

The census in New Zealand: what does the future hold?

Gary Dunnet

IPS041, ISI WSC 2021



Census Transformation strategy (2012)

Vision: Administrative census, with survey support

Short - medium term (2018 Census): **Modernise** the current census model and make it more efficient

- Majority online responses
- Increase use of administrative data (address list for mail-out)

Long-term: Investigate alternative ways of producing small area population, social and economic statistics; exploring the feasibility of a census based on **administrative data**

- **2015: Actively work towards a census based on administrative data, supported by sample surveys**

Stats NZ's 2021 strategy refresh

Four 5 year goals include:

Become an organisation that uses administrative data first.

“By 2024, we will have developed a clear roadmap for delivering a successful Census using primarily administrative data and be positioned to confirm whether or not 2028 will be the last full enumeration Census.”

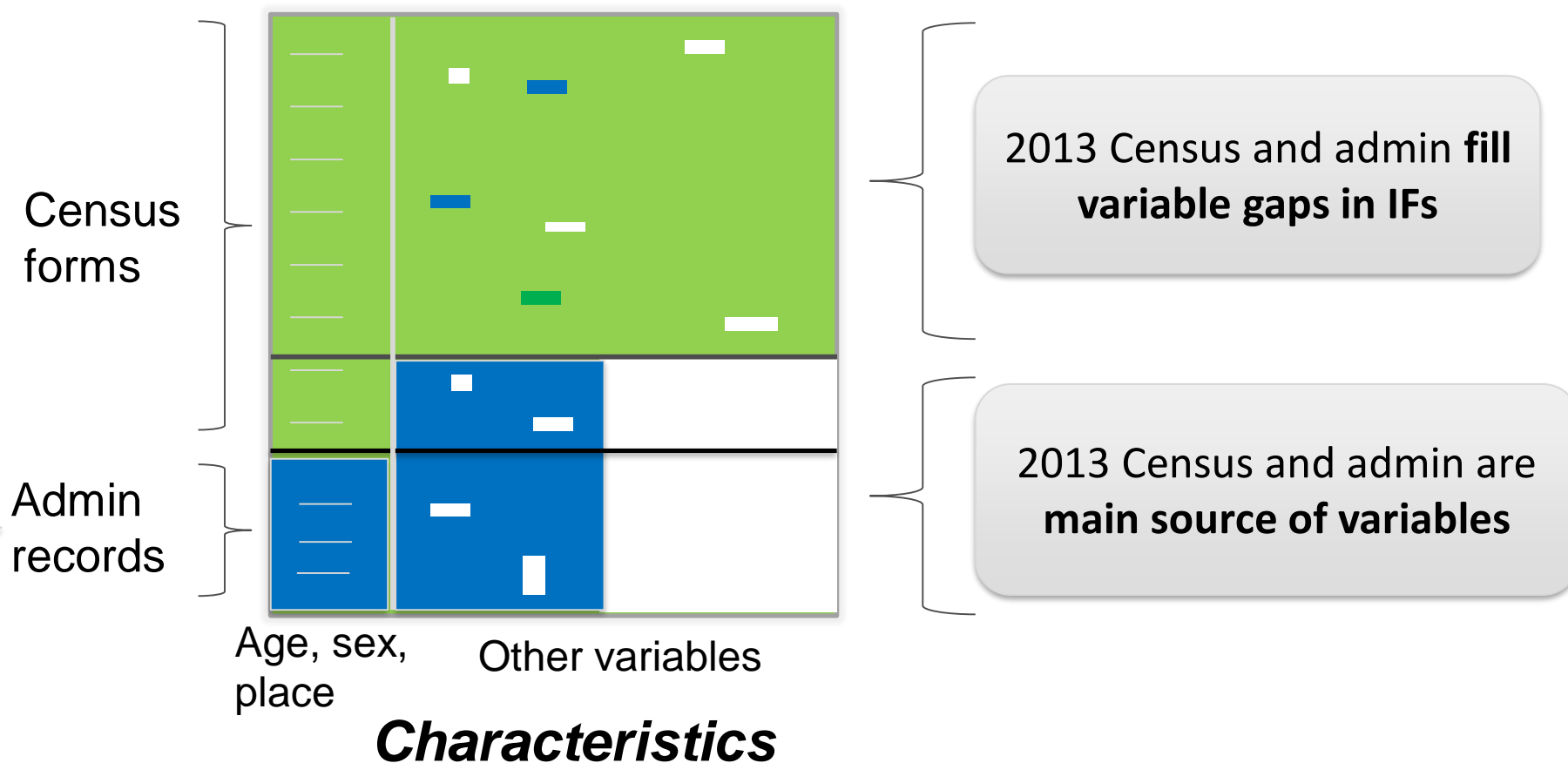


Necessary pre-conditions for an admin-based census

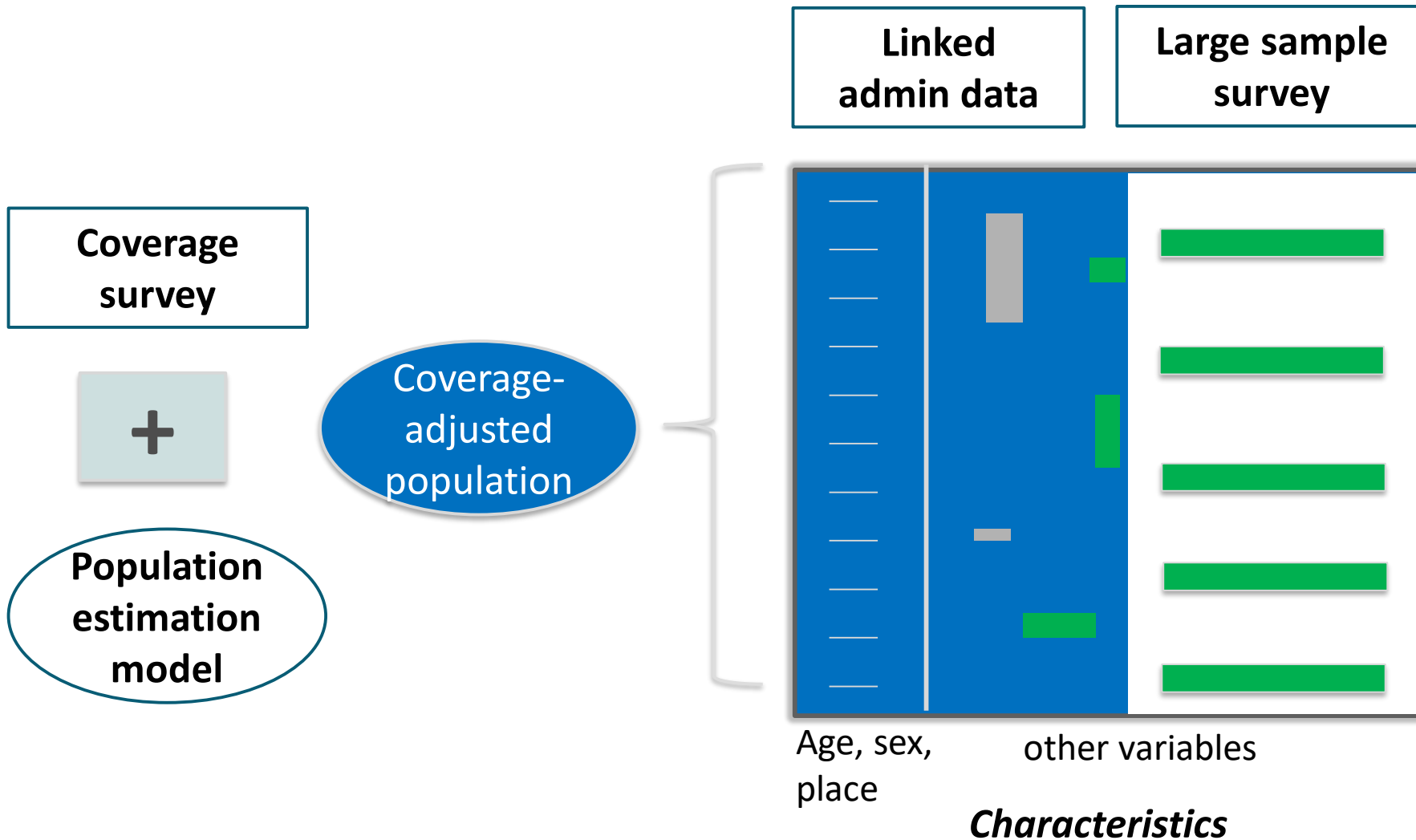
1. Legislation:
 - new Data and Statistics Bill: on track, planned 2022
2. Public acceptance:
 - trust and confidence in Stats NZ, and use of administrative data
3. Suitable admin data sources
4. Ability to link data sources

