImmig, MedYrHousBuilt, PolicCars, PctHousNoPhone, pctWSocSec, whitePerCap, PctSameCity85, PctHousOwnOcc, LemasTotReqPerPop, PctImmigRec10, PersPerRentOccHous, HousVacant, PctUnemployed, PctLess9thGrade, PctHousLess3BR, MalePctNevMarr, PctPolicHisp, PctBornSameState, LemasTotalReq, PctOccupManu, PctIlleg, LemasSwFTFieldPerPop, NumIlleg, pctWInvInc, PctSameHouse85, OwnOccHiQuart, PctRecentImmig, MedRent, PctTeen2Par, MalePctDivorce, PctWorkMom, PolicOperBudg, PctLargHouseFam, racepctblack, PctYoungKids2Par, PctBSorMore, LemasSwFTFieldOps, population, PctPopUnderPov, agePct12t29, PctNotSpeakEnglWell, RentLowQ, PctImmigRec5, PctPersDenseHous, PctEmploy, PctSpeakEnglOnly, racePctWhite, medFamInc, householdsize, PctOccupMgmtProf, OwnOccLowQuart, PctPolicMinor, PctForeignBorn, PctImmigRec8, pctWWage, agePct65up, NumUnderPov, PctNotHSGrad, RentHighQ, PolicPerPop, PctKids2Par, PersPerFam, perCapInc, agePct16t24, medIncome, PctRecImmig10, PctFam2Par, LemasSwornFT, PersPerOccupHous, PctLargHouseOccup, RentMedian, PctPersOwnOccup, PctRecImmig5, OwnOccMedVal, PctRecImmig8, TotalPctDiv, numbUrban | | | | | | | | | | | | b. Dependent Variable: ViolentCrimesPerPop | | | | | | | | | | | | | | | | | | | | | | | | |

#### Interesting plots























