## Supplementary Material

In this supplementary material we present the complete estimation results for the models relating different definitions of access to physical activity (in Table S1) and to obesity (in Table S2). In each case we also present a base model with no accessibility statistics for comparison.

Table S . Estimated Effect of Accessibility on Physical Activity Rates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | No Access | Size and Distance | Amenities | 10–minute Walk |
| (Intercept) | –24.5190 \* | –24.8266 \* | –24.8920 \* | –24.7176 \* |
|  | [–41.5947; –7.4433] | [–41.7445; –7.9087] | [–41.8372; –7.9468] | [–41.7891; –7.6461] |
| log(Density) | 0.1740 \* | 0.1766 \* | 0.1757 \* | 0.1686 \* |
|  | [0.0348;0.3132] | [0.0375;0.3156] | [0.0366;0.3148] | [0.0293;0.3079] |
| log(Income) | 5.9786 \* | 5.9976 \* | 5.9964 \* | 5.9767 \* |
|  | [5.5540;6.4032] | [5.5737;6.4215] | [5.5723;6.4205] | [5.5523;6.4011] |
| Fulltime | 0.1283 \* | 0.1275 \* | 0.1275 \* | 0.1285 \* |
|  | [0.1098;0.1468] | [0.1090;0.1460] | [0.1090;0.1460] | [0.1100;0.1470] |
| College–educated | 0.0075 | 0.0076 | 0.0073 | 0.0083 |
|  | [ –0.0159;0.0310] | [ –0.0158;0.0309] | [ –0.0161;0.0306] | [ –0.0152;0.0317] |
| Single Adults | –0.0363 \* | –0.0362 \* | –0.0360 \* | –0.0366 \* |
|  | [ –0.0527; –0.0198] | [ –0.0526; –0.0198] | [ –0.0524; –0.0196] | [ –0.0530; –0.0201] |
| Youth (0–17) | –0.1306 \* | –0.1311 \* | –0.1310 \* | –0.1311 \* |
|  | [ –0.1572; –0.1040] | [ –0.1576; –0.1046] | [ –0.1576; –0.1045] | [ –0.1577; –0.1045] |
| Young adults (18–34) | 0.0283 \* | 0.0293 \* | 0.0294 \* | 0.0281 \* |
|  | [0.0081;0.0484] | [0.0092;0.0495] | [0.0092;0.0495] | [0.0079;0.0482] |
| Seniors (65+) | 0.0430 \* | 0.0403 \* | 0.0408 \* | 0.0427 \* |
|  | [0.0157;0.0704] | [0.0130;0.0677] | [0.0135;0.0682] | [0.0153;0.0700] |
| Black population share | –0.0499 \* | –0.0499 \* | –0.0498 \* | –0.0497 \* |
|  | [ –0.0587; –0.0412] | [ –0.0586; –0.0412] | [ –0.0585; –0.0411] | [ –0.0584; –0.0409] |
| Asian population share | –0.0772 \* | –0.0767 \* | –0.0768 \* | –0.0774 \* |
|  | [ –0.0877; –0.0666] | [ –0.0873; –0.0662] | [ –0.0874; –0.0663] | [ –0.0879; –0.0669] |
| Hispanic population share | –0.1021 \* | –0.1025 \* | –0.1025 \* | –0.1020 \* |
|  | [ –0.1112; –0.0929] | [ –0.1116; –0.0934] | [ –0.1116; –0.0934] | [ –0.1111; –0.0928] |
| Other Minorities | 0.0006 | 0.0035 | 0.0037 | –0.0005 |
|  | [ –0.0882;0.0894] | [ –0.0851;0.0921] | [ –0.0850;0.0923] | [ –0.0893;0.0883] |
| 𝜸 : log(Density) | 1.1105 \* | 1.0987 \* | 1.1030 \* | 1.0928 \* |
|  | [0.7245;1.4964] | [0.7156;1.4817] | [0.7196;1.4865] | [0.7063;1.4793] |
| 𝜸 : log(Income) | 1.9269 \* | 1.9646 \* | 1.9570 \* | 1.9189 \* |
|  | [0.8913;2.9625] | [0.9370;2.9922] | [0.9282;2.9857] | [0.8836;2.9541] |
| 𝜸 : Fulltime | –0.036 | –0.0396 | –0.0388 | –0.0363 |
|  | [ –0.0835;0.0115] | [ –0.0869;0.0076] | [ –0.0861;0.0085] | [ –0.0837;0.0112] |
| 𝜸 : College–educated | –0.0707 \* | –0.0711 \* | –0.0721 \* | –0.0731 \* |
|  | [ –0.1307; –0.0107] | [ –0.1306; –0.0116] | [ –0.1317; –0.0125] | [ –0.1332; –0.0131] |
| 𝜸 : Single Adults | –0.0081 | –0.0085 | –0.0077 | –0.0076 |
|  | [ –0.0506;0.0344] | [ –0.0507;0.0336] | [ –0.0499;0.0345] | [ –0.0501;0.0348] |
| 𝜸 : Youth (0–17) | –0.0111 | –0.0111 | –0.0101 | –0.012 |
|  | [ –0.0806;0.0585] | [ –0.0802;0.0579] | [ –0.0793;0.0591] | [ –0.0815;0.0575] |
| 𝜸 : Young adults (18–34) | 0.0806 \* | 0.0842 \* | 0.0848 \* | 0.0801 \* |
|  | [0.0296;0.1317] | [0.0335;0.1349] | [0.0339;0.1356] | [0.0291;0.1311] |
| 𝜸 : Seniors (65+) | 0.0625 | 0.0589 | 0.0603 | 0.0623 |
|  | [ –0.0071;0.1322] | [ –0.0103;0.1282] | [ –0.0090;0.1296] | [ –0.0073;0.1319] |
| 𝜸 : Black population share | 0.0006 | 0.0011 | 0.0008 | 0.0006 |
|  | [ –0.0157;0.0168] | [ –0.0151;0.0172] | [ –0.0153;0.0170] | [ –0.0157;0.0168] |
| 𝜸 : Asian population share | –0.0410 \* | –0.0398 \* | –0.0401 \* | –0.0409 \* |
|  | [ –0.0597; –0.0223] | [ –0.0584; –0.0212] | [ –0.0587; –0.0215] | [ –0.0596; –0.0222] |
| 𝜸 : Hispanic population share | 0.0009 | –0.0009 | –0.0008 | 0.0008 |
|  | [ –0.0164;0.0182] | [ –0.0181;0.0163] | [ –0.0181;0.0164] | [ –0.0165;0.0181] |
| 𝜸 : Other Minorities | 0.0656 | 0.0715 | 0.071 | 0.0716 |
|  | [ –0.1926;0.3239] | [ –0.1856;0.3287] | [ –0.1863;0.3284] | [ –0.1866;0.3299] |
| Accessibility |  | 0.1610 \* | 0.1472 \* | 0.5865 |
|  |  | [0.0238;0.2982] | [0.0058;0.2886] | [ –0.1778;1.3508] |
| 𝝀 : spatial correlation | 0.6985 \* | 0.6906 \* | 0.6917 \* | 0.6987 \* |
|  | [0.6600;0.7370] | [0.6514;0.7297] | [0.6526;0.7307] | [0.6602;0.7372] |
| Num. obs. | 2099 | 2099 | 2099 | 2099 |
| Parameters | 27 | 28 | 28 | 28 |
| Log Likelihood | –4438.0569 | –4435.5066 | –4436.0465 | –4436.9264 |

