

Submission on: The Data and Statistics (Census) Amendment Bill

From: Professor Peter Crampton, on behalf of the Team¹ who have created the **New Zealand Index of Socioeconomic Deprivation for Small Areas (NZDep)**, an index which has been created from each of the previous seven Censuses (1991 to 2023).

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This submission explains the concerns that the NZDep Team has for any possible future version of NZDep if the *Data and Statistics (Census) Amendment Bill* is passed. In that circumstance, future census information will be extracted from many files in Stats NZ's Integrated Data Infrastructure (IDI) environment and placed into a new Administrative Population Census (APC) file.

Recommendations

1. A full enumeration census should be retained unless and until data from an Administrative Population Census has been demonstrated to be of equal quality, coverage, and granularity across all domains.
2. Support is given to Stats NZ and other government departments, by all means necessary, for the long and extensive task of collecting, cleaning and integrating the data (of varying quality) that will be included in the continuing and necessary updates to Stats NZ's Integrated Data Infrastructure (IDI).
3. If the new Administrative Population Census is implemented, examine, in the very early 2030s, whether it is adequate for New Zealand's data needs; and, if not, consider returning to a full enumeration census.

Why is the NZDep index important?

The NZDep Index of Socioeconomic Deprivation for Small Areas (NZDep) is an external high-level output from the NZ Census of Population and Dwellings that quantifies the relative socioeconomic deprivation of small areas throughout New Zealand.

An NZDep index has been constructed from each of the last seven censuses (1991 to 2023), using the same methodology but with adaptations reflecting changes in both the census forms and society in general. These indexes have been very widely used by government and local government agencies, and many others. Examples illustrating the importance of NZDep are given in *Users of the NZDep indexes* overleaf.

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Users of the NZDep index

- Government agencies (for example the Ministry of Health and the Energy Efficiency and Conservation Authority). Of particular importance is that the Ministry of Health uses it in their health funding formulas (for example the new capitation funding formula for general practices);
- Local government uses it for planning and needs assessment purposes;
- Other non-government organisations also use it (for example Community Law Centres);
- It is used as a tool for advocacy for resources and amenities in low-income communities; and
- It is used in numerous research settings (for example, in epidemiological studies of the causes of disease and of access to health services).

What is the NZDep index?

The NZDep index uses data from the NZ Census of Population and Dwellings to quantify the relative socioeconomic deprivation of small areas (generally comprising 100 to 200 persons) throughout New Zealand.

The latest index, NZDep2023, is a statistical combination of nine socioeconomic deprivation characteristics available from the individual and household Census returns in 2023. These variables are listed in the first column of the table below.

Components of the NZDep2023 index and their future availability

NZDep2023 socioeconomic deprivation variables	Source	Available in the administrative files in Stats NZ's Integrated Data Infrastructure (IDI)?
People aged 18 – 64 receiving a Means-tested Benefit	Person	Yes
People aged 18 – 64 Unemployed	Person	Yes
People aged 18 – 64 with No Qualifications	Person	Yes
People living in households with Jensen-equivalised income below an income threshold (Low Household Income)	Household	NO , but may become possible by 2030, although with likely quality issues
People aged < 75 living in a Sole-parent Family	Family	NO , but may be available by 2030, although with unknown reliability
People living in equivalised households below a bedroom-occupancy threshold (Overcrowding)	Household	NO , but some other information may be possible by 2030, although it is unlikely to be as good
People living in dwellings that are always damp and/or always have mould greater than A4 size (Unhealthy Home)	Dwelling	NO, NEVER
People with no access to the Internet At Home	Household	NO, probably NEVER
People Not Living In Own Home	Household	NO, possibly NEVER

The two main consequences for NZDep if an Administrative Population Census is introduced

Censuses up to 2023 have been based on **households and dwellings**. The proposed Bill defines a new administrative census model that is fundamentally different – it will **track persons**, because administrative data are collected from **persons**.

There are only three person-level variables in the NZDep index (green rows in the table on the previous page). Note that these three variables are the only variables with a comparable (but not exact) counterpart in Stats NZ's IDI environment.

