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Introduction

DRCOG staff developed the Equity Index Dataset to better understand the geography of marginalized communities in the Denver region. Staff developed it over several months, using research, peer agency interviews and public engagement. The dataset is at the census tract level, where each tract is given a final index score based on the presence of marginalized communities in its population. This guide explains, in detail, the data and methods used to create the dataset.

Methodology

Indicators: The dataset is based on 10 demographic indicators from American Community Survey 5-year estimates, chosen to represent populations who have been historically marginalized from planning processes or who experience barriers to mobility (refer to Table 1).

Table 1: Equity index indicators

Indicator	Source	Definition
Percent of people with low income	Table C17002	Percent of people with income in the past 12 months under 200% of the federal poverty line.
Percent of housing cost-burdened households	Tables B25070, B25091	Percent of households with gross rent or mortgage at 30% or more of household income in the past 12 months.
Percent of single-parent households	Table B11005	Percent of family households with one or more people younger than 18 and without a spouse present.
Percent of people with a disability	Table B18101	Percent of people reporting they have a disability.
Percent of households without a vehicle	Table B25044	Percent of households without a vehicle available.
Percent of adults 60 or older	Table B01001	Percent of people 60 or older.

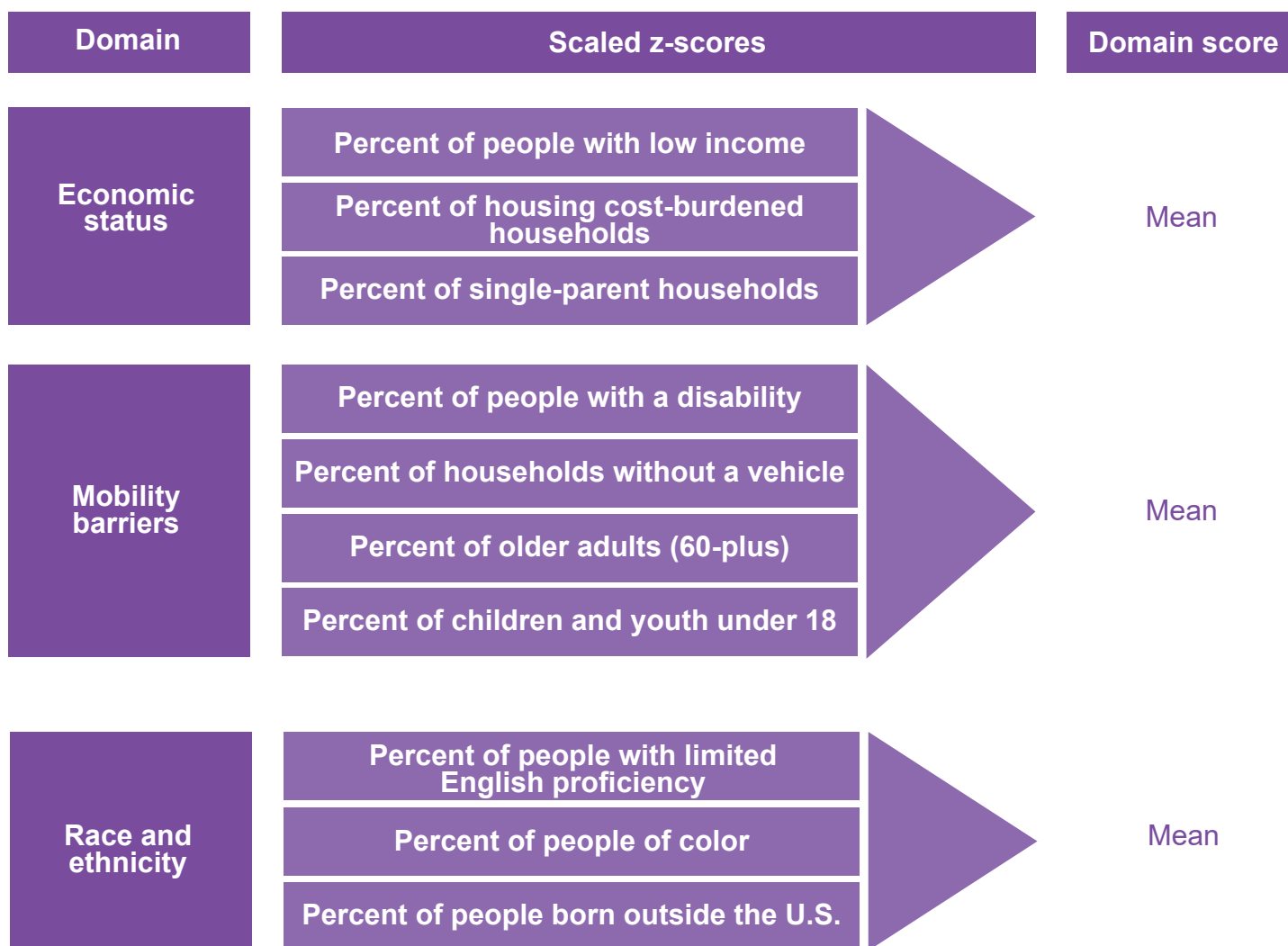
Indicator	Source	Definition
Percent of children and youth younger than 18	Table B01001	Percent of people 17 or younger.
Percent of people with limited English proficiency	Table B16004	Percent of people 5 or older who speak English less than “very well.”
Percent people of color	Table B03002	Percent of people identifying as Hispanic or Latino, or as any person identifying as not Hispanic or Latino as well as not “white alone.”
Percent of people born outside the U.S.	Table B05002	Percent of people born outside the U.S.

