BRANZ 2015 House Condition Survey: Comparison of house condition by tenure

Vicki White, Mark Jones, Vicki Cowan and Saera Chun

1222 Moonshine Rd
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240
New Zealand
branz.nz

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Preface

This report presents some results from the 2015 BRANZ House Condition Survey. The analysis focuses on comparing house condition between the two tenures (owner-occupied and rented).

Acknowledgements

BRANZ 2015 House Condition Survey: Comparison of house condition by tenure

BRANZ Study Report SR370

Authors

Vicki White, Mark Jones, Vicki Cowan and Saera Chun

Reference

Abstract

The BRANZ House Condition Survey (HCS) provides a snapshot of the state of New Zealand housing at a point in time. The latest round of the survey, completed in 2015/16 (referred to as the 2015 HCS), represents the fifth in a series, undertaken roughly every 5 years since 1994. The 2015 HCS surveyed 560 houses throughout New Zealand. This report provides a comparison of the condition of owner-occupied and rental houses and highlight defects commonly affecting New Zealand houses.

Results from the 2015 HCS show that the rental housing stock is typically in poorer condition than owner-occupied houses. This was evident in the assessment of both interior and exterior property features, although there was some variation in the extent of difference for different building components. The difference was greatest for interior linings and fittings and exterior doors and windows, while there was less divergence in the condition of other exterior features. The assessor's rating of overall level of property maintenance provided further evidence of owner-occupied properties being better maintained than rentals. Overall, rental properties were around twice as likely to be rated 'poorly maintained' by the assessor compared to owner-occupied houses.

The poorer condition of rented properties was also evident in the presence of mould inside the home. Mould is a key indicator of overall indoor air quality and potentially harmful to the health of household occupants. Mould was visible to some extent in around half of all houses surveyed, with a slightly higher prevalence in rental properties.

The gap between the owner-occupied and rental properties was evidenced in the 2010 HCS, the first time the BRANZ HCS included rental properties. The results presented in this report therefore show that this pattern remains. Results have been presented to give an indication of which property components are typically in poorer condition and defects associated with these. Further analysis is needed to explore other factors affecting house condition and the extent of any shift in condition and repairs and maintenance from 2010 to 2015.

Keywords

House Condition Survey, tenure, owner-occupied, rented, repairs, maintenance.

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1.   Introduction

1.1   Background

The BRANZ House Condition Survey (HCS) has been carried out every 5 years since 1994, with the latest round of surveying completed in 2015/16. The BRANZ HCS provides insights into the status of New Zealand's housing stock, including assessments of the condition of different features of the house, the types of materials used in construction, the presence of heating and ventilation and building component defects.

The HCS has evolved over the years to broaden its coverage, both geographically and in scope (in terms of information collected and number and types of houses surveyed). The 1994, 1999 and 2005 surveys included predominantly only owner-occupied houses in main urban areas, largely Auckland, Wellington and Christchurch. The 2010 and 2015 House Condition Surveys were extended to include rented properties, and the sample was broadened to nationwide coverage to include houses in provincial and rural areas. The HCS is, at present, still limited to stand-alone townhouse or terraced houses/units (i.e. apartments are not included).

The aim of the HCS is to develop a reliable information base, offering insight into the condition of the national housing stock and the underlying maintenance, materials trends and issues affecting New Zealand housing. The HCS does not revisit the same houses each time. Rather, it aims to capture a representative sample of stock at a point in time.

1.2   The 2015 House Condition Survey

The 2015 BRANZ House Condition Survey incorporated three survey tools:

- **Telephone interview with a household occupant**
  The purpose of this part of the survey was to collect information on maintenance and repair work undertaken by the householder. It also collected some key socio-demographic information about the household occupants and explored householder perceptions of house condition. This aspect of the HCS was managed by CRESA, with telephone interviews undertaken by an external consultancy (Research NZ).
- **Self-completion householder questionnaire on appliance use**
  This survey was new to the 2015 HCS. Commissioned by EECA, this self-completion paper survey collected information about the presence and use of different appliances in the home, including lighting, heating and electronic products.
- **On-site physical house assessment**
  This is the main tool for collecting detailed information about the condition of houses. The survey is completed by a trained assessor through an on-site home visit. This component of the HCS was managed by BRANZ, with the actual house assessments (data collection) undertaken by teams of surveyors throughout the country (trained and coordinated by the HCS national coordinator).

1.3   Report scope

Section 2 of this report gives a brief overview of the sampling frame used for the 2015 HCS, with further details provided in Appendix A.

Section 3 then presents a brief overview of some key socio-demographic characteristics of the houses sampled in the 2015 HCS. This is important for understanding any bias in the sample.

The proceeding sections then present some key findings on the condition of owner-occupied houses compared to the rental stock.

The volume of data collected in the HCS is extensive, especially when all three sources (the physical house assessment survey, the householder telephone interview and the appliance use questionnaire) are combined. The focus of this report is on results from the physical house assessment and specifically on data that directly and explicitly describes the condition of the house. This includes:

- reporting on the condition ratings of different property components and defects reported with these components
- reporting on the presence of mould and other indicators of damp
- an overall assessment of level of maintenance.

Additional analysis to explore other themes in more detail, such as heating and the thermal envelope, will be undertaken and reported separately.

2.   Survey sampling and recruitment

2.1   Sample structure

The sample structure for the 2015 House Condition Survey was designed to capture a representative sample of owner-occupied and rental properties throughout New Zealand. The sampling approach, which followed that used in the 2010 HCS (Buckett, Jones & Marston, 2012), involved dividing the country into 13 parts or strata, 11 of which corresponded to cities, with the remaining two strata being the rest of the North Island and the rest of the South Island (Figure 1). Samples (550 in total) were divided amongst these strata in proportion to the number of houses recorded in the 2013 Census of Population and Dwellings (see Table 9 in Appendix B).

The 2015 HCS also included an extended sample of houses to be surveyed in Christchurch. This additional sample was funded by the Ministry of Business, Innovation and Employment to provide some insights into the impact of repairs undertaken since the 2010/11 earthquakes. The extended Christchurch sample had a target survey quota of 104 houses to bring the total number of houses surveyed in Christchurch to 150 (46 were part of the mainstream HCS sample, as shown in Table 9.)

Combining the mainstream HCS sample and the additional Christchurch sample generated a total target sample quota for the 2015 HCS of 654 houses (550 in the mainstream HCS sample plus 104 in the additional Christchurch sample).

