

Methods – National Walkability Index Data

The National Walkability Index dataset characterizes Census block groups and tracts based on its relative walkability. Walkability depends upon characteristics of the built environment that influence the likelihood of walking being used as a mode of travel. The Walkability Index is based on data from the EPA's Smart Location Mapping project which includes a National Walkability Index for block groups.¹

The block group data from the EPA have been aggregated to provide a similar walkability index at the census-tract level. There are four original variables used to compute the index across three dimensions of walkability:

- Employment type dimension (D2):
 - Employment type and occupied housing (D2A_EPHHM)
 - Mix of employment types (D2B_E8MIXA)
- Street intersection density (D3)
- Transit accessibility (D4)

For the tract-level index, we generated averages of these four variables among all block groups in a census tract, weighted by block group populations. We then ranked the tracts from 1 to 20 for each of the four variables. In this ranking, if more than 1/20th of the tracts had a particular value (zero or missing), a reduced number of ranks were assigned for the remaining tracts. Finally, the ranks were combined to calculate the tract level National Walkability Index giving equal weight to each of the three dimensions:

$$\text{NatWalkIndex} = (\text{D2A_Rank}/6) + (\text{D2B_Rank}/6) + (\text{D3B_Rank}/3) + (\text{D4A_Rank}/3)$$

The National Walkability Index is based on ranks of tracts and block groups at the national level. For research involving a particular study area, there might not be as much variation in walkability index values as there is nationally. Researchers could generate a specific index for their study area (or a larger area that includes the study area) to characterize regional or local variation in walkability. The original variables are included in the dataset for this purpose. Working with a subset of the national data, researchers could regenerate the ranks for each of the four variables and then calculate the walkability index based on weighted values of the ranks as above.

¹ See <https://www.epa.gov/smartgrowth/smart-location-mapping#walkability>.