

Census 2021 population-weighted centroids for Data Zones and Super Data Zones

Information paper

October 2023

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1. Introduction

Population-weighted centroids have been produced for [Data Zones](#) and [Super Data Zones](#), which are the main statistical output geographies used for dissemination of local-level statistics from Census 2021. Each centroid is a single reference point representing the spatial distribution of the Census 2021 usual resident population in that area.

2. Method

The population-weighted centroids are based on the average X (easting) and Y (northing) coordinates (Irish Grid) of the occupied addresses in an area, as enumerated in Census 2021. The average is weighted by the usual resident population count at each address, be it a household or communal establishment. Finally, the centroid for the area is snapped to the nearest constituent address, ensuring that its XY coordinates:

- correspond to an actual address;
- are located inside the boundary of the area; and
- do not overlap with a water body such as a river or lake.

The method is illustrated in Figure 1, which shows on the left the spatial distribution of addresses in a sample area along with a hypothetical population count at each. This distribution is summarised on the right as a single population-weighted centroid, whose location matches that of an actual address.

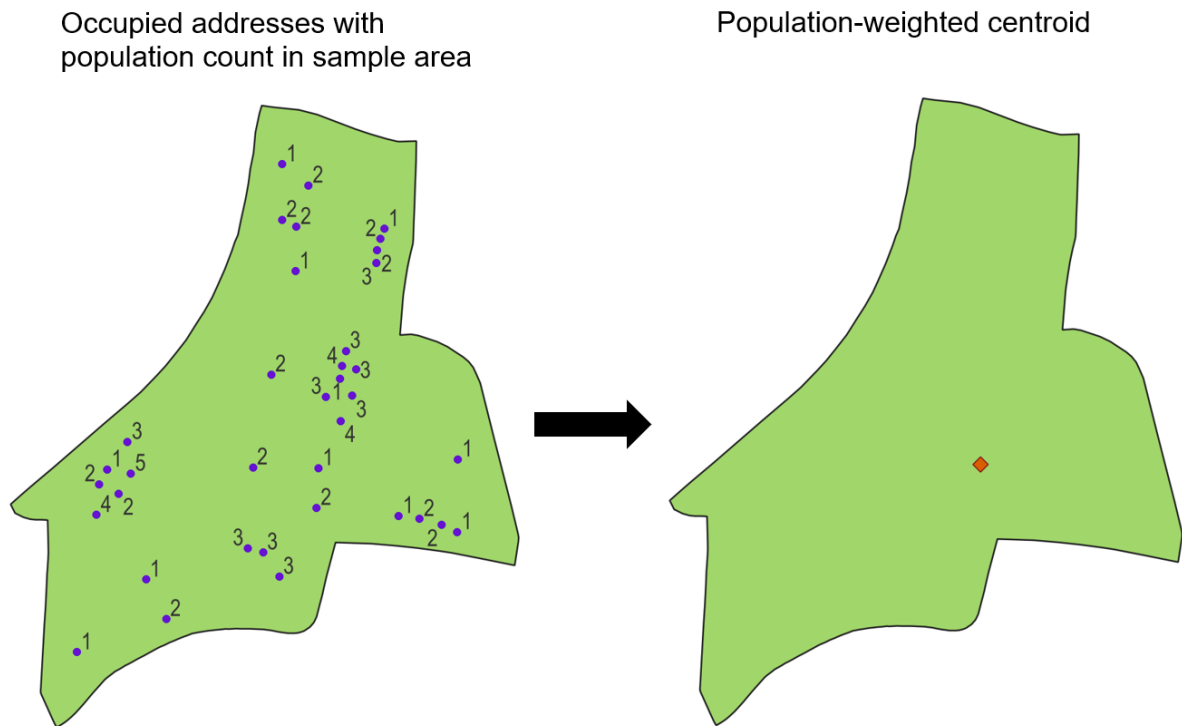


Figure 1. Example of a population-weighted centroid for a sample area (right) based on the spatial distribution of occupied addresses (left).

3. Application

The Census 2021 population-weighted centroids can be used for a variety of analyses, including the geographical assignment of data to higher geographies. The [Census 2021 population-weighted centroids for Data Zones and Super Data Zones](#) are available to download from the NISRA website.