Supporting Australia's 2021 Census with Administrative Data

ESCAP Stats Café Series April 2022

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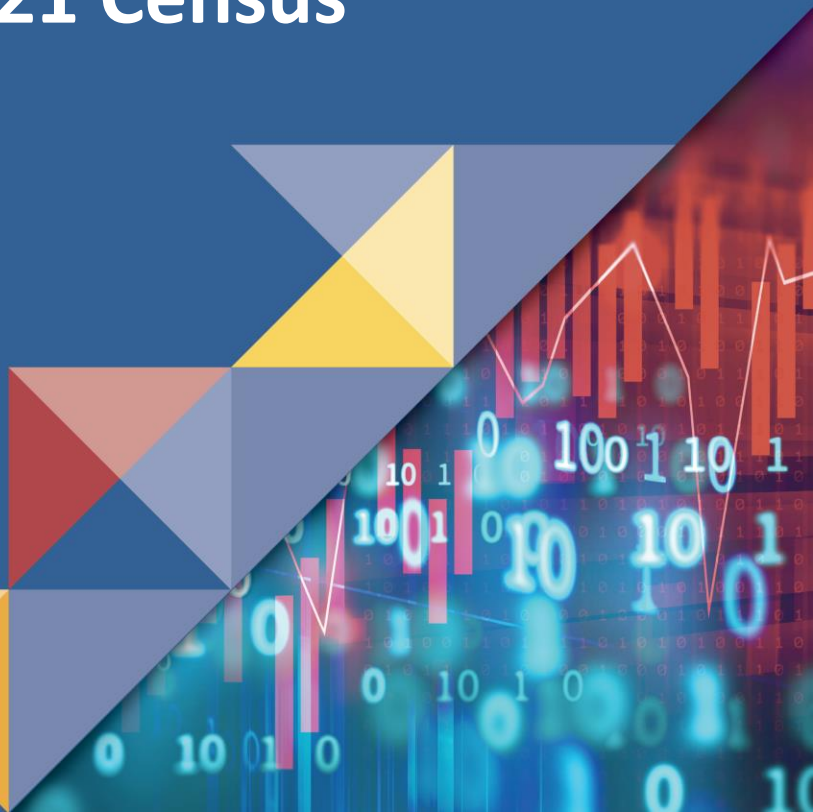
Australian Bureau of Statistics
Informing Australia's important decisions



Increasing use of administrative data to support the Australian Census

- The 2016 Australian Census was the first to be supported by a national **Address Register**. This improved operations and lowered costs significantly.

- The 2021 Australian Census is the first to be supported by national, integrated ***person*** **level administrative data**. This has significantly improved data quality outcomes.

- Administrative data currently plays an indirect, supportive role for the Australian Census. Many more benefits of this data remain to be explored for future Censuses.

Administrative data used for the 2021 Census

- Dwelling admin data:
  - Address Register
  - Electricity data (used at area level)
  - Rentals data
- Person admin data:
  - Data from the 'Multi Agency Data Integration Project', which is:
  - Combined persons on Health, Benefits and Tax Registers
  - Analytical data linked from many different admin sources

Administrative data used for the 2021 Census

Two admin data assets created to support the Census

Admin Population Asset

Based on MADIP, "scoped" to Census night population

Age, Sex, Location, Indigenous Status, Relationships, Country of Birth, Income, Previous locations…

Related by Address Register ID

Admin Dwelling Asset

Based on Address Register at Census time

Dwelling info, electricity usage, rental status, MADIP persons and characteristics…

How admin data supported the 2021 Census

Use in planning

Key benefit:
Help maximise Census response

Level of data used:
Area (mesh block)



Elements of use:
- ✓ Inform Aboriginal and Torres Strait Islander urban collection strategy
- ✓ Provide dwelling occupancy expectations to monitor response rates

Use in data processing

Key benefit:
Improve the Census count

Level of data used:
Dwelling and area level



Elements of use:
- ✓ Improve decision on whether dwellings are unoccupied
- ✓ Improve imputed counts of people for dwellings that don't respond
- ✓ Quality assurance of Census counts