2018 Census dataset: Combined sources

People



Future Census: Admin-based + sample surveys



Key methodological challenges

Fundamentals

Probabilistic Record linkage

Quality assessment of administrative data

Quality measures for multiple sourced outputs

Integration with other household surveys

Population estimates

Select an admin resident population

Population estimation model

Design coverage survey

Population characteristics

Derive attribute variables from multiple admin sources

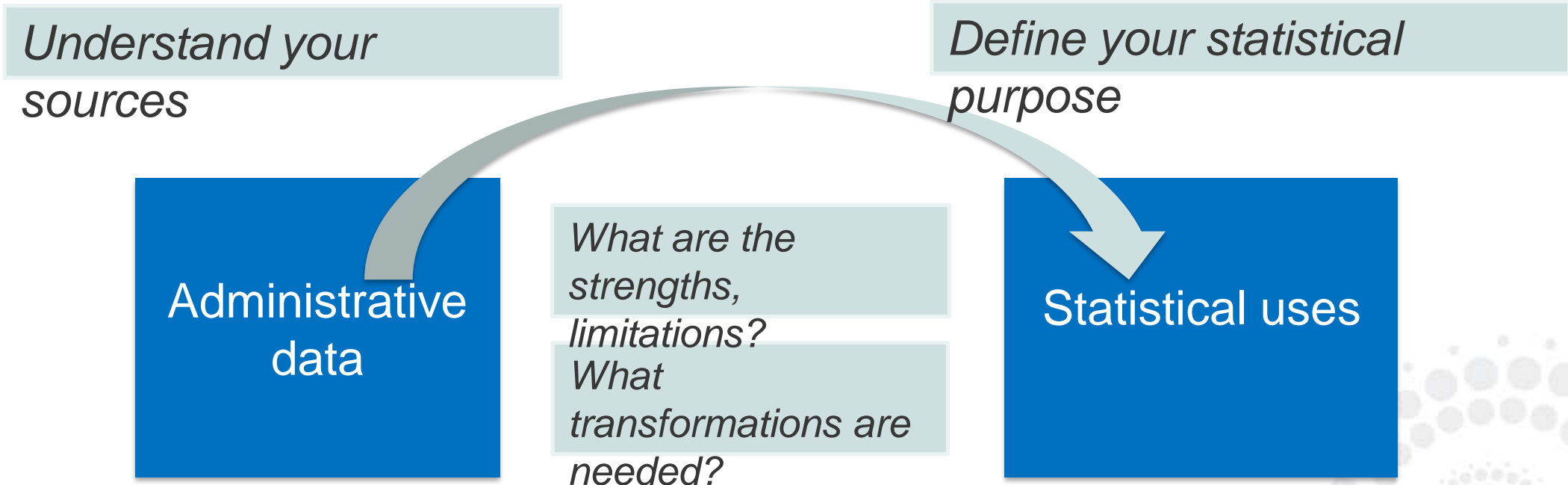
Imputation for missing data
Validation for misclassification