Figure 1. Location points for surveying in the 2015 House Condition Survey. (Source: HCS 2015 and Google Maps)

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2.1.1 Sampling within strata

The 11 strata corresponding to the cities were sampled using simple random sampling. The two remaining strata (the rest of the North Island and the rest of the South Island) were sampled in clusters, with 69 clusters selected at random and each cluster being a Census area unit as defined at the 2013 Census. Within each selected cluster, four houses were selected by simple random sampling, with the constraint that between one and three were required to be rental houses. An unbiased random rounding method was adopted.

The sample was designed to generate a self-weighting sample representing New Zealand owner-occupied and rented houses, with an overall sample error of ±5% at a 95% confidence interval.

2.2 Recruitment and post-sampling weighting

Houses were recruited to the 2015 HCS via telephone (landline). Whilst this method successfully secured most of the target sample of houses, the complete target quota could not be fulfilled within the surveying timeframe. A total of 560 houses were surveyed, which included 411 owned and 149 rentals (Table 1).

Had the sample quota been achieved as per design, it would have been self-weighting (as it was designed specifically to be representative of the owner-occupied and rental stock). However, due to some under-recruitment, of the rental stock in particular, the sample has instead been weighted to maintain representativeness.

Unless otherwise specified (for example, where the question has a valid set of N/A responses), all results presented in this report are based on the surveyed sample of 560 houses, weighted to represent 65% and 35% owner-occupied and rented houses respectively. The sample sizes, sampling errors and weighted counts are shown below (Table 1). All analysis was undertaken using weighted data. Further details on the sampling and weighting process are provided in Appendix B.

Table 1. Sample errors for the owner-occupied and tenant-occupied houses surveyed and used for analysis in this report. (Source: HCS 2015)

Sample used for analysis	Owned	Rented	Total
Surveyed houses[1]	411	149	560
Precision	±6.1%	±10.8%	±5.5%
Weighted count[2]	1,011,121	550,652	1,561,773

1. Total number of houses surveyed.
2. Count of houses in the sample with the weighting applied. All analysis is undertaken using weighted data.

2.3 The survey process

Recruitment of households to the 2015 House Condition Survey was undertaken via a telephone survey, which began in September 2015, with the first site visits scheduled in the same month. Recruitment formally ended in May 2016, and the final house was surveyed at the beginning of June 2016.

Once households agreed to participate in the survey, they completed the householder telephone interview and were subsequently contacted to arrange a visit for the on-site

house assessment. At this point, they completed the self-completion appliance-use survey. Households who completed all three surveys were provided with a $50 fuel or supermarket voucher in recognition of their assistance and were entered into a prize draw to win one of two iPads.

The house assessment

A site visit was scheduled with the householder for an assessor to undertake the physical house assessment. Assessors undertaking the HCS were largely from the building sector (worked in/had experience in building-related employment) and therefore already had a base level of knowledge and understanding. In addition, all assessors completed training with instruction on how to undertake the assessment (completing the form, engaging and communicating with the householder). This included discussion of some key technical components of the survey to help ensure common understanding and clarity. All assessors then completed at least one home assessment with the trainer present.

3. The houses and their occupants

This section presents some key socio-demographic information about the 2015 HCS households based on data collected as part of the telephone interview with a household occupant. The tenure, household size and income profile of HCS participants are compared with the national population using 2013 Census data. Additional information that may have a bearing on house condition, namely frequency of moving house and age of dwelling, are also shown.

3.1 Comparison of HCS households with Census data

3.1.1 Tenure

Table 2 shows the tenure of New Zealand households (as at the 2013 Census) compared to the HCS participants. It should be noted that the HCS was intentionally sampled and weighted to represent the owner-occupied and rental housing stock in 2015, hence these proportions closely align.

Within the owner-occupied sector, the HCS has an over-representation of mortgage-free owners compared to the national profile. This outcome relates to a tendency towards to an older age demographic in the owner-occupied group, which in turn is likely a reflection of the types of households more able and willing to participate in a survey of this nature (retired, at home during the day).

Within the rental sector, the HCS under-represents private sector renters and over-represents Housing New Zealand tenants compared to the national profile. This outcome is at least in part related to the difficulty in recruiting and obtaining access to private rental properties.

Table 2. Tenure characteristics of households in the 2015 HCS compared to the national housing stock. (Source: BRANZ HCS 2015 householder telephone interview and Statistics New Zealand, 2014a)

Tenure Characteristics	HCS Households		% New Zealand Dwellings (2013 Census)	
Tenure group				
Owner Occupied		65%		65%
Not owned		35%		35%
Mortgage Status	% of owner-occupied HCS group		% of owner-occupied NZ dwellings	
With a Mortgage		38%		52%
Without a Mortgage		58%		44%
Other owner-occupied		4%		4%
Sector of Landlord	% of rented HCS group		% of rented NZ dwellings	
Private Landlord*		77%		84%
HNZC		20%		12%
Territorial authority		2%		3%
Other		1%		1%

* Includes renting from family members.

3.1.2   Household size

Figure 2(A) shows that the size of households (number of occupants) in the HCS sample is reasonably aligned with the national profile (Census 2013). Smaller (1–2 person) households were more common amongst the owner-occupied subset of the HCS sample, while the rental sample had a higher proportion of larger households (Figure 2(B)). The composition of these larger rented houses is mainly couples with children, single parents with children and extended family households.
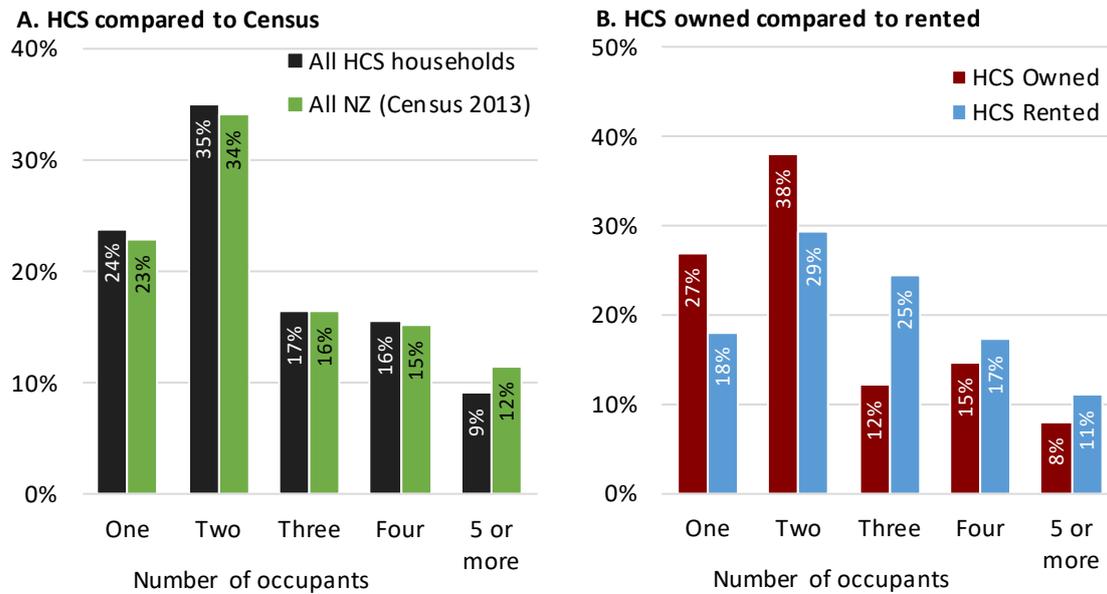
Figure 2. (A) Size (number of occupants) of HCS households compared to the national housing stock and (B) owned compared to rented in the HCS sample. (Source: HCS 2015 and Statistics New Zealand, 2014b)