Preparing a low response contingency

Key benefit:
Repair of Census data for unexpected response impacts



Level of data used:
Dwelling and person level



Elements of use:
- ✓ Data repair for areas affected by a natural disaster, pandemic lockdown etc
- ✓ Data repair for reduced response across the board or large-scale loss of data

Addressing privacy and public trust

- As part of 2021 Census development, conducted a privacy impact assessment on the use administrative data to support the Census

- To increase transparency and engender public trust, released a series of articles in the lead up to the Census

Use in planning

Help to maximise the Census response



Analyse 2016 response patterns by looking at admin characteristics of responding/non-responding dwellings



Inform the Aboriginal and Torres Strait Islander urban collection strategy



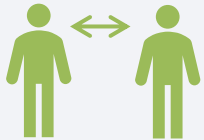
Provide dwelling occupancy expectations to help monitor response rates

Use in processing

Improving Census counts



Informing occupancy determination



Informing donor selection during imputation

Quality assurance



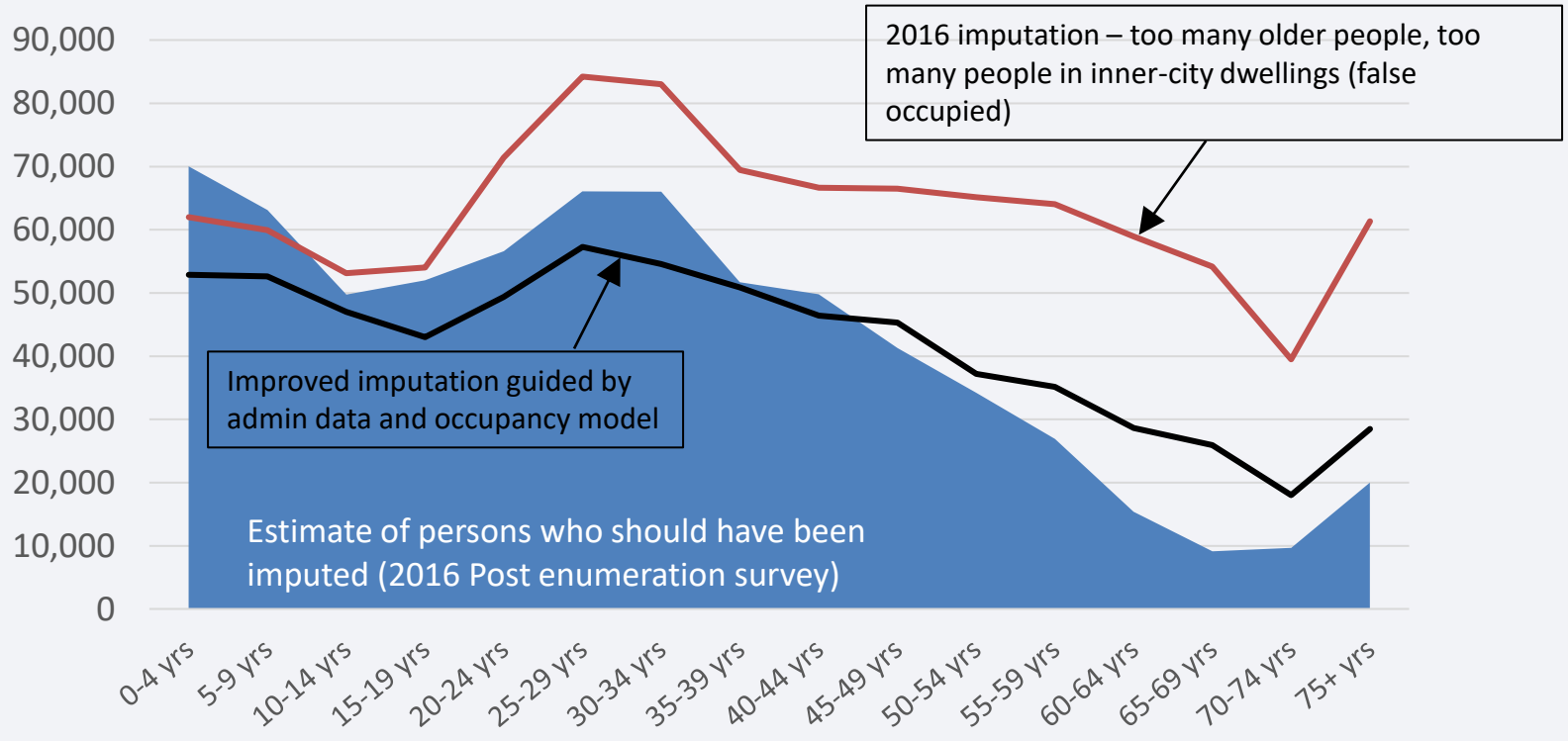
Comparing area-level counts for Census and admin data