\* zero is outside the outside the confidence interval. 95% confidence interval in brackets

Table S . Estimated Effect of Accessibility on Obesity Rates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | No Access | Size and Distance | Amenities | 10-minute Walk |
| (Intercept) | 71.6539\* | 71.7489\* | 71.7525\* | 71.7182\* |
|  | [61.1144; 82.1933] | [61.2170; 82.2809] | [61.2164; 82.2887] | [61.1846; 82.2518] |
| log(Density) | -0.0294 | -0.0307 | -0.0306 | -0.0266 |
|  | [-0.1037;0.0448] | [-0.1050;0.0436] | [-0.1049;0.0437] | [-0.1009;0.0478] |
| log(Income) | -0.4849\* | -0.4907\* | -0.4908\* | -0.4861\* |
|  | [-0.7612; -0.2085] | [-0.7672; -0.2141] | [-0.7674; -0.2142] | [-0.7623; -0.2098] |
| Fulltime | -0.0137\* | -0.0137\* | -0.0137\* | -0.0139\* |
|  | [-0.0244; -0.0031] | [-0.0244; -0.0030] | [-0.0244; -0.0030] | [-0.0246; -0.0032] |
| College-educated | 0.0343\* | 0.0343\* | 0.0343\* | 0.0340\* |
|  | [ 0.0211;0.0474] | [ 0.0211;0.0474] | [ 0.0211;0.0474] | [ 0.0208;0.0471] |
| Single Adults | 0.001 | 0.001 | 0.001 | 0.0012 |
|  | [-0.0082;0.0103] | [-0.0083;0.0103] | [-0.0083;0.0102] | [-0.0081;0.0104] |
| Youth (0-17) | 0.0051 | 0.0052 | 0.0052 | 0.0054 |
|  | [-0.0099;0.0201] | [-0.0098;0.0202] | [-0.0098;0.0202] | [-0.0096;0.0204] |
| Young adults (18-34) | -0.0095 | -0.0097 | -0.0098 | -0.0094 |
|  | [-0.0206;0.0016] | [-0.0209;0.0014] | [-0.0209;0.0014] | [-0.0205;0.0017] |
| Seniors (65+) | -0.0826\* | -0.0821\* | -0.0821\* | -0.0825\* |
|  | [-0.0977; -0.0675] | [-0.0973; -0.0669] | [-0.0973; -0.0670] | [-0.0976; -0.0673] |
| Black population share | 0.0462\* | 0.0462\* | 0.0462\* | 0.0461\* |
|  | [ 0.0414;0.0511] | [ 0.0414;0.0511] | [ 0.0414;0.0510] | [ 0.0413;0.0510] |
| Asian population share | -0.1010\* | -0.1010\* | -0.1010\* | -0.1009\* |
|  | [-0.1069; -0.0950] | [-0.1070; -0.0951] | [-0.1070; -0.0951] | [-0.1068; -0.0949] |
| Hispanic population share | -0.0062\* | -0.0061\* | -0.0061\* | -0.0062\* |
|  | [-0.0118; -0.0007] | [-0.0116; -0.0006] | [-0.0116; -0.0006] | [-0.0117; -0.0007] |
| Other Minorities | -0.0642\* | -0.0646\* | -0.0647\* | -0.0637\* |
|  | [-0.1127; -0.0156] | [-0.1132; -0.0161] | [-0.1133; -0.0162] | [-0.1122; -0.0151] |
| 𝛾: log(Density) | -0.5545\* | -0.5565\* | -0.5567\* | -0.5445\* |
|  | [-0.7908; -0.3182] | [-0.7927; -0.3203] | [-0.7929; -0.3204] | [-0.7812; -0.3079] |