3.1.3   Income

Figure 3 compares the annual income of New Zealand households, as at the 2013 Census, with those of HCS dwellings. The latter recorded the combined gross (before tax) income of the householder answering the telephone interview (anyone aged 18 or over in the house) and, if applicable, their partner living at the same address. This does not therefore necessarily represent total household income. For example, where there is more than one wage earner in the house but occupants are not partners, the total household income will be underestimated. It should also be noted that 14% of HCS households did not know or refused to disclose income data.

Figure 3 shows the $30,000–100,000 annual income bracket is reasonably well represented, but there is under-representation of high-income households and over-representation of lower-income households in the HCS compared with the national profile. This may relate to the age and occupancy profile of HCS households (higher proportion of one and two-person households and older age demographic among HCS participants, as discussed above). This will also be due to different definitions of 'household income' in the HCS and the Census.
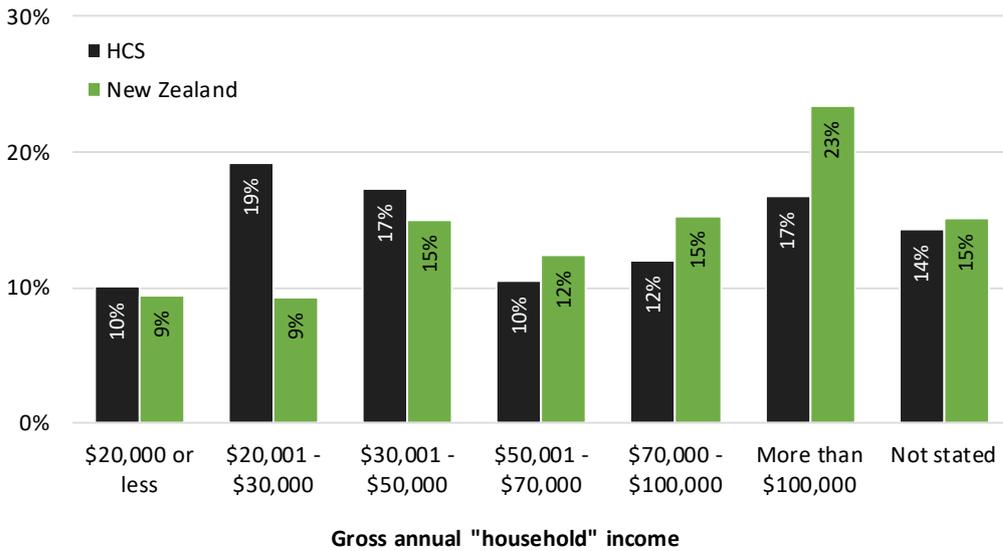
Figure 3. Income of HCS households compared to the national profile. (Source: HCS 2015 telephone survey and Statistics New Zealand, 2014c)

3.2   Length of residence and intention to move

The frequency of moving house is higher in the rental sector, as shown in Figure 4. Nearly 75% of owner-occupiers surveyed had been living in their home for more than 7 years, compared to just under 40% of renters. Moving house could affect householders' ability and willingness to undertake repairs and maintenance (and therefore the condition of the house). For example, it could be a trigger point for owner-occupiers looking to sell their property, or an opportunity for buyers to undertake work before moving furniture in. For a landlord, a change of tenants could present a convenient opportunity (undertaking work while the property is temporarily unoccupied), or may limit motivation and opportunity, particularly where demand is high. Further analysis of the HCS will explore this area in more detail, looking at frequency of moving house and other factors alongside reported repairs and maintenance and house condition.
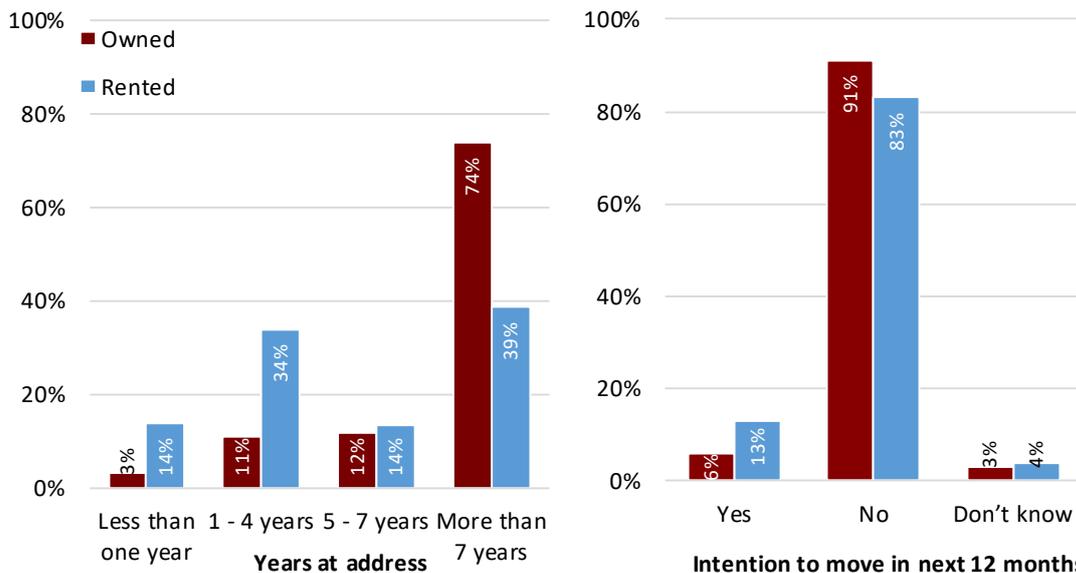
Figure 4. Duration of residence at address and intention to move within the next 12 months. (Source: HCS 2015 telephone interview)

