



## Survey methodology

For the Pilot Housing Survey, independent assessors visited 832 houses across the country, recording information on house condition and energy efficiency. A partnership between BRANZ and Stats NZ with co-funding from the Ministry of Business, Innovation and Employment (MBIE), the survey represents an important new approach to collecting robust data on New Zealand's housing stock.

BRANZ has conducted a House Condition Survey (HCS) roughly every 5 years since 1994, but beyond this there has been relatively little good data on the condition of New Zealand houses. In its 2009 review of housing statistics, Stats NZ identified housing quality as a key information gap in New Zealand's data system.

A 2015 Stats NZ scoping paper presented options for more robust housing quality data to help address this gap. An outcome of this was the development of new content for the 2018 Census and the 2018 General Social Survey (GSS). The GSS is a national survey of around 8,000 people conducted every 2 years on a range of wellbeing, social and economic issues. The 2018 GSS included a supplement on housing and the physical environment.

In 2018/19, BRANZ undertook to review its HCS and trial a new approach to collecting house condition data. This trial included developing new data collection and survey management tools (a mobile and web-based application) and partnering with Stats NZ to use its 2018 GSS to recruit participants.

Initially intended to be a small pilot survey of 50-100 houses, the survey's target was expanded to 800 houses following co-funding from MBIE. The target was achieved, with 832 surveys completed in 2018/19, enabling national estimates to be generated from the data. The Pilot Housing Survey (PHS) is the

largest national housing assessment survey of its type since 1937.

This Research Now describes the survey's development and methodology. For more information specifically about the survey findings on house condition, see BRANZ Research Now: Pilot Housing Survey #2 House condition. For information on findings about insulation and energy efficiency, see BRANZ Research Now: Pilot Housing Survey #3 Insulation, ventilation, space heating and water heating.

### Sample selection

Participants were recruited to the PHS through the Stats NZ 2018 GSS. All 2018 GSS households were asked if they would be willing to take part in the new survey, with the incentive of a supermarket voucher. Approximately 46% of households agreed to their contact details being passed to BRANZ. As uptake exceeded the overall survey target of 800, Stats NZ drew a sample each month for transferring to BRANZ. Of those that were passed to BRANZ, 832 went on to complete the housing assessment survey.

Of the total final achieved sample, 505 (60.7%) were owner-occupiers and 327 (39.3%) lived in rented homes. The spread of respondents by region is shown in Table 1.

Response to the recruitment question has been recorded as part of the final GSS dataset, enabling analysis of consent rates by population subgroups. This had not been possible with the BRANZ HCS, which has typically relied on calling to recruit participants (with no information recorded on those who declined). The new data allows understanding of the likelihood of different household types/individuals taking part in a survey of this nature. This can help inform future survey work, providing insight into household types who may be harder to reach and require different approaches to recruitment.

**Respondent characteristics**

Stats NZ explored consent rates by a range of variables, including tenure, family type, household income, length of time at address, occupant perception of house condition, crowding and self-reported damp, mould and cold.

Owner-occupied households were significantly more likely to agree compared to people in rental homes (51% versus 37%). Households not in a family nucleus were less likely to agree,

both compared to those in a family nucleus and the general population. This effect remained even when examined by tenure, showing it is not just an attribute of tenanted households being more likely to live in non-family groups.

Households who considered their home in no need of repair or maintenance were less likely to agree compared to the general population and all other repair/maintenance subgroups.

There were also significant differences by crowding (although this appears mostly explained by ethnicity). There was no significant difference in the consent rates by self-reported damp, mould and cold, household income and years at address.

Stats NZ also explored consent rates for subgroups of households where the respondent participating in the PHS was also the main GSS respondent. This included analysis by ethnicity, migrant status, generalised trust, sex, material hardship, highest qualification, labour force status, income sufficiency and age band. Females, Europeans and Māori, non-migrants, those with high general trust and those with severe material hardship were more likely to agree to be contacted about taking part in the PHS (Figure 1). There were no significant differences in consent rates by highest qualification, labour force status, age band or income sufficiency of main respondent.

**Understanding potential bias**

Further work compared some key socio-demographic characteristics of the GSS to the final (weighted) PHS dataset. Where differences in consent rates did exist (such as those described above), many have largely been corrected for by the post-sampling weights applied. While part of the correction is down to the larger sample errors in the PHS compared to the GSS due to the reduced sample size in the former, the effects observed also highlight the importance of applying appropriate weights and explicit benchmarking.

**Survey content development and design**

The BRANZ 2015 HCS was the starting point for developing content for the new survey. The HCS is very detailed and typically takes around 2-3 hours on site. For the PHS, some data collection processes were reduced or compressed to reduce participant burden and test the information that could be recorded within 1 hour on average. For example, for roofs, condition and defects were recorded based on what inspectors could see from ground level. Subfloor and roof space assessments were based on what was visible from the access hatch. Survey content priorities were identified in collaboration with MBIE, Stats NZ, EECA and BRANZ.

