

Use of the New Zealand Deprivation Index in the NZAVS

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Deprivation at the Local Area Unit

We measured the affluence of participants' immediate (small area) neighborhood using the 2013 New Zealand Deprivation Index (Atkinson, Salmond, Crampton, 2013; see also Salmond, Crampton & Atkinson, 2007). New Zealand is unusual in having rich census information about each area unit/neighborhood of the country available for research purposes. The smallest of these area units are meshblocks. The NZAVS includes the meshblock code for each participant.

The geographic size of these meshblock units differs depending on population density. Each unit tends to cover a region containing a median of roughly 81 residents ($M = 95.95$, $SD = 73.49$, range = 0-1899). In 2013, at the time of the latest census, there were a total of 44,211 meshblocks for which data was available. The distribution of usually resident population of the 44,211 meshblocks for which data were available from the 2013 New Zealand National Census is presented in Figure 1.

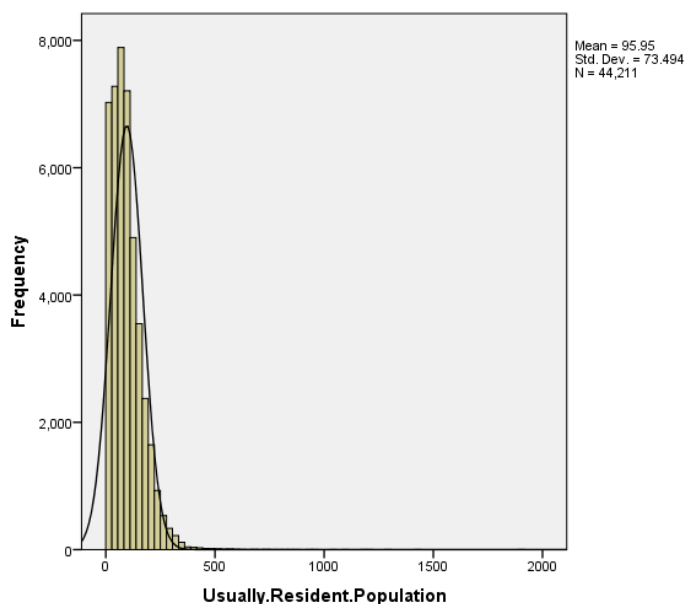


Figure 1. Histogram showing distribution of Usually Resident Population of 44,211 meshblocks based on the 2013 New Zealand National Census.

Statistics New Zealand (2013) defined a meshblock as “a defined geographic area, varying in size from part of a city block to large areas of rural land. Each meshblock abuts against another to form a network covering all of New Zealand including coasts and inlets, and extending out to the two hundred mile economic zone. Meshblocks are added together to ‘build up’ larger geographic areas such as area units and urban areas.”

The New Zealand Deprivation Index (Atkinson et al., 2013; Salmond et al., 2007) uses aggregate census information about the residents of each meshblock to assign a decile-rank index from 1 (most affluent) to 10 (most impoverished) to each meshblock unit. Because it is a decile-ranked index, the 10% of meshblocks that are most deprived are most affluent are given a score of 1, the next 10% a score of 2, and so on. The index is based on a Principal Components Analysis of the following nine variables (in weighted order): proportion of adults who received a means-tested benefit, household income, proportion not owning own home, proportion single-parent families, proportion unemployed, proportion lacking qualifications, proportion household crowding, proportion no telephone access, and proportion no car access.

The New Zealand Deprivation Index thus reflects the average level of deprivation for small neighborhood-type units (or small community areas of about 80-90 people each) across the entire country. The index is a well-validated index of the level of deprivation of small area units, and has been widely used in health and social policy research examining numerous health outcomes, including mortality, rates of hospitalization, smoking, cot death, and access to health care, to name just a few examples (e.g., HURA Research Alliance et al., 2006; Mitchell, Stewart, Crampton, & Salmond, 2000; Salmond & Crampton, 2000; Crampton, Salmond, Woodward & Reid, 2000). The index is also widely used in service planning by government and local council, and is a key indicator used to identify high needs areas and allocate resources such as health funding (see Salmond & Crampton, 2012, White, Gunston, Salmond, Atkinson, & Crampton, 2008, for review). The current NZAVS sample had a mean deprivation index of **XX** (SD = **XX**) with an average of **XX** (SD = **XX**) people sampled per meshblock.

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