3.3 Housing stock age profile

The year of construction or age of the house was recorded by the surveyor as part of the on-site house assessment. Figure 5 suggests the rental housing stock tends to be older than the owner-occupied sector, with a higher proportion of the latter built since the 1980s. Churn in the housing stock (changes of tenancy – an owner-occupied house changing to rental or vice versa) means that this profile is subject to change over time.
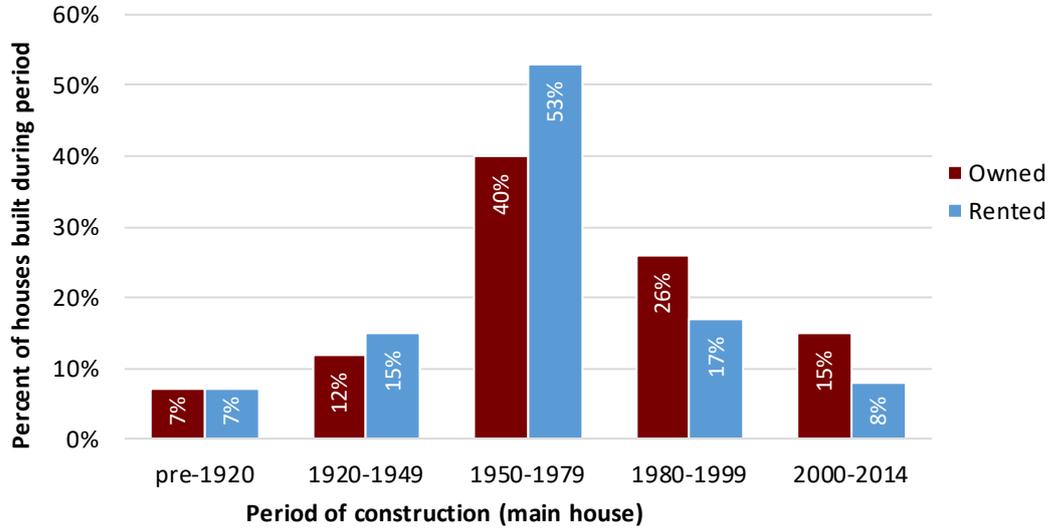
Figure 5. Period of construction of main house (excluding extensions) by tenure type. (Source: HCS 2015)

4.   Overall house condition

4.1   House condition ratings

The BRANZ House Condition Survey records the condition of all rooms in the house and many individual components. Condition is rated on a qualitative scale from serious to excellent (Table 3). In total, the survey asks for a condition rating of up to 45 features of the house. However, not all will be relevant to all dwellings – for example, if the feature is not present, such as decks or stairs. Some may not be possible to record due to lack of access (such as a subfloor or roof space).

Table 3. Condition rating scale used in the BRANZ House Condition Survey.

Condition rating	Description
Serious (1)	Health and safety implications; needs immediate attention
Poor (2)	Needs attention within next 3 months
Moderate (3)	Will need attention within the next 2 years
Good (4)	Very few defects; near-new condition
Excellent (5)	No defects; as-new condition

4.1.1   Deriving an overall house condition rating

Analysis of the 2010 HCS (Buckett, Jones & Marston, 2012) presented an 'overall' house condition rating derived from the individual condition ratings recorded for all components of the house. This derived measure applied a scale of 1–5 to the condition ratings (excellent being 5, serious being 1) and took the average of all ratings recorded for a dwelling.

Whilst simple and transparent, this approach assumes that:

- the difference between each condition rating is equal (i.e. excellent to good is the same as the difference between serious and poor)
- all components of the house are equally important to the dwelling's overall condition (for example, the condition of the cooker contributes the same to the house's overall state as the condition of the roof).

The inherent limitations and weaknesses of this method for allocating houses an overall condition rating are fully acknowledged and recognised. As part of the process of analysing the 2015 HCS data, BRANZ has begun to explore different methods for deriving an overall house condition score from HCS survey data. This work is still in progress, however, and in the interim, in the absence of an advanced approach, the 2010 'overall average' method has been applied to the 2015 HCS data.

It should be emphasised that the derived overall condition rating does not represent a pass/fail at a household level. Rather, it is intended to give an overall indication of the condition of New Zealand's housing.

4.2   Overall average house condition rating

Figure 6 shows the overall average house condition rating for owner-occupied and rented houses. This is derived from the average of all components assessed for each house and rounded to align with a category on the qualitative rating scale. For example, a house with an average of 3.7 would round up to 4 to become good.

The results suggest that on average the rental housing stock is in poorer condition than the owner-occupied sector. Around half (49%) of rental properties had an average condition rating of moderate overall, compared to one third (33%) of owner-occupied houses (Figure 6). Moderate condition in the context of the HCS means the house will need attention within the next 2 years.

Only around 1% of houses had an overall average condition rating of poor (needs attention within the next 3 months). However, that is not to say that this few houses have components in poor condition. Rather, it is a by-product of averaging the condition rating across the whole house, which has a 'watering down' effect, with extreme values balancing out. The overall average condition score gives an indication of how the two tenures compare. However, it tells us little about the potential quality and health and safety issues that may be evident in some areas of the home. Sections 5 and 6 of this report look in more detail at the condition of individual features of the house.
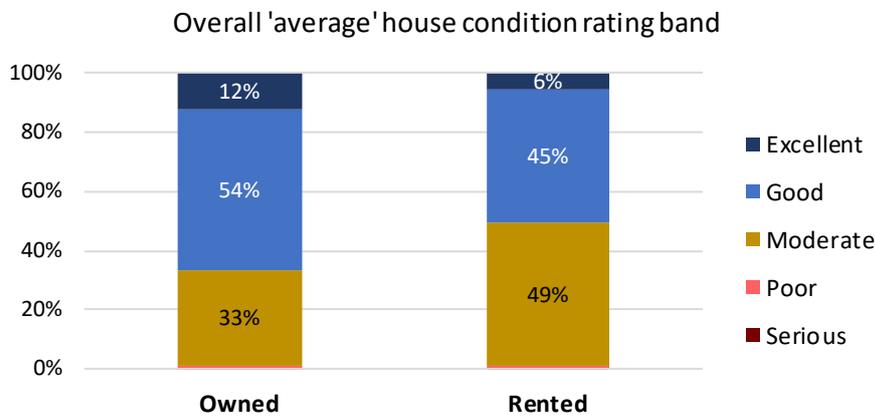
Figure 6. Overall average house condition ratings banded, by tenure type. (Source: HCS 2015. Percentage sum errors due to rounding)

4.3   Occupant perceptions of house condition

The telephone survey part of the HCS asks householders to rate the overall condition of their home (considering both the exterior and interior) at the time they moved in and at present. A qualitative rating of condition was used (Table 4), similar but not identical to that used in the physical house assessment. In particular, the definition of excellent on the perceived condition scale could be considered less stretching (more achievable) than the surveyor's condition rating scale, which requires features to be in as-new condition.