Design large-scale attribute survey

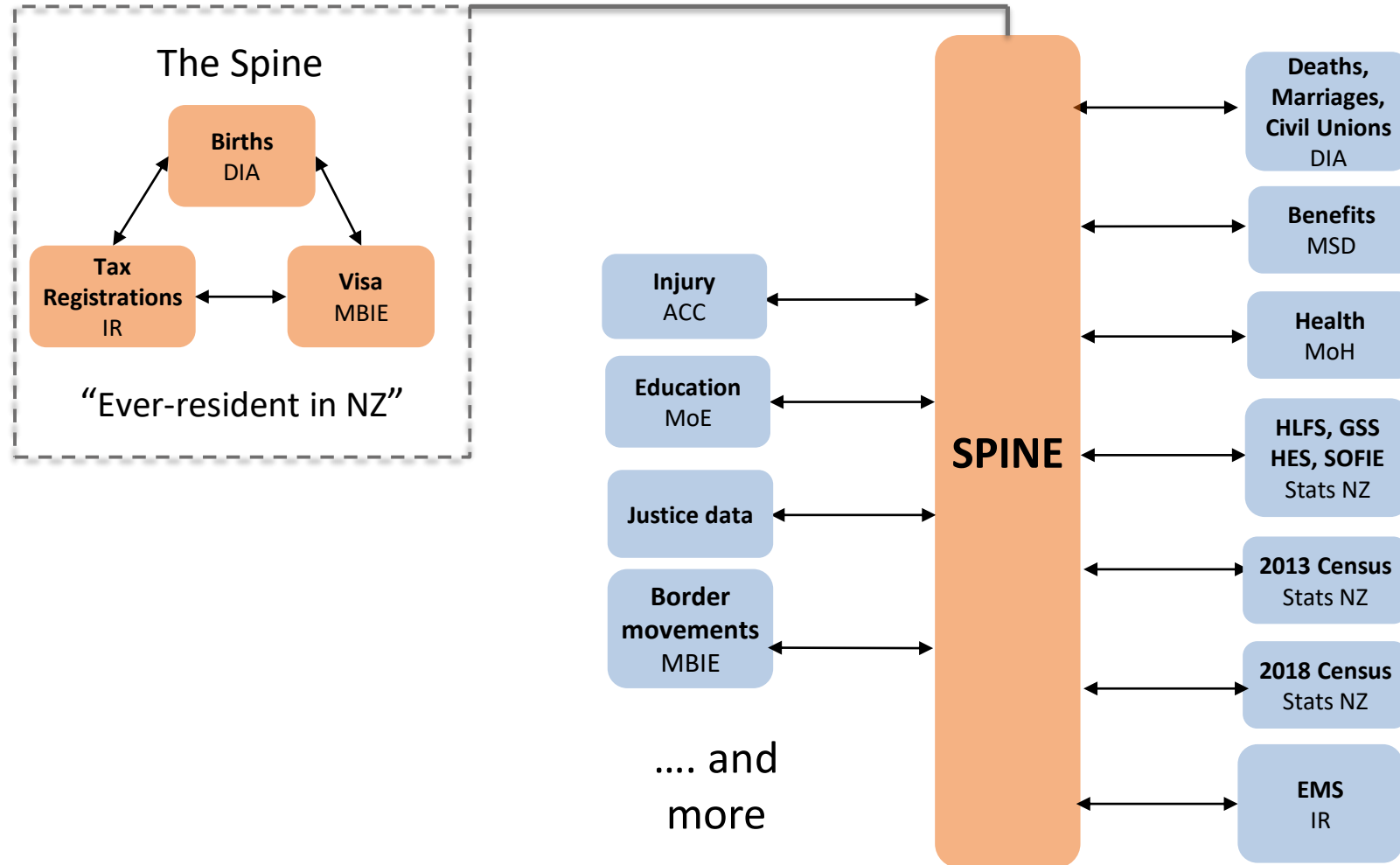
Admin data means transformation



Transformation



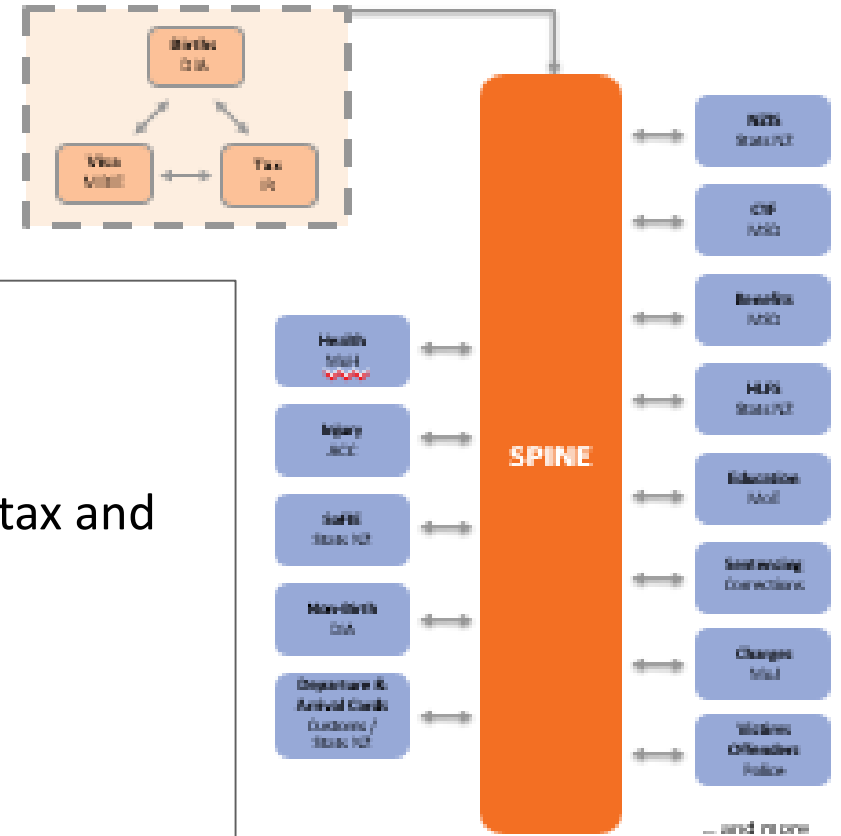
Integrated Data Infrastructure (IDI)