Table 1 Sample count by region

REGION	SURVEY COUNT
Auckland	122
Bay of Plenty	65
Canterbury	145
Gisborne	32
Hawke's Bay	25
Manawatu-Wanganui	92
Marlborough	9
Nelson	9
Northland	31
Otago	53
Southland	27
Taranaki	22
Tasman	14
Waikato	85
Wellington	98
West Coast	3
<b>Total</b>	<b>832</b>

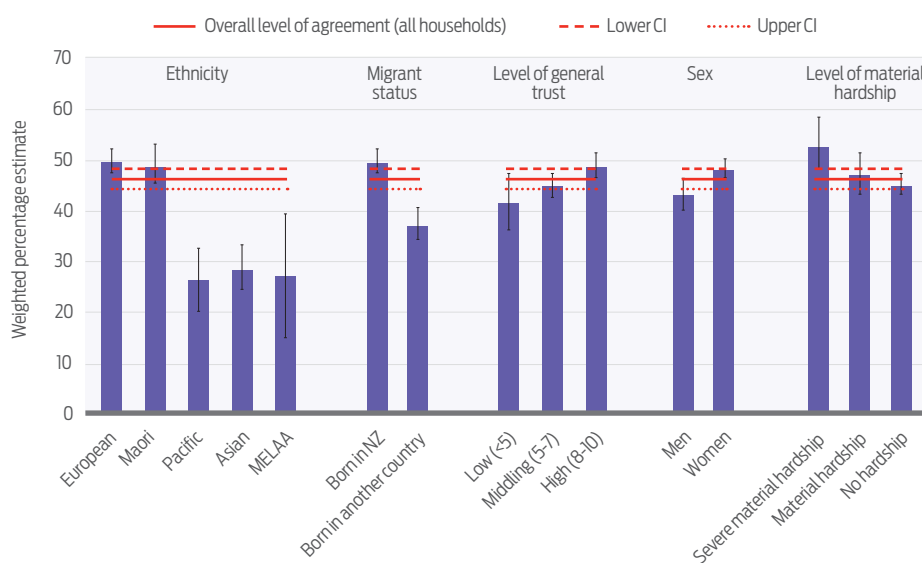


Figure 1 Rates of consent for households where the respondent who consented to participate in the PHS was also the main GSS respondent, by subgroup. Error bars show 95% confidence interval, CI.

## Survey management and data collection

The PHS developed new digital data collection and survey management tools not previously used in the BRANZ HCS, which had typically relied on paper forms.

A bespoke web-based survey management application and mobile app were developed, using an existing prototype application developed by Land Information New Zealand (LINZ). The LINZ application was modified and adapted to provide functionality and content required for the PHS.

Providers contracted to carry out the assessments were trained by BRANZ. Training topics included:

- health and safety
- ethics and code of conduct
- cultural awareness and sensitivity
- how to use the survey management and data collection tools
- how to complete the survey (for example, condition assessment criteria, identifying different materials).

Detailed manuals were developed for each role. All assessors were required to complete a 2-day training course to BRANZ's satisfaction before being contracted to undertake surveys. Training included classroom work (presentations, tasks and discussion) and fieldwork. All assessors had to complete at least two mock housing surveys.

Figure 2 shows an overview of the delivery process. BRANZ appointed a national survey coordinator to oversee day-to-day delivery. This included monitoring progress (ensuring participants were being contacted within the required timeframe from allocation), supporting assessors in the field, managing the survey participant helpline and quality assurance of completed surveys. The latter was facilitated by the web-based survey application, through which uploaded surveys (including dwelling photos) could be reviewed in real time. On completion of data collection, further data cleaning, coding and final quality assurance was completed by BRANZ.

The resulting PHS dataset was provided to Stats NZ and has been linked to the GSS data subset. This linked (GSS-PHS) dataset is available in the Stats NZ Data Lab. The Data Lab provides a secure and controlled environment through which researchers can access microdata.