Use in processing – dwelling occupancy model

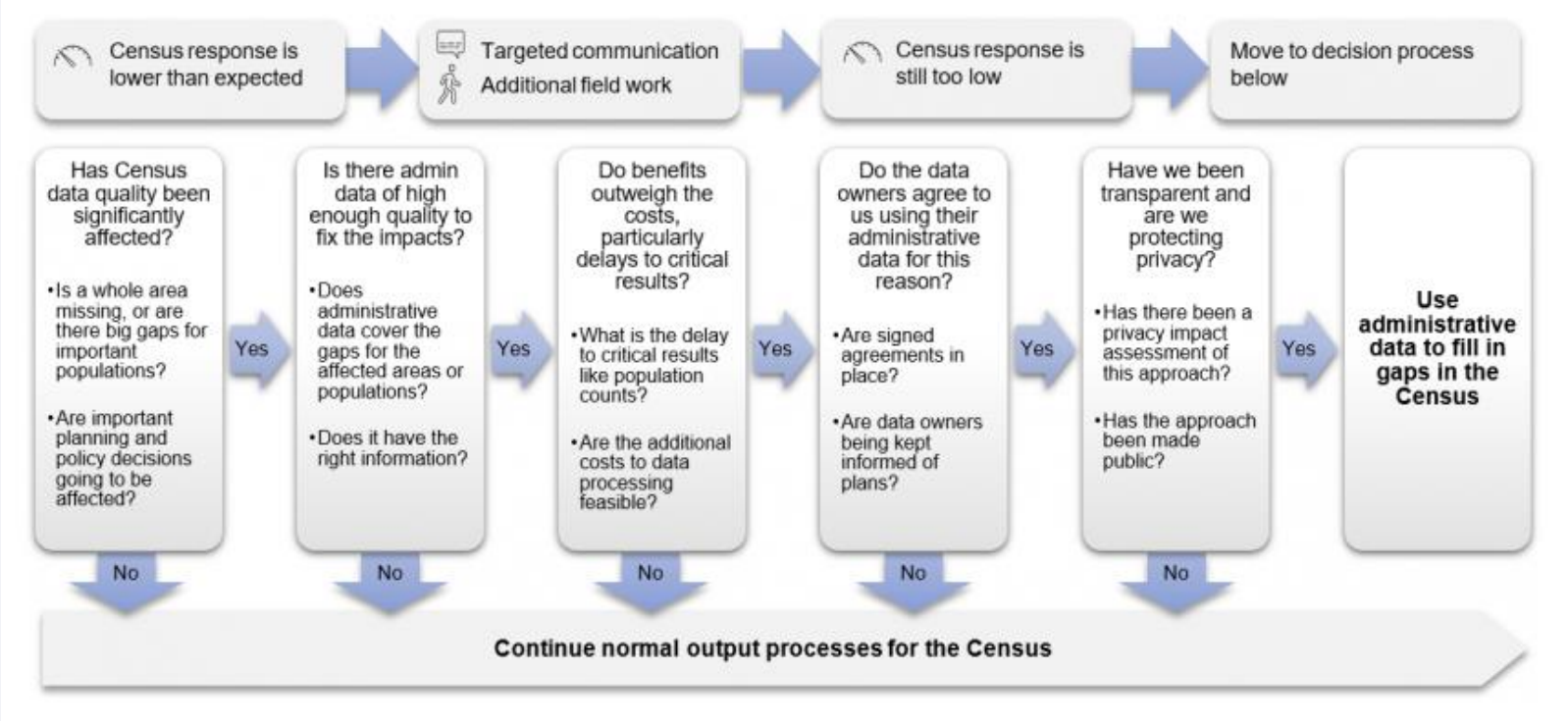
- Model to predict Census night dwelling occupancy – used a mix of dwelling and area level inputs