Table 4. Qualitative rating scale used to record occupant perceptions of house condition when they first moved in and at present. (Source: HCS householder interview 2015)

Occupant perceived condition rating	Description
Very poor	Extensive and immediate repair and maintenance needed
Poor	Immediate repair and maintenance needed
Average	Some repair and maintenance needed
Good	Minor maintenance needed
Excellent	No immediate repair or maintenance needed

4.3.1   Occupant perceptions of house condition over time

Figure 7A shows owner-occupied householders tended to rate the condition of their home to be better now, in its current state, compared to when they first moved in, more so than tenants (Figure 7B). For owner-occupiers, there is a notable shift from a perceived condition rating of average when they first moved in to good in its current state. There is little movement in the proportion perceived as excellent.

Perceptions of house condition in the rental sector show less change from when tenants first moved in to now. This could be related to the shorter tenure in rental properties (see Figure 4) and the onus being on the landlord to make improvements (reliance on landlords).
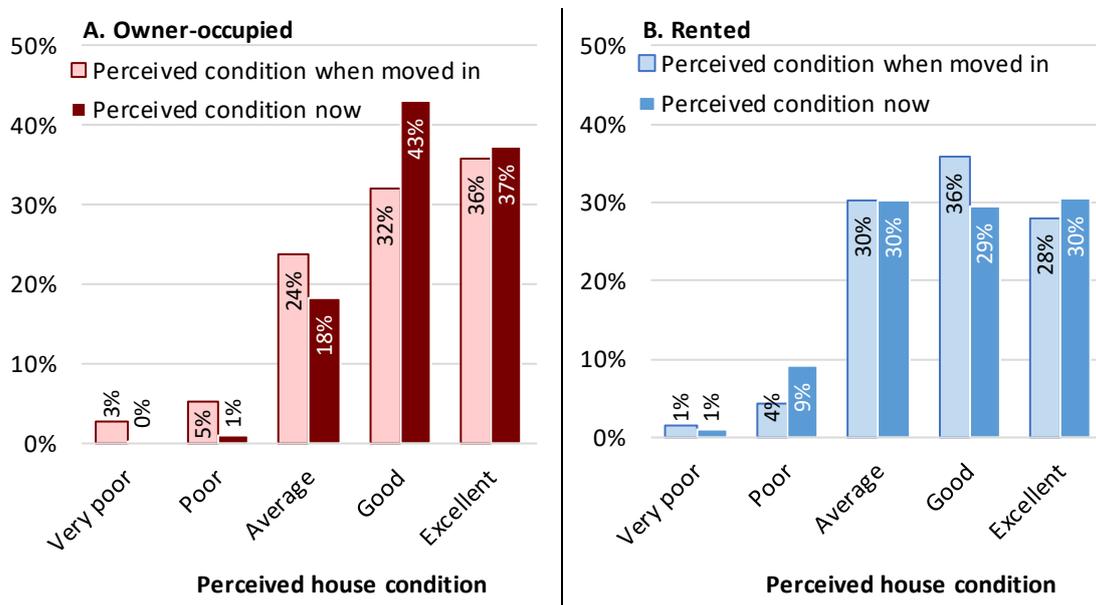
Figure 7. Occupant perception of the condition of their home when they first moved in and in its current state, split by tenure. (Source: HCS 2015 householder interview)

4.3.2   Owner-occupied versus tenant perceptions of house condition

Overall, owner-occupied households tended to rate their property in better condition than renters. 43% and 37% of owner-occupiers rated their home as good and excellent respectively (in its current state), compared to 36% and 30% of renters (Figure 7). This trend is contrary to the results from the previous (2010) House Condition Survey, which showed renters rated the condition of their home slightly higher than owner-occupiers (Buckett, Jones & Marston, 2012, Figure 3).

The reasons for this shift are not clear from the data available. The trend in overall assessor-rated condition (from the physical house assessment) of owned and rented houses is the same as in 2010 (rentals typically in worse condition than owned). There are several factors that could impact on occupant perceptions, including the political climate, media attention to the condition of rentals and churn in the housing stock.

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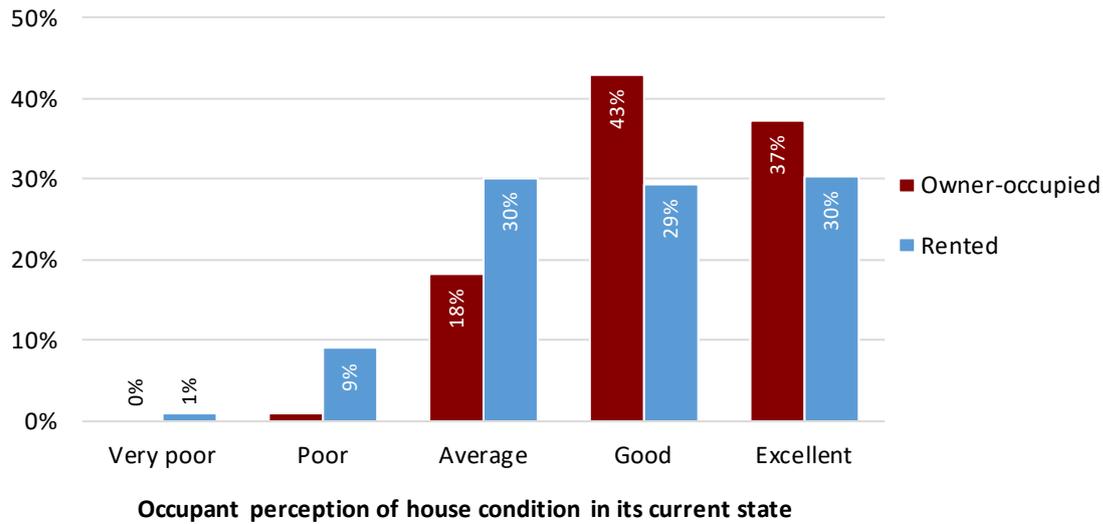
Figure 8. Occupant perceptions of house condition in its current state by tenure. (Source: HCS 2015 householder interview)

4.3.3 Occupant versus assessor rating of house condition

The condition rating scale used in the householder interview (Table 4) is not identical to that of the HCS physical survey (Table 3). However, a comparison of the two results does provide some interesting insight into how occupant perceptions of the condition of their home compares with a trained building assessor. For the purpose of this comparison, the overall average of the assessor's condition ratings is used. The average score of all condition ratings of all individual components of the house is rounded to align with the qualitative categorical scale (as per the results shown in Figure 6).