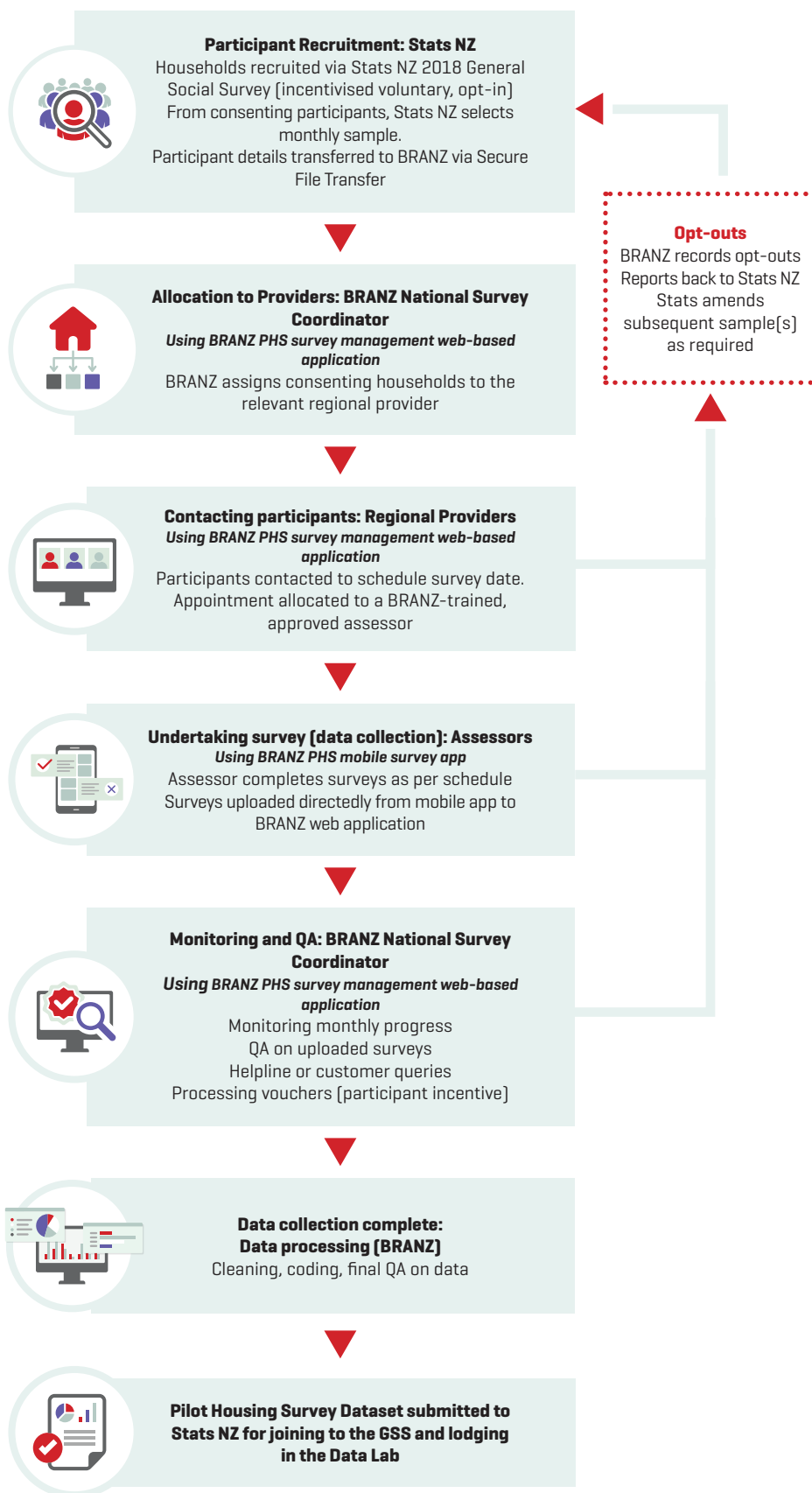


Figure 2 Overview of the delivery process.

### Dwelling characteristics

As well as recording data on house condition and energy efficiency (see Pilot Housing Survey #1 and #2), the PHS also recorded information on built form (whether the dwelling was joined or stand-alone and number of storeys), typology, size (approximate total floor area) and number of bedrooms.

Owner-occupied dwellings were more likely to be larger and newer stand-alone houses, while rented houses were more likely to be smaller, older and multi-unit/joined dwellings:

- 35% of rented homes were joined dwellings compared to 6% of owner-occupier stock (Figure 3).
- 42% of rented homes were less than 100 m<sup>2</sup> approximately, while 19% of owner-occupied dwellings were 150 m<sup>2</sup> or larger.
- 40% of rental homes had one or two bedrooms, while 37% of owner-occupied dwellings had four or more (Figure 4).
- Owner-occupied dwellings were more likely to be newer, with 26% built after 1996 compared to 9% of rental homes. A higher

proportion of rentals occupied housing from the 1960s-80s (17% compared to 3% for owner-occupiers).

### Conclusion

A detailed review was conducted post-pilot with all agencies and providers, capturing and documenting learning from the pilot. Of note were the benefits of using a digital data collection and survey management tool for the efficiencies and robustness it provided.

The value of collaboration - the partnership with Stats and MBIE in co-designing and delivering the project - is also noted as critical to the project's success.

