**Methodology for estimating Opportunity Atlas outcomes for 2020 Census Tracts**

This dataset includes estimates of upward mobility from the Opportunity Atlas for each 2020 census tract. The 2020 Census produced new tract boundaries, and while OI hasn’t produced "new" estimates of upward mobility for these new geographies, we did want to create a dataset that includes the Atlas's information on upward mobility for each 2020 tract.

The “us\_tract\_2010\_2020\_crosswalks” dataset lists estimates for the economic mobility rate for each 2020 census tract in the country (listed as kfr\_weighted). We created these adjusted values based on the rates of upward mobility (kfr, or “kid family rank”) for each 2010 census tract currently shown on the Atlas, paired with information on the proportion of geographic overlap between a 2020 census tract and 2010 census tract (or tracts) produced by the Census Bureau ([available here](https://www.census.gov/geographies/reference-files/time-series/geo/relationship-files.2020.html)). For regular users of the Opportunity Atlas, these values are analogous to the “Household Income at Age 35” variable shown in the default landing page on the Atlas (albeit expressed in ranks as opposed to dollars).

Below are the steps taken to create these new estimates for the three possible scenarios that emerge based on the new tract boundaries.

1. **No 2020 boundary change**: For places where the boundaries didn't change at all, this means we just directly re-use the value from the Atlas for that tract.
2. **2020 boundary changed to now overlap with several 2010 tracts**: For situations where the boundaries have changed, or a new 2020 tract overlaps with multiple 2010 tracts, we calculate a new value based on how much each of those 2010 tracts overlaps with the 2020 tract, and the estimate of upward mobility from the Atlas for each 2010 tract. This new value is a weighted total of the upward mobility in each 2010 tract, with more weight given to tracts that overlap more with the new 2020 tract.
3. **Split tracts**: In situations where a 2010 tract was split in half (or in thirds), we again just use the 2010 tract value for each new 2020 tract without making any adjustments.

Each of those steps populates the kfr\_weighted variable, but we've also included kfr\_largest\_tract which shows the upward mobility rate for the 2010 tract that overlaps the most with the new 2020 tract. In situations 1 and 3 above, these values are the same, but in scenario 2 it provides a different value. Additionally, we've included the data on the percent overlap for each 2010 tract (wgt\_1 - wgt\_5) and each 2010 tract's upward mobility rate (kfr\_1 - kfr\_5) just to include as much information as possible.

Users can repeat these same steps to produce estimates for 2020 tracts for other outcomes shown on the Atlas.

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| **Variable Name** | **Description** |
| tract\_2020 | String version of the 11-digit FIPS code for the 2020 census tract |
| kfr\_weighted | Measure of economic mobility (kid family rank) for each 2020 tract based on weighted values of kfr\_pooled\_pooled\_p25 from the Opportunity Atlas using 2010 census tracts. Weights are the % of geographic overlap between the 2020 tract and the 2010 tract as provided by the U.S. Census Bureau found here: https://www.census.gov/geographies/reference-files/time-series/geo/relationship-files.2020.html |
| kfr\_largest\_tract | Measure of economic mobility (kid family rank) for each 2020 tract based on values of kfr\_pooled\_pooled\_p25 from the Opportunity Atlas using 2010 census tracts. The 2020 tract value comes directly from the 2010 census tracts that overlaps the most geographically with the new 2020 tract.  |
| tract\_2010\_1 – tract\_2010\_5 | The 2010 census tract FIPS codes for the tract(s) that overlap with the relevant 2020 census tract. Tract\_2010\_1 is the tract that overlaps the most in geographic terms with the 2020 tract, while tract\_2020\_5 is the tract that overlaps the least. 2020 Tracts that meet criteria 1 and 3 above have missing values for tract\_2010\_2 – tract\_2020\_5. |
| wgt\_1 – wgt\_5 | The percentage overlap between a 2010 census tract and the relevant 2020 census tract. wgt\_1 is the percentage overlap for the 2010 tract that overlaps the most in geographic terms with the 2020 tract, while wgt\_5 is the percentage overlap for the tract that overlaps the least. 2020 Tracts that meet criteria 1 and 3 above have missing values for wgt\_2 – wgt\_5. These values can be found here: https://www.census.gov/geographies/reference-files/time-series/geo/relationship-files.2020.html |
| kfr\_1 – kfr\_5 | The value of kfr\_pooled\_pooled\_p25 for the 2010 census tract(s) that overlap with the relevant 2020 census tract. kfr\_1 is the kfr value for the 2010 tract that overlaps the most in geographic terms with the 2020 tract, while kfr\_5 is the kfr value for the tract that overlaps the least. 2020 Tracts that meet criteria 1 and 3 above have missing values for kfr\_2 – kfr\_5. |