Figure 9 shows that occupant perceptions of the condition of their home are notably higher than the assessor's ratings. 37% of owner-occupiers and 30% of renters considered their home to be in excellent condition, compared to just 12% and 2% respectively based on the surveyor's assessment. This pattern of occupant perceptions of condition exceeding the assessor's ratings is consistent with the findings from the 2010 HCS (Buckett, Jones & Marston, 2012).

Interestingly, whilst occupants typically perceived their home to be in better condition than the assessor, 9% of renters did rate their home as poor. However, less than 1% of properties were in this category based on the assessor's ratings. This difference is likely, in part at least, due to the different things considered in the overall condition ratings compared here. All components of the house that were given a condition rating in the HCS form part of the average overall assessor's rating, However, occupants may have weighted certain features more heavily and/or not have considered some components at all when making their assessment.
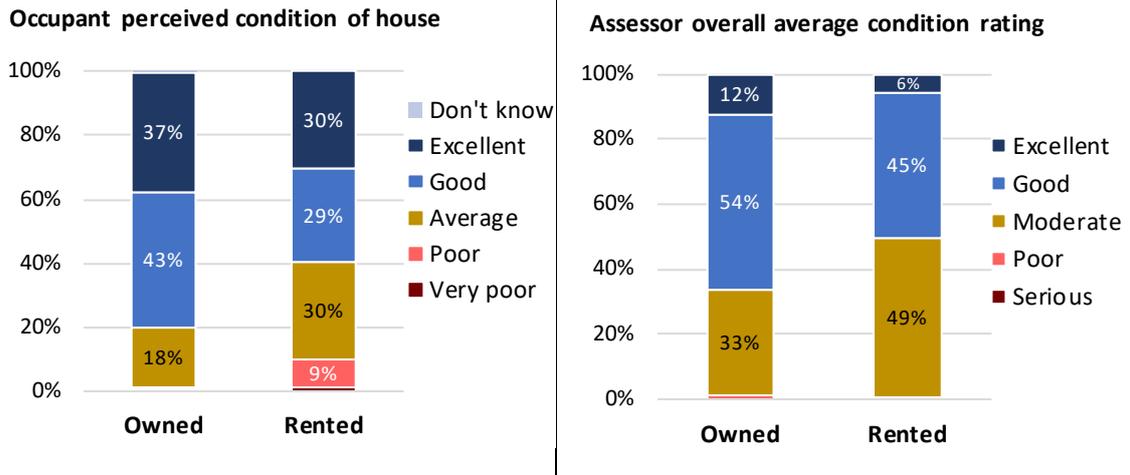
Figure 9. Household occupant and assessor ratings of overall house condition. (Source: HCS 2015 telephone interview for occupant perceived condition and physical house assessment for assessor rating)

5.   Interior condition

5.1   Overall condition of rooms

The physical house assessment part of the HCS asks the assessor to rate the condition of individual rooms in the house (specifically the kitchen, bathrooms and all other rooms). The results show the rental sector consistently has a higher proportion rated as moderate or worse condition (in need of attention within the 2 years, or sooner) compared to owner-occupied properties (Figure 10). Over three-fifths (61%) of 'all other rooms' in rented houses were rated as moderate or poor condition, compared to 40% of other rooms in owner-occupied houses. Of all room types given a condition rating, kitchens were typically rated the highest. Owner-occupied houses dominate this trend, with twice the proportion rated as excellent compared to rental properties. Likewise, over twice the proportion of bathrooms were rated as excellent in owner-occupied properties than rented properties.
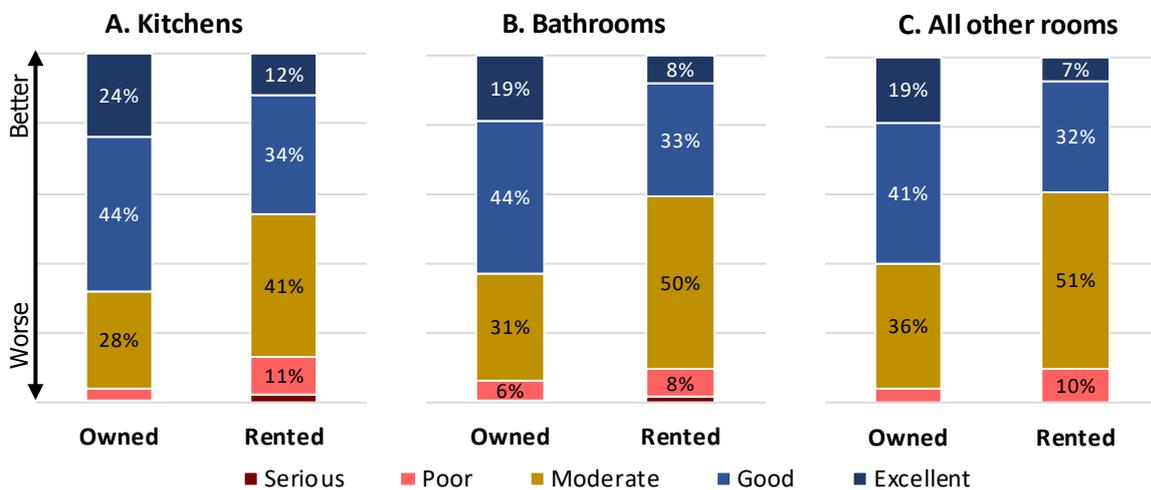
Figure 10. Condition rating of rooms overall. (Source: HCS 2015)

5.2   Condition of interior linings and fittings

In addition to an overall condition rating of different rooms, the assessor records the condition of specific internal features of the house. Consistent with the results shown above, interior linings and fittings in rental properties had lower condition ratings than owner-occupied properties (Figure 11).