While the survey findings held comparatively few surprises - many results are similar to those from the most recent BRANZ House Condition Survey - this is a positive outcome in itself. Consistency in results upholds confidence in the robustness of methods and data.

There is significant scope to expand on the initial data analysis completed - for example, to explore condition by materials or dwelling

typology/age (subject to sample size). The linked PHS-GSS data, available in the Stats NZ Data Lab, provides a new, accessible resource on housing and wellbeing. Analysis of this linked dataset is still in the early stages, hence the full value-add of this project is perhaps yet to be realised.

The partnership with Stats NZ and the GSS proved highly successful in terms of overcoming recruitment barriers and providing a far richer dataset. This is a model BRANZ is already looking to replicate in other research.

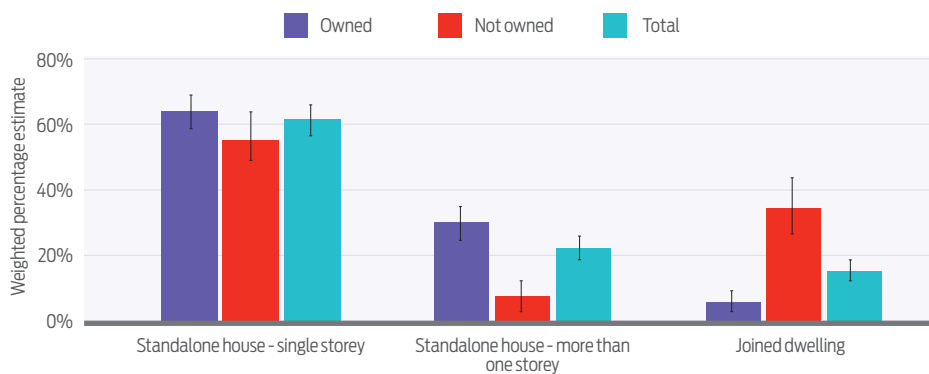


Figure 3 Building type by tenure and overall

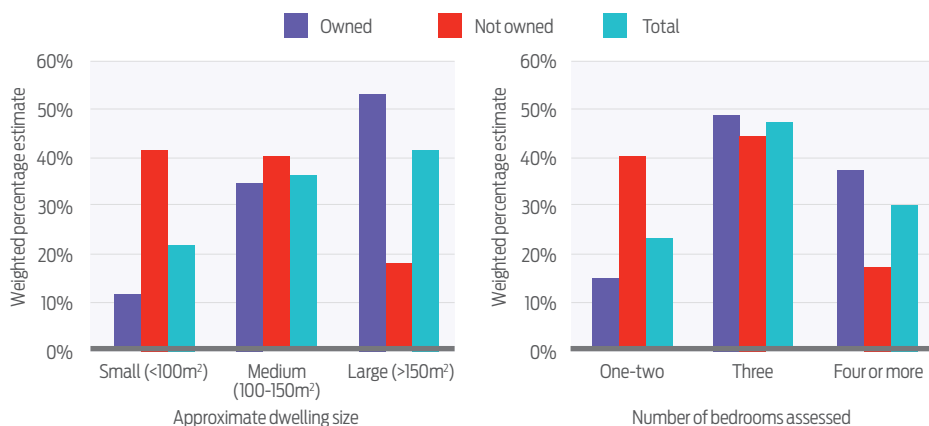


Figure 4 Approximate dwelling size and number of bedrooms by tenure and overall

## More information

Pilot Housing Survey #2 *House condition*  
 Pilot Housing Survey #3 *Insulation, ventilation, space heating and water heating*

### BRANZ study reports

These can be downloaded from [www.branz.co.nz](http://www.branz.co.nz)  
 SR456 *Assessing the condition of New Zealand housing: survey methods and findings (2020)*  
 SR370 *BRANZ 2015 House Condition Survey: Comparison of house condition by tenure (2017)*  
 SR372 *Warm, dry, healthy? Insights from the 2015 House Condition Survey (2017)*

### BRANZ websites

[www.branz.co.nz/](http://www.branz.co.nz/)  
[healthy-homes-research/hcs/](http://healthy-homes-research/hcs/)  
[www.level.org.nz](http://www.level.org.nz)  
[www.renovate.org.nz](http://www.renovate.org.nz)

### Stats NZ website

[www.stats.govt.nz/](http://www.stats.govt.nz/)  
[information-releases/wellbeing-statistics-2018](http://information-releases/wellbeing-statistics-2018)  
[www.stats.govt.nz/integrated-data/apply-to-use-microdata-for-research/](http://www.stats.govt.nz/integrated-data/apply-to-use-microdata-for-research/)  
[www.stats.govt.nz/reports/housing-in-aotearoa-2020](http://www.stats.govt.nz/reports/housing-in-aotearoa-2020)