Domain scores: The first step in calculating a final equity index score is to group the indicators into domains based on common themes. The ten indicators were grouped into the “economic status,” “mobility barriers” and “race and ethnicity” domains as shown in Figure 1. The use of domains helps keep the index balanced; it ensures that final scores aren’t overly influenced by a particular factor of marginalization simply because more indicators relate to that factor. In this case, the use of domains ensures that economic status and race remain as important as mobility barriers in the calculation process.

Next, z-scores are calculated for each indicator per tract. A z-score measures how high or low the indicator for the tract is, compared to the regional average. For example, if a tract has 60% people with low income while the regional average for all tracts is 30%, the tract will have a high z-score for the percent people with low income indicator. After z-scores are calculated, they are cross-walked to a 0-100 scale based on the minimum and maximum z-scores found across tracts regionwide for the indicator. Staff cross-walk the z-scores to a 0-100 scale to avoid overemphasizing indicators that simply have large variability in later calculation steps.

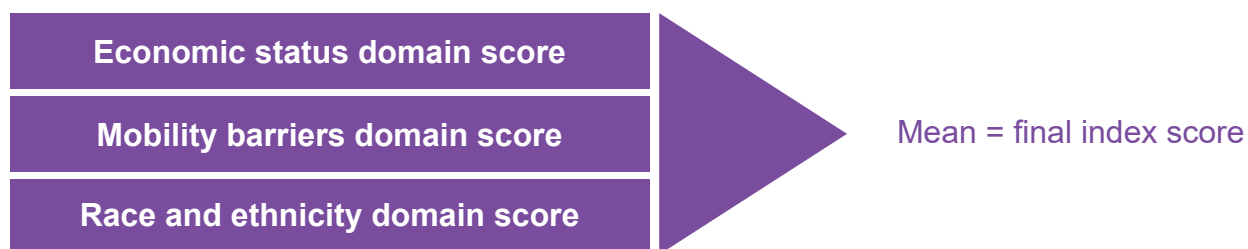
Finally, staff calculates the mean scaled z-score for all indicators in the domain to produce the domain score. These steps are shown in Figure 1.