Consequence 1: Household data availability.

The first consequence of the fundamental change in Census perspective concerns the **establishment of addresses and households**. If the Bill is passed, **it will not be possible to create NZDep in its current form**. If an index were to be created based on just the three currently available deprivation variables – Means-tested Benefit, Unemployed, No Qualifications – instead of on NZDep's nine deprivation variables (listed in the table), there is no guarantee that it would provide an adequate overall measure of an area's socioeconomic deprivation, since deprived individuals in an area have different needs and priorities for effective economic, social and cultural engagement.

Stats NZ, in their paper *Creating household and family information from admin data: Progress, limitations, and next census* (published online on 31 March 2026), states that:

Households are formed at addresses, and errors accumulate. As a result, household consistency [with the 2023 Census] (68.3 percent) is substantially lower than address consistency (86.7 percent).

The report also notes that:

For the next [administrative] census, as a baseline solution, household and family data will likely need to be based on the new census annual sample survey. ... However, this information will be less granular than what users have been accustomed to in the past.

The report clarifies the research needed to improve address, household and family information:

Future admin data research will focus on improving the quality of the derived addresses and relationships (for example, by exploring additional data sources for relationships), and understanding their quality and limitations. There is methodological scope to improve the quality of household and family data, such as the possibility of using addresses and relationships simultaneously to form households.

Any future work should continue to draw on engagement already occurring, while expanding and deepening collaboration with data users, subject matter experts, Te Tiriti partners, researchers, and other government agencies. Engagement is important both for identifying where current methods fail to reflect lived realities and for helping prioritise areas where additional data sourcing or methodological development would be most valuable.

These quotes make it clear that the **two household-level variables and one family-level variable** that may become available in some form before 2030 – Low Household Income, Overcrowding, and Sole-parent Family, as described in the amber rows in the table on the previous page – will be of lesser quality than would have been obtained in a traditional household-based Census of Population and Dwellings. This will undoubtedly affect the

reliability of any future NZDep-like index that includes household or family information calculated from administrative data, as will the **unavailability of the last three variables in the table** (red rows)—Unhealthy homes, (no) Internet at home, and Not living in own home.

Consequence 2: Data quality issues in a person-based administrative census.

The quality issues for data in the administrative census include timeliness, coverage and accuracy.

Timeliness: Unlike previous household-based censuses which collected information from everyone at the same point in time (Census Day), a person-based administrative census will combine information collected at the last occasion in any particular data set when contact was made. That is, the information will no longer be collected at a consistent date but across unknown previous days, weeks, months, or possibly years.

Coverage: There is no guarantee that every relevant person will be captured in any of the data sets in the IDI. The absence of such persons will result in underestimation of the characteristics being ascertained by that data set.

Accuracy: Since the IDI is comprised of various data sets, collected in different circumstances (in person or electronically), by different organisations, and for different purposes, it is likely that levels of accuracy across the data sets will vary. Inconsistencies in how variables are coded by the different organisations will add further inaccuracies. Cumulatively, these inaccuracies are likely to be greater than those in a single data set, such as each of the previous census data sets.

All these data quality issues will negatively affect the production of any future NZDep-like index. For this reason, we **oppose** the **Data and Statistics (Census) Amendment Bill**.

The future

The NZDep Team is actively assessing the consequences of the change to an Administrative Population Census, and is developing the best possible IDI-based version of NZDep using the APC file.

A final note

The data-quality issues to be encountered by the NZDep Team if the planned Administrative Population Census is approved by Parliament will be encountered by everyone using the new census data, for whatever purpose.

Recommendations

1. A full enumeration census should be retained unless and until data from an Administrative Population Census has been demonstrated to be of equal quality, coverage, and granularity across all domains.
2. Support is given to Stats NZ and other relevant government departments, by all means necessary, for the long and extensive tasks of collecting, cleaning and integrating the data that will be included in Stats NZ's Integrated Data Infrastructure (IDI).
3. If the new Administrative Population Census is implemented, examine, in the very early 2030s, whether it is adequate for New Zealand's data needs; and, if not, consider returning to a full enumeration census.