**Supplementary Table 1. Rank Sum Index (RSI), Modified Sum Index (MSI) and 95 % Confidence Intervals (CI), by County (All 120 Kentucky Counties)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **County** | **Annual Population** | **RSI** | **MSI** |  **Individual** | **Simultaneous** |
| **95% CI** | **95% CI** |
| Owsley | 4744 | 1 | 1 | 1 | 22 | 1 | 56 |
| Perry | 28737 | 9 | 2 | 1 | 10 | 1 | 18 |
| Jackson | 13564 | 2 | 3 | 1 | 18 | 1 | 36 |
| Floyd | 39945 | 5 | 4 | 1 | 11 | 1 | 19 |
| Magoffin | 13295 | 4 | 5 | 1 | 23 | 1 | 42 |
| Martin | 13138 | 12 | 6 | 1 | 24 | 1 | 45 |
| Breathitt | 14204 | 6 | 7 | 1 | 22 | 1 | 37 |
| Leslie | 11470 | 7 | 8 | 1 | 27 | 1 | 45 |
| Letcher | 24467 | 11 | 9 | 4 | 25 | 1 | 35 |
| Menifee | 6428 | 8 | 10 | 2 | 40 | 1 | 70 |
| Harlan | 29689 | 10 | 11 | 5 | 28 | 2 | 41 |
| Clay | 22200 | 16 | 12 | 3 | 31 | 1 | 47 |
| Powell | 12789 | 18 | 13 | 2 | 49 | 1 | 83 |
| Ohio | 23843 | 13 | 14 | 6 | 32 | 2 | 45 |
| Nicholas | 7135 | 35 | 15 | 2 | 66 | 1 | 102 |
| Pike | 65320 | 17 | 16 | 10 | 27 | 5 | 35 |
| Knox | 31762 | 21 | 17 | 6 | 31 | 2 | 43 |
| Lewis | 13972 | 15 | 18 | 6 | 39 | 1 | 65 |
| Whitley | 36016 | 19 | 19 | 9 | 33 | 4 | 46 |
| Lee | 7865 | 14 | 20 | 4 | 52 | 1 | 85 |
| Johnson | 23325 | 22 | 21 | 9 | 38 | 4 | 55 |
| Metcalfe | 10134 | 20 | 22 | 5 | 52 | 1 | 78 |
| Logan | 26836 | 23 | 23 | 10 | 41 | 4 | 56 |
| Wolfe | 7316 | 26 | 24 | 5 | 59 | 1 | 85 |
| McCreary | 18122 | 3 | 25 | 7 | 50 | 2 | 76 |
| Monroe | 11089 | 24 | 26 | 7 | 57 | 2 | 80 |
| Rockcastle | 17079 | 29 | 27 | 13 | 57 | 6 | 79 |
| Bell | 28791 | 25 | 28 | 16 | 51 | 7 | 66 |
| Livingston | 9516 | 27 | 29 | 12 | 71 | 3 | 93 |
| Clinton | 10163 | 40 | 30 | 9 | 63 | 2 | 92 |
| Pendleton | 14894 | 28 | 31 | 13 | 71 | 4 | 93 |
| Bracken | 8480 | 33 | 32 | 14 | 73 | 5 | 97 |
| Lawrence | 15845 | 32 | 33 | 16 | 63 | 7 | 86 |
| Gallatin | 8431 | 37 | 34 | 9 | 82 | 1 | 112 |
| Edmonson | 12084 | 31 | 35 | 14 | 75 | 5 | 100 |
| Hart | 18202 | 30 | 36 | 17 | 64 | 7 | 85 |
| Ballard | 8225 | 34 | 37 | 17 | 76 | 4 | 101 |
| Garrard | 16844 | 36 | 38 | 14 | 78 | 5 | 102 |
| Knott | 16592 | 41 | 39 | 20 | 69 | 8 | 89 |
| Casey | 15937 | 39 | 40 | 20 | 67 | 9 | 86 |
| Bath | 11569 | 38 | 41 | 20 | 74 | 9 | 92 |
| Mercer | 21269 | 42 | 42 | 23 | 79 | 9 | 101 |
| Lincoln | 24779 | 43 | 43 | 22 | 71 | 11 | 93 |
| Elliott | 7483 | 47 | 44 | 15 | 87 | 4 | 111 |
| Grayson | 25545 | 44 | 45 | 26 | 69 | 16 | 86 |
| Estill | 14735 | 45 | 46 | 16 | 85 | 5 | 112 |
| Carroll | 10704 | 48 | 47 | 20 | 86 | 5 | 110 |
| Russell | 17445 | 46 | 48 | 26 | 73 | 14 | 90 |
| Taylor | 24248 | 49 | 49 | 30 | 72 | 20 | 86 |
| Muhlenberg | 31538 | 52 | 50 | 33 | 71 | 24 | 82 |
| Butler | 12766 | 51 | 51 | 25 | 84 | 11 | 104 |
| Simpson | 17217 | 50 | 52 | 27 | 85 | 16 | 109 |
| Mason | 17365 | 68 | 53 | 29 | 82 | 15 | 100 |
| Union | 15081 | 58 | 54 | 30 | 86 | 18 | 104 |
| Henry | 15479 | 54 | 55 | 28 | 91 | 11 | 110 |
| Breckinridge | 19896 | 55 | 56 | 33 | 81 | 18 | 97 |
| Laurel | 58166 | 59 | 57 | 38 | 73 | 30 | 86 |
| Meade | 28911 | 56 | 58 | 37 | 85 | 24 | 102 |
| Hopkins | 46885 | 57 | 59 | 40 | 75 | 30 | 86 |