Figure 1: Calculation of domain scores



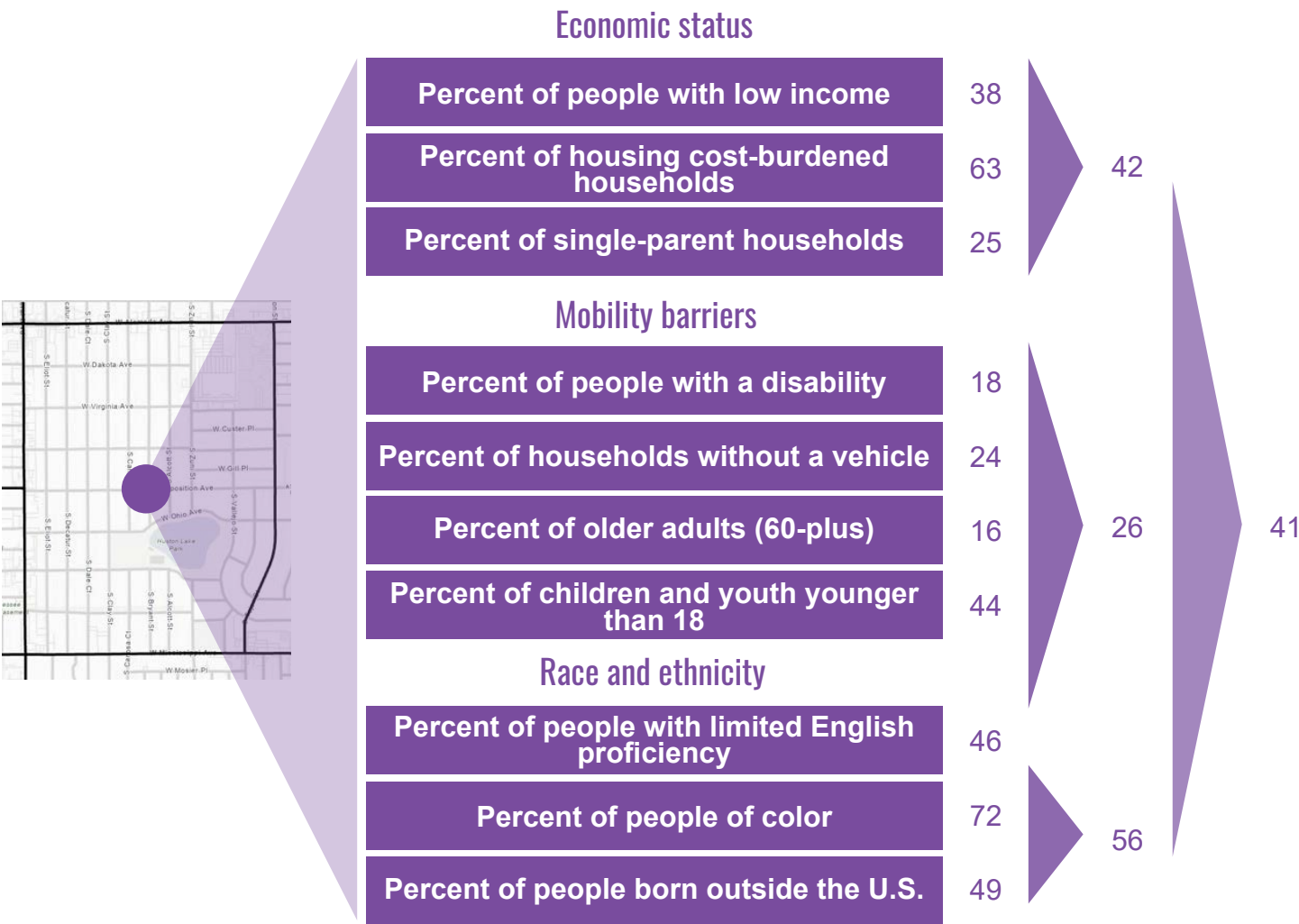
Final index score: Once staff calculate domain scores for every tract in the region, they can calculate the final index score. The final score is simply the mean of the three domain scores:

Figure 2: Calculation of final index score



Example: Figure 3 shows how an index score is calculated for a tract in southwest Denver. First, scaled z-scores are calculated for each indicator. The average scaled z-scores for indicators in each domain produces the domain score. Finally, the average of the domain scores results in the final index score.

Figure 3: Example index score calculation



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