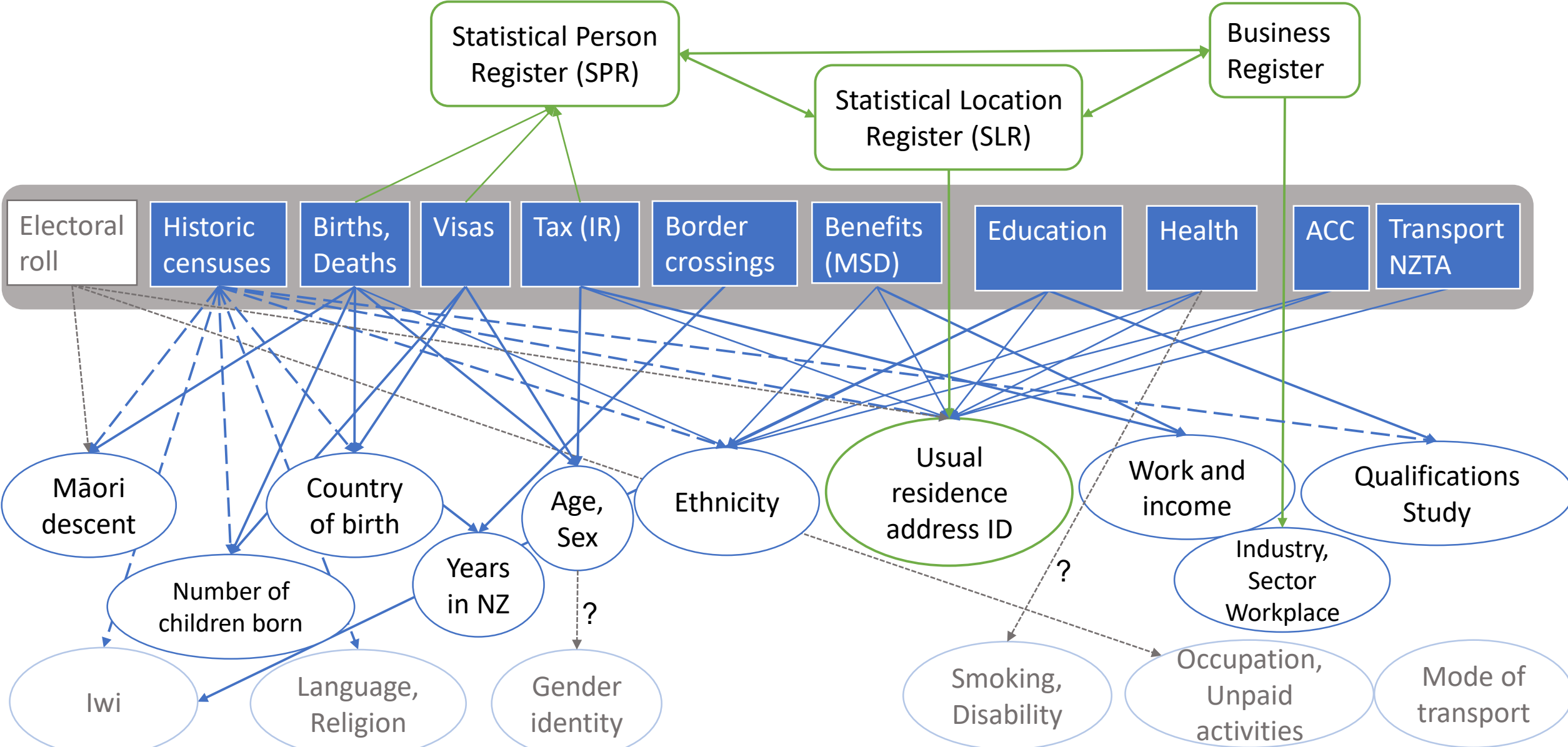
Administrative NZ resident population

Administrative estimate of the NZ resident population
Begin with long IDI spine ('ever-resident')

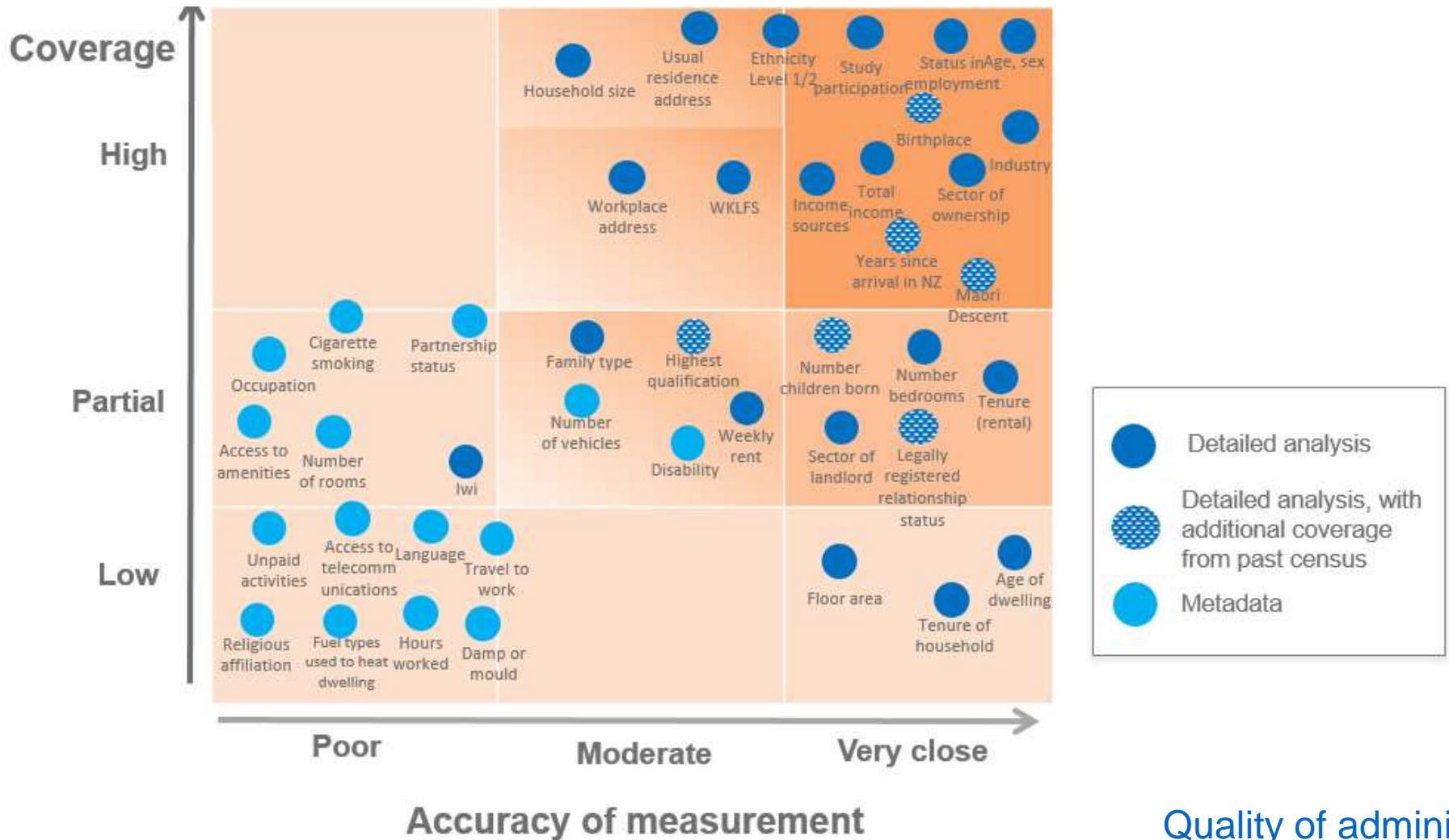
- **Include** all individuals with **activity** in admin data sources (eg tax and benefits, health, education) within the previous two years
- **Remove** individuals
 - who died before reference date
 - who migrated overseas before reference date