| 𝛾: log(Income) | -0.0863 | -0.1004 | -0.0987 | -0.0783 |
|  | [-0.7966;0.6240] | [-0.8108;0.6100] | [-0.8091;0.6118] | [-0.7883;0.6317] |
| 𝛾: Fulltime | -0.0118 | -0.0115 | -0.0116 | -0.0116 |
|  | [-0.0404;0.0169] | [-0.0402;0.0172] | [-0.0402;0.0171] | [-0.0402;0.0171] |
| 𝛾: College-educated | 0.0698\* | 0.0698\* | 0.0699\* | 0.0710\* |
|  | [ 0.0334;0.1062] | [ 0.0334;0.1062] | [ 0.0335;0.1063] | [ 0.0346;0.1075] |
| 𝛾: Single Adults | -0.0114 | -0.0113 | -0.0114 | -0.0117 |
|  | [-0.0368;0.0140] | [-0.0367;0.0140] | [-0.0368;0.0140] | [-0.0371;0.0137] |
| 𝛾: Youth (0-17) | -0.033 | -0.033 | -0.0332 | -0.0326 |
|  | [-0.0748;0.0088] | [-0.0748;0.0088] | [-0.0750;0.0086] | [-0.0744;0.0092] |
| 𝛾: Young adults (18-34) | -0.0238 | -0.0247 | -0.0248 | -0.0235 |
|  | [-0.0545;0.0069] | [-0.0554;0.0060] | [-0.0555;0.0059] | [-0.0542;0.0071] |
| 𝛾: Seniors (65+) | -0.0222 | -0.0217 | -0.0218 | -0.0222 |
|  | [-0.0629;0.0185] | [-0.0624;0.0190] | [-0.0625;0.0189] | [-0.0628;0.0185] |
| 𝛾: Black population share | 0.0186\* | 0.0186\* | 0.0186\* | 0.0185\* |
|  | [ 0.0080;0.0292] | [ 0.0080;0.0292] | [ 0.0080;0.0292] | [ 0.0079;0.0291] |
| 𝛾: Asian population share | -0.0460\* | -0.0462\* | -0.0461\* | -0.0461\* |
|  | [-0.0594; -0.0325] | [-0.0596; -0.0327] | [-0.0596; -0.0327] | [-0.0595; -0.0327] |
| 𝛾: Hispanic population share | 0.0257\* | 0.0263\* | 0.0263\* | 0.0258\* |
|  | [ 0.0129;0.0386] | [ 0.0134;0.0392] | [ 0.0134;0.0391] | [ 0.0130;0.0386] |
| 𝛾: Other Minorities | 0.0794 | 0.0789 | 0.079 | 0.0767 |
|  | [-0.0648;0.2236] | [-0.0652;0.2230] | [-0.0652;0.2231] | [-0.0674;0.2209] |
| Physical Activity | -0.4807\* | -0.4803\* | -0.4803\* | -0.4803\* |
|  | [-0.5048; -0.4566] | [-0.5044; -0.4561] | [-0.5044; -0.4562] | [-0.5044; -0.4562] |
| 𝛾: Physical Activity | 0.018 | 0.0195 | 0.0194 | 0.0173 |
|  | [-0.0397;0.0757] | [-0.0383;0.0772] | [-0.0383;0.0772] | [-0.0404;0.0750] |
| Accessibility |  | -0.0349 | -0.0352 | -0.263 |
|  |  | [-0.1095;0.0397] | [-0.1129;0.0425] | [-0.6491;0.1232] |
| 𝜆: spatial correlation | 0.8363\* | 0.8357\* | 0.8360\* | 0.8361\* |
|  | [ 0.8101;0.8625] | [ 0.8094;0.8620] | [ 0.8098;0.8622] | [ 0.8099;0.8624] |
| Num. obs. | 2099 | 2099 | 2099 | 2099 |
| Parameters | 29 | 30 | 30 | 30 |
| Log Likelihood | -3114.3931 | -3113.9742 | -3113.9998 | -3113.5028 |

\* zero is outside the outside the confidence interval. 95% confidence interval in brackets