Linings and fittings in wet areas of the house (bathrooms and laundry) had the highest proportion in moderate or poorer condition across both sectors. These areas of the home are typically subject to higher internal moisture levels, which can accelerate deterioration of materials.

In rented properties, 57% of linings and 58% of fittings in bathrooms were in moderate or worse condition, compared to 41% of owner-occupied houses. Rental properties were also over twice as likely as owner-occupied houses to have bathroom linings and fittings in poor condition (needing attention within the next 3 months).

On average, 1% of rented houses had some internal linings and fittings in serious condition (namely, kitchen linings, kitchen joinery, cooker, main bathroom linings, laundry linings and laundry fittings).

Though low in proportion, serious condition means these features pose health and safety implications and are in need of immediate attention.
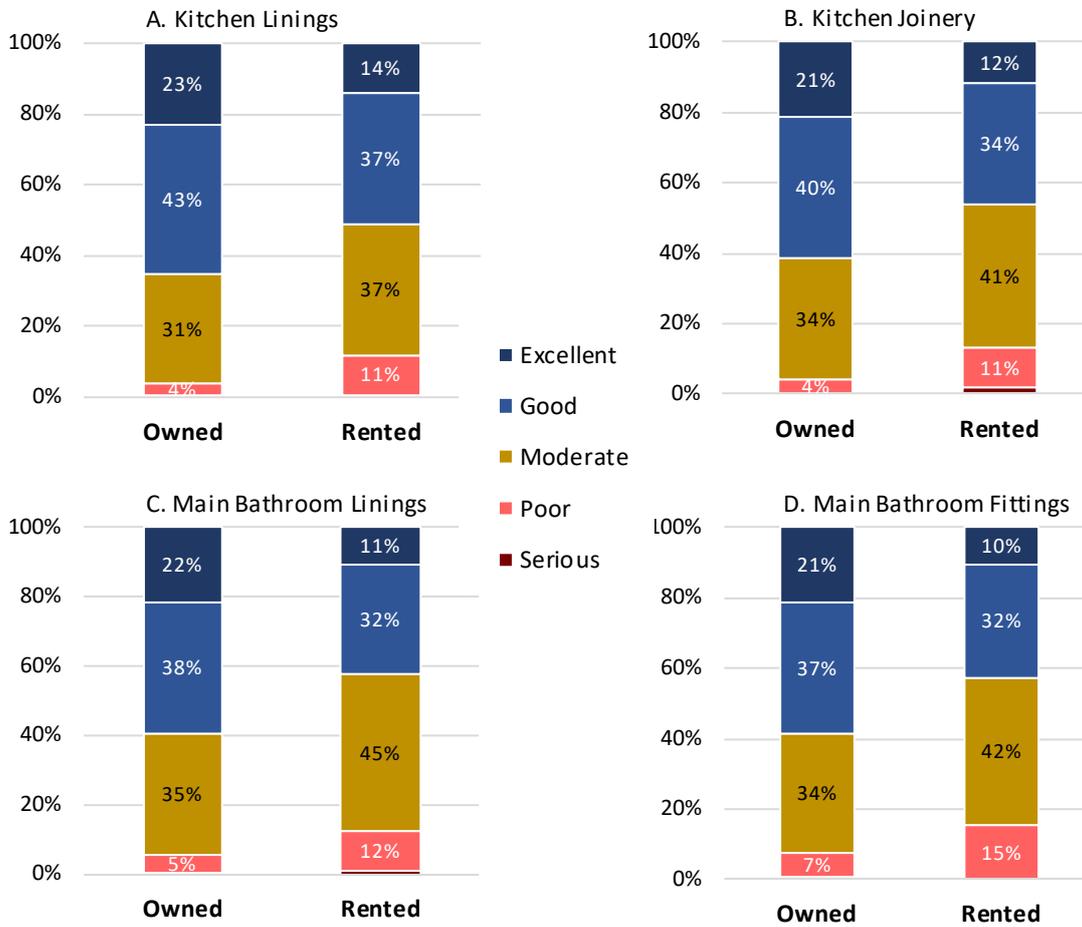
Figure 11. Condition of interior linings and fittings in the kitchen and main bathroom of owner-occupied and rented houses. (Source: HCS 2015)

5.3   Interior linings and fittings defects

The HCS lists a number of defects that could affect internal features of the home. The assessor is trained to identify these defects and record where they are present in the home.

5.3.1   Kitchens

The most common defects recorded with linings and joinery in kitchens are shown below. (Note that this list is not exhaustive – only defects recorded in around 10% or more of houses are shown.)

Chipped/peeling paint or wallpaper and discoloured paint/paper were present in 43% of rental property kitchens, compared to 28% and 26% of owner-occupied houses (Figure 12). Over half (51%) of owner-occupied kitchens had no joinery defects, compared to only one-third (33%) of rentals. The higher prevalence of defects aligns with the results from the overall condition assessment of the kitchen, which was lower in rentals (Figure 10).

Kitchen lining defects

Kitchen joinery defects
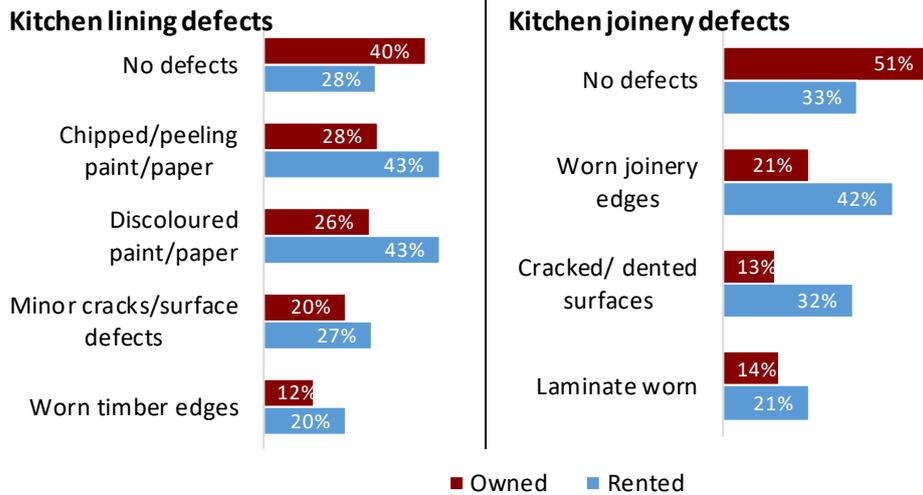
Figure 12. **Most commonly recorded defects with linings and joinery in kitchens by tenure type. (Source: HCS 2015)**

5.3.2 Bathrooms

Wall linings in the main bathroom in rental properties were chipped or peeling in over half (53%) of rental properties, compared to 31% of owner-occupied houses (Figure 13). Fittings in the main bathroom of rental properties showed signs of deteriorating sealant and stained surfaces in 30% and 33% of cases respectively. 25% and 20% of owner-occupied houses showed these defects (Figure 13). MDF swelling, cracked/chipped enamel, deteriorating bathroom hardware, deterioration of the shower lining, deteriorating vanity top and broken toilet seat/cistern/bowl were also more common in rental properties. Again, the higher prevalence of defects with bathroom linings and fittings in rented houses aligns with the assessor's (lower) rating of the condition of these features and the main bathroom overall.