Admin data sources for individuals



Quality assessment of admin sources



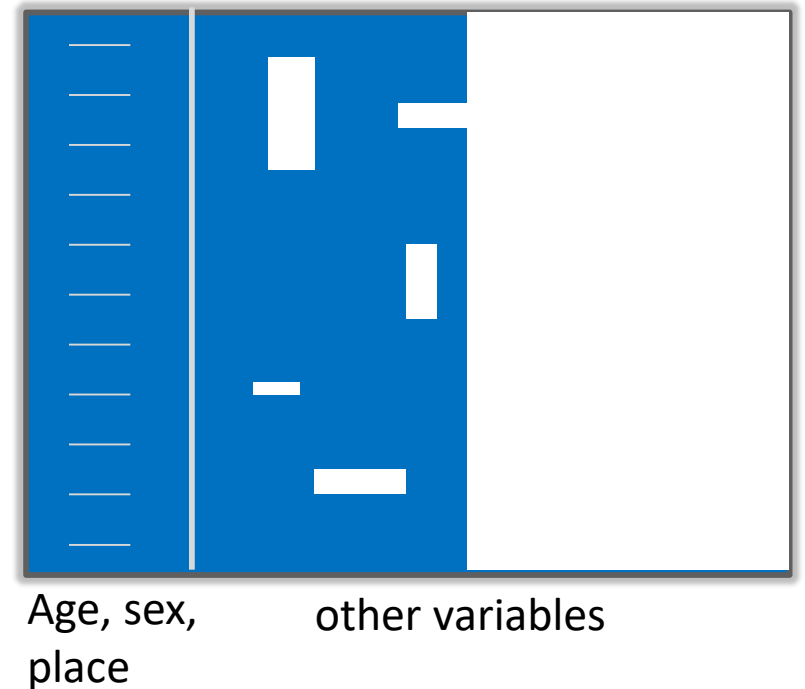
As at Nov 2020. Subject to change

[Quality of administrative data for census variables](#)

An experimental Administrative Population Census

- We already have key elements of an admin-based census
- APC first release August 2021:
 - population structure variables:
age, sex, geography, ethnicity, Māori descent, country of birth, years in NZ
 - annual time series 2006 – 2020
 - longitudinal data
- 2022 and 2023 will add more variables, eg *work, income, education*

Linked admin data



Future of census and administrative data

- **Short-medium term:** Use of administrative data in 2023 “Combined model by design” to fill gaps in field enumeration
- **Longer-term** roadmap due by 2024
- **Strong, active engagement with customers**
- 2007 UNECE paper - necessary conditions for an admin-based census supported by sample surveys
 - Legislation: new Data and Statistics Bill: on track, planned 2022
 - Legislation: Electoral Act amendments: under discussion
 - Public acceptance: trust and confidence work underway
 - Suitable admin data sources: most core variables; gaps for iwi, household membership
 - Population estimation models and coverage survey : likely, but not tested in practice
 - Large scale attribute survey: major development needed