**Appendix**

**Table S1** Rotated component matrix of the socio-economic index

|  |  |
| --- | --- |
|  | Components |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Ro\_3more\_rate | -0.985 | -0.036 | 0.037 | -0.028 | -0.038 | 0.104 | 0.031 | 0.003 |
| Ro\_2\_rate | 0.977 | 0.001 | 0.073 | 0.038 | 0.003 | -0.069 | -0.006 | -0.027 |
| B\_no\_rate | 0.969 | 0.051 | -0.122 | 0.022 | 0.051 | -0.130 | -0.034 | 0.015 |
| Ro\_1\_rate | 0.964 | 0.063 | -0.125 | 0.019 | 0.064 | -0.129 | -0.052 | 0.016 |
| F\_livea\_rate | 0.918 | 0.148 | 0.141 | 0.212 | -0.097 | 0.001 | -0.139 | 0.004 |
| Co\_nP\_rate | 0.906 | -0.261 | -0.133 | 0.047 | -0.014 | -0.184 | 0.043 | -0.045 |
| U\_50ormore\_rate | 0.904 | 0.074 | -0.061 | -0.095 | 0.118 | -0.189 | -0.166 | -0.074 |
| 0\_17\_rate | -0.902 | 0.051 | -0.018 | -0.245 | 0.154 | -0.035 | 0.028 | -0.013 |
| B\_1\_rate | 0.902 | 0.170 | 0.225 | 0.182 | -0.017 | 0.117 | -0.002 | -0.008 |
| Co\_C\_rate | -0.897 | 0.125 | -0.082 | -0.294 | -0.106 | 0.132 | -0.064 | 0.031 |
| 18\_65\_rate | 0.862 | -0.005 | 0.105 | 0.125 | -0.135 | 0.007 | 0.404 | 0.037 |
| pop\_density | 0.853 | 0.062 | 0.148 | 0.162 | 0.082 | -0.021 | 0.220 | -0.065 |
| U\_de\_rate | -0.852 | -0.279 | -0.399 | -0.004 | -0.082 | -0.117 | 0.017 | 0.002 |
| B\_3\_rate | -0.837 | 0.000 | -0.165 | -0.146 | -0.344 | -0.151 | 0.090 | 0.003 |
| U\_20to49\_rate | 0.809 | 0.096 | 0.206 | 0.242 | -0.017 | 0.223 | 0.029 | 0.001 |
| female\_rate | -0.769 | -0.119 | 0.350 | 0.242 | -0.166 | -0.099 | -0.061 | 0.173 |
| male\_rate | 0.769 | 0.119 | -0.350 | -0.242 | 0.166 | 0.099 | 0.061 | -0.173 |
| F\_mar\_rate | -0.753 | -0.461 | -0.245 | -0.345 | 0.096 | -0.061 | -0.010 | -0.007 |
| B\_4\_rate | -0.716 | -0.447 | -0.379 | -0.221 | 0.159 | 0.003 | 0.069 | -0.072 |
| Co\_Pa\_rate | 0.691 | -0.011 | 0.266 | 0.579 | 0.149 | -0.008 | 0.092 | -0.043 |
| Co\_pool\_rate | -0.665 | 0.403 | 0.232 | -0.238 | 0.228 | 0.027 | -0.082 | 0.139 |
| F\_nlivea\_rate | 0.649 | 0.053 | 0.270 | 0.507 | -0.175 | 0.145 | 0.286 | 0.045 |
| I\_lessthan15000\_rate | 0.578 | 0.390 | -0.138 | 0.275 | 0.174 | -0.063 | -0.132 | 0.361 |
| B\_5more\_rate | -0.549 | -0.420 | -0.390 | 0.061 | 0.428 | 0.078 | -0.094 | 0.023 |
| I\_15000-35000\_rate | 0.209 | 0.870 | 0.091 | 0.212 | -0.060 | 0.052 | -0.195 | 0.114 |
| Oc\_less1\_rate | -0.281 | -0.865 | -0.060 | 0.132 | -0.233 | -0.081 | 0.023 | -0.017 |
| Oc\_1to2\_rate | 0.284 | 0.855 | 0.048 | -0.136 | 0.246 | 0.084 | -0.012 | 0.024 |
| R\_So\_rate | -0.122 | 0.846 | 0.062 | -0.029 | 0.046 | 0.244 | -0.008 | -0.029 |
| I\_200000more\_rate | -0.080 | -0.838 | -0.136 | -0.036 | 0.291 | -0.076 | -0.130 | -0.150 |
| I\_35000-100000\_rate | -0.039 | 0.837 | 0.236 | 0.046 | -0.288 | 0.199 | 0.096 | 0.007 |
| F\_fema\_rate | -0.427 | 0.799 | 0.169 | 0.011 | 0.115 | -0.037 | 0.059 | -0.041 |
| R\_B\_rate | 0.049 | 0.777 | -0.039 | 0.267 | 0.367 | -0.027 | 0.094 | 0.003 |
| R\_Na\_rate | -0.078 | 0.754 | 0.068 | -0.077 | 0.007 | 0.223 | 0.037 | 0.086 |
| F\_mal\_rate | -0.451 | 0.725 | -0.031 | 0.040 | 0.041 | 0.153 | 0.041 | 0.001 |
| I\_100000-200000\_rate | -0.333 | -0.651 | -0.076 | -0.326 | -0.144 | -0.140 | 0.299 | -0.082 |
| R\_Two\_rate | 0.055 | 0.623 | 0.133 | 0.315 | 0.088 | 0.014 | 0.253 | -0.121 |
| R\_Ame\_rate | 0.135 | 0.591 | -0.094 | -0.077 | -0.148 | -0.103 | 0.059 | -0.049 |
| Oc\_2more\_rate | 0.133 | 0.566 | 0.144 | -0.034 | 0.017 | 0.017 | -0.116 | -0.052 |
| U\_att\_rate | -0.078 | -0.048 | 0.816 | 0.039 | 0.166 | -0.138 | 0.130 | -0.156 |
| B\_2\_rate | 0.249 | 0.498 | 0.699 | 0.191 | 0.030 | 0.125 | -0.129 | 0.074 |
| U\_3or4\_rate | 0.056 | 0.367 | 0.688 | 0.089 | 0.009 | 0.369 | 0.164 | -0.061 |
| U\_5to9\_rate | 0.122 | 0.263 | 0.640 | 0.013 | 0.113 | 0.572 | 0.161 | -0.017 |
| Y\_1959earlier\_rate | 0.292 | 0.052 | 0.042 | 0.899 | -0.135 | 0.000 | -0.117 | -0.065 |
| Y\_1980-1999\_rate | -0.382 | -0.037 | -0.044 | -0.826 | -0.059 | -0.037 | 0.157 | 0.026 |
| U\_2\_rate | -0.033 | 0.429 | 0.460 | 0.471 | -0.099 | -0.176 | -0.060 | -0.127 |
| R\_Asian\_rate | 0.108 | 0.057 | 0.147 | -0.116 | 0.891 | 0.065 | -0.008 | -0.098 |
| R\_W\_rate | -0.065 | -0.654 | -0.106 | -0.051 | -0.705 | -0.095 | -0.062 | 0.076 |
| Y\_1960-1979\_rate | -0.309 | 0.264 | -0.015 | -0.265 | 0.206 | 0.751 | -0.116 | -0.054 |
| Y\_2000later\_rate | 0.226 | -0.305 | -0.009 | -0.371 | 0.109 | -0.682 | 0.137 | 0.137 |
| U\_10to19\_rate | 0.294 | 0.362 | 0.505 | 0.060 | 0.130 | 0.563 | 0.136 | 0.041 |
| over\_65\_rate | -0.071 | -0.083 | -0.180 | 0.201 | -0.011 | 0.050 | -0.866 | -0.050 |
| U\_bo\_rate | -0.108 | -0.019 | -0.090 | -0.079 | -0.089 | -0.055 | 0.045 | 0.918 |
| U\_mo\_rate | -0.338 | 0.252 | -0.162 | -0.430 | -0.400 | -0.145 | 0.039 | 0.513 |