Main bathroom lining defects

Main bathroom fittings defects
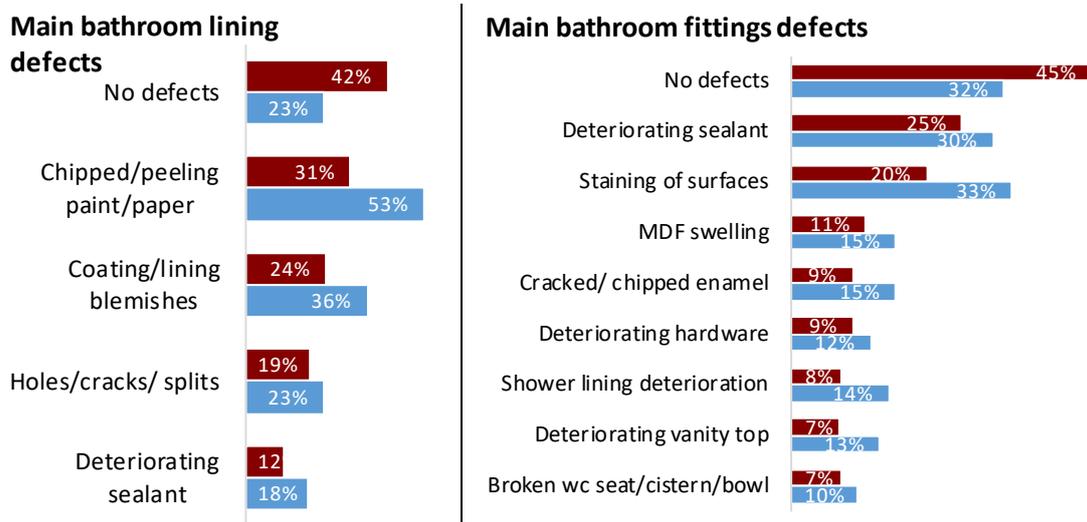
Figure 13. **Most commonly recorded defects with linings and fittings in the main bathroom by tenure type. (Source: HCS 2015)**

5.3.3 Staircases

Internal staircases were present in one-quarter of all houses surveyed but were more common in owner-occupied properties (31% of owner-occupied and 14% of rented properties had a staircase) (Figure 14). Of those owner-occupied houses with a staircase, 37% were in moderate condition (need work within the next 2 years). In

rental properties with a staircase, 43% were in moderate condition and 8% in poor condition (need attention within the next 3 months).
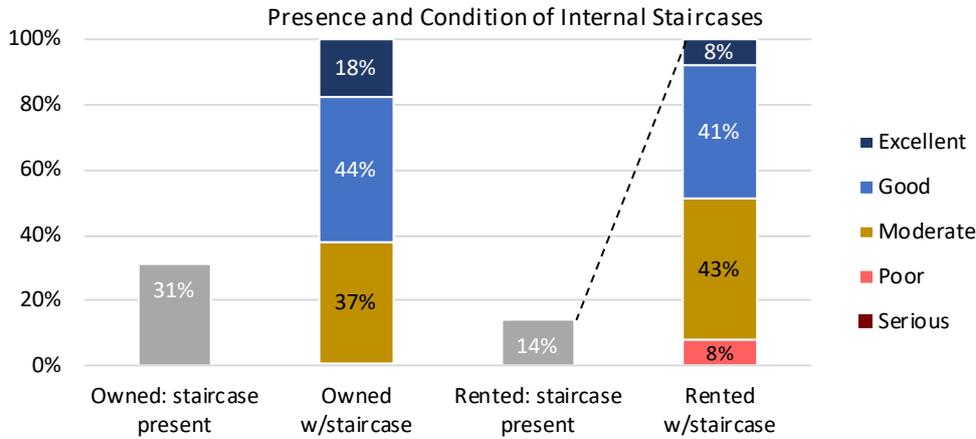
Figure 14. Presence and condition of staircases by tenure type. (Source: HCS 2015)

Common defects recorded with staircases related to handrails and balustrades.[1] In 17% of houses, the handrail was not continuous,[2] and for a similar proportion (16%) the handrail/balustrade was missing (Table 5). In rental properties, 14% of houses with a staircase did not have a handrail on one side where there was an open drop. Staircases in poor condition and with defects such as these present a potentially greater hazard and risk of trips and falls.[3]

Table 5. Commonly recorded defects with internal staircases by tenure type. (Source: HCS 2015)

		Owned		Rented
No defects		38%		40%
Handrail not continuous		16%		19%
Missing balustrade/handrails		16%		17%
Inadequate stair lighting		8%		13%
drop		3%		14%
Stairs slippery		0%		8%
Base % (houses with staircase)		*31%*		*14%*

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[1] The survey uses the terminology 'handrail' and 'balustrade' as opposed to 'barrier'.
[2] NZBC clause D1: "Wherever possible, handrails should be continuous on all access routes."
[3] "Nearly half of all injuries in the home are caused by slips, trips and falls, often from steps, stairs and ladders." (ACC, 2014).

6.   Exterior features and building envelope

6.1   Condition of house exterior and building envelope

This section reports on results from the assessor's condition ratings of some key exterior components of the house, namely wall cladding, external doors, windows and the roof.[4]

Figure 15 suggests that exterior features of rental properties were typically in slightly poorer condition than owner-occupied properties. However, the difference between the two tenures is less obvious for roofs and wall cladding compared to interior features (as shown in Figure 10 and Figure 11) and windows and exterior doors. This finding could suggest that property maintenance by owner-occupiers exceeds the rental sector for only certain features of the home, rather than across all building components.