	Dwelling level inputs	Area level inputs
Data sources	• Medicare, Tax, Centrelink • Address Register	• Electricity usage (smart meter 30%, quarterly 70%) • Previous Census
Influential Information	• Dwelling receives benefits, child present • Listed rental vacancy • Dwelling structure	• Area occupancy rates derived from electricity usage • Previous Census occupancy rate

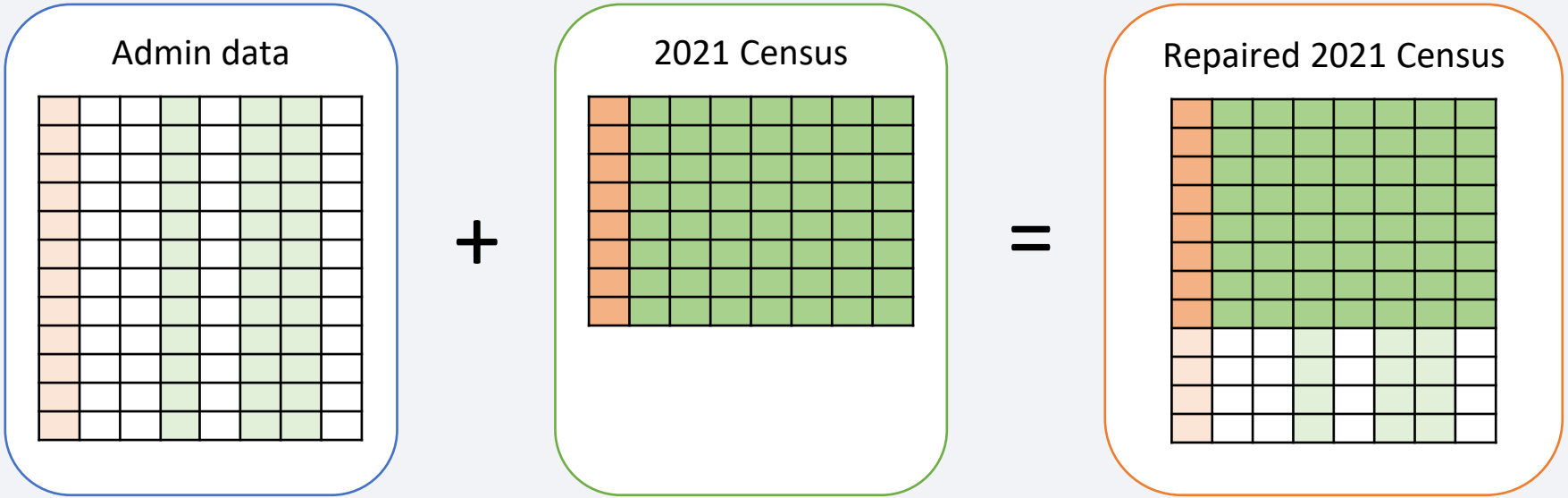
Use in processing – expected improvements to Census count from 2016 research



Preparing a low response contingency - proposed decision pathway



Preparing a low response contingency - proposed data repair approach



Preparing a low response contingency – demonstrating future potential

- 2021 response rates were very good – the contingency was not required!

- However, the preparations have begun demonstrating the potential of administrative data to support imputation and data repair in future Censuses

Australian Bureau of Statistics



Questions?