**Table S2** Rotated component matrix of the built-environment index

|  |  |
| --- | --- |
|  | Components |
| 1 | 2 | 3 | 4 |
| PD\_culture | 0.965 | 0.161 | -0.025 | 0.021 |
| PD\_of | 0.955 | 0.190 | 0.041 | 0.089 |
| PD\_hot | 0.939 | -0.008 | 0.036 | -0.009 |
| PD\_me | 0.937 | 0.261 | 0.029 | 0.021 |
| PD\_catering | 0.911 | 0.283 | -0.049 | -0.008 |
| PD\_tra | 0.884 | 0.200 | -0.026 | 0.133 |
| PD\_sel | 0.876 | 0.115 | 0.019 | -0.014 |
| PD\_ent | 0.833 | 0.426 | -0.057 | 0.083 |
| PD\_ope | 0.676 | 0.608 | -0.137 | 0.005 |
| Building\_density | 0.279 | 0.909 | 0.127 | 0.050 |
| road\_density | 0.337 | 0.897 | 0.086 | 0.061 |
| PD\_edu | 0.225 | 0.862 | -0.029 | -0.073 |
| A\_resi\_rate | -0.162 | 0.239 | 0.744 | 0.131 |
| A\_rec\_rate | -0.174 | 0.335 | -0.700 | 0.197 |
| A\_retail\_rate | 0.052 | 0.459 | 0.539 | 0.431 |
| A\_ind\_rate | -0.087 | 0.115 | 0.215 | 0.768 |
| A\_par\_rate | -0.210 | 0.127 | 0.183 | -0.612 |

**Table S3** Rotated component matrix of meteorological index

|  |  |
| --- | --- |
|  | Components |
| 1 | 2 |
| ambtemp | 0.857 | 0.019 |
| pm2.5 | 0.835 | -0.206 |
| windS | -0.791 | -0.391 |
| Rtemp | -0.009 | 0.967 |