



## IPS Paper

### To count or to estimate: a note on compiling population estimates from administrative data

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#### Presentation File

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[CSO To Count or to Estimate - Irish Population Estimates v20230927](#)

#### Brief Description

Many countries are developing the use of administrative sources for their statistical production as well as to transform their population and housing census in either a fully register-based census or a census combining registers and surveys. Countries having an administrative population register, where individual are registered at their residential address, use it as the backbone of their system, adding additional sources to provide information on topics not covered by the registers and to remove potential overcount. However, countries with no administrative population register tend to build statistical registers combining several administrative data sources.

The issue is here not only to avoid over-count, but also undercount, and to use an appropriate methodology in order to determine the resident population.

In addition, in countries with no population registers, the population may be very sensitive about privacy and even a statistical register may raise concern. With presentations from Canada, Ireland, France, and New-Zealand, the session will provide an overview of methodologies used and specific issues faced in countries building statistical register in this context and will present recent progress in this area.

#### Abstract

Like many countries, Ireland has been researching new systems of population estimates compiled using administrative data. Ireland does not have a Central Population Register from which the estimates can be compiled.

The primary step in compiling population estimates from administrative data is to first build a Statistical Population Dataset (SPD). Ideally an SPD will have one record for each person in the population containing the relevant attributes. The ideal SPD then allows compilation of statistics by simply counting over records.

In practice, the compilation of SPDs is prone to error. These errors can be classified into 4 types of error; over coverage, under coverage, domain misclassification and linkage error.

Ireland, to date, has investigated 2 different approaches to the compilation of population estimates from administrative data. The first, labeled in this paper as the simple count method, is based on building an SPD which minimises the overall number of individual record errors such that simple counts from the SPD will provide population estimates.

The second, labeled in this paper as the estimation method, is based on building an SPD which aims to eliminate all error types bar that of undercoverage and then adjusts counts for undercoverage using Dual System Estimation (DSE) methods to obtain population estimates.

This paper explores the advantages and disadvantages of both methods before considering how they could be integrated to eliminate the disadvantages.

Many NSIs will be considering similar challenges when compiling annual Census like population estimates and this paper aims to contribute to that discussion.