| Trimble | 8871 | 60 | 60 | 19 | 109 | 5 | 120 |
| Carter | 27827 | 63 | 61 | 37 | 79 | 26 | 91 |
| Wayne | 20723 | 62 | 62 | 31 | 82 | 20 | 99 |
| Grant | 24608 | 65 | 63 | 34 | 90 | 20 | 108 |
| Fulton | 6859 | 61 | 64 | 26 | 103 | 10 | 116 |
| Pulaski | 62073 | 66 | 65 | 45 | 75 | 33 | 86 |
| McLean | 9639 | 53 | 66 | 34 | 93 | 19 | 111 |
| Montgomery | 25911 | 67 | 67 | 41 | 85 | 30 | 102 |
| Trigg | 14119 | 64 | 68 | 39 | 92 | 23 | 109 |
| Carlisle | 5126 | 69 | 69 | 28 | 111 | 8 | 120 |
| Todd | 12307 | 71 | 70 | 35 | 101 | 16 | 115 |
| Morgan | 14058 | 70 | 71 | 38 | 96 | 23 | 113 |
| Marion | 19617 | 75 | 72 | 41 | 101 | 25 | 113 |
| Graves | 36956 | 76 | 73 | 53 | 92 | 38 | 104 |
| Robertson | 2277 | 72 | 74 | 21 | 118 | 4 | 120 |
| Adair | 18543 | 77 | 75 | 44 | 100 | 28 | 113 |
| Spencer | 16586 | 78 | 76 | 36 | 115 | 14 | 120 |
| Marshall | 31388 | 79 | 77 | 57 | 97 | 42 | 109 |
| Clark | 35303 | 80 | 78 | 54 | 103 | 36 | 113 |
| Daviess | 95397 | 73 | 79 | 68 | 92 | 60 | 102 |
| Greenup | 36966 | 83 | 80 | 61 | 95 | 48 | 104 |
| Rowan | 23083 | 87 | 81 | 55 | 101 | 42 | 112 |
| Cumberland | 6932 | 84 | 82 | 39 | 112 | 22 | 119 |
| Webster | 13738 | 74 | 83 | 48 | 107 | 30 | 116 |
| Caldwell | 12933 | 85 | 84 | 52 | 110 | 35 | 116 |
| Fleming | 14321 | 89 | 85 | 55 | 107 | 37 | 115 |
| Barren | 41679 | 93 | 86 | 67 | 101 | 53 | 111 |
| Henderson | 45941 | 86 | 87 | 70 | 104 | 59 | 111 |
| Boyle | 28242 | 82 | 88 | 61 | 110 | 42 | 117 |
| Kenton | 158038 | 92 | 89 | 79 | 100 | 70 | 108 |
| Harrison | 18764 | 88 | 90 | 52 | 114 | 29 | 120 |
| Anderson | 21083 | 90 | 91 | 60 | 113 | 37 | 119 |
| Bourbon | 19949 | 91 | 92 | 56 | 114 | 33 | 120 |
| Nelson | 42516 | 94 | 93 | 72 | 108 | 56 | 114 |
| Owen | 10928 | 95 | 94 | 57 | 114 | 33 | 119 |
| Allen | 19692 | 81 | 95 | 62 | 113 | 42 | 118 |
| Lyon | 8370 | 98 | 96 | 63 | 116 | 40 | 120 |
| Bullitt | 72516 | 99 | 97 | 78 | 112 | 63 | 116 |
| Boyd | 49337 | 103 | 98 | 84 | 110 | 73 | 115 |
| Warren | 109774 | 102 | 99 | 86 | 109 | 75 | 114 |
| Calloway | 36765 | 105 | 100 | 81 | 113 | 68 | 117 |
| Jessamine | 47076 | 107 | 101 | 79 | 114 | 64 | 118 |
| Franklin | 49066 | 97 | 102 | 82 | 113 | 68 | 117 |
| Madison | 81578 | 106 | 103 | 87 | 111 | 79 | 115 |
| McCracken | 65214 | 110 | 104 | 87 | 113 | 76 | 115 |
| Hardin | 100889 | 108 | 105 | 91 | 112 | 83 | 116 |
| Campbell | 89017 | 100 | 106 | 90 | 113 | 81 | 116 |
| Crittend | 9317 | 109 | 107 | 68 | 117 | 40 | 120 |
| Christian | 72666 | 104 | 108 | 88 | 113 | 73 | 117 |
| Hickman | 4948 | 101 | 109 | 61 | 119 | 36 | 120 |
| Larue | 14086 | 111 | 110 | 76 | 117 | 55 | 120 |
| Green | 11381 | 96 | 111 | 75 | 118 | 51 | 120 |
| Jefferson | 729453 | 114 | 112 | 103 | 113 | 97 | 115 |
| Scott | 44868 | 112 | 113 | 88 | 118 | 70 | 120 |
| Oldham | 58776 | 116 | 114 | 101 | 119 | 86 | 120 |
| Hankcock | 8553 | 117 | 115 | 87 | 120 | 49 | 120 |
| Shelby | 40914 | 115 | 116 | 105 | 120 | 85 | 120 |
| Boone | 114728 | 118 | 117 | 114 | 120 | 110 | 120 |
| Washington | 11593 | 113 | 118 | 101 | 120 | 77 | 120 |
| Fayette | 288050 | 120 | 119 | 115 | 120 | 112 | 120 |
| Woodford | 24520 | 119 | 120 | 111 | 120 | 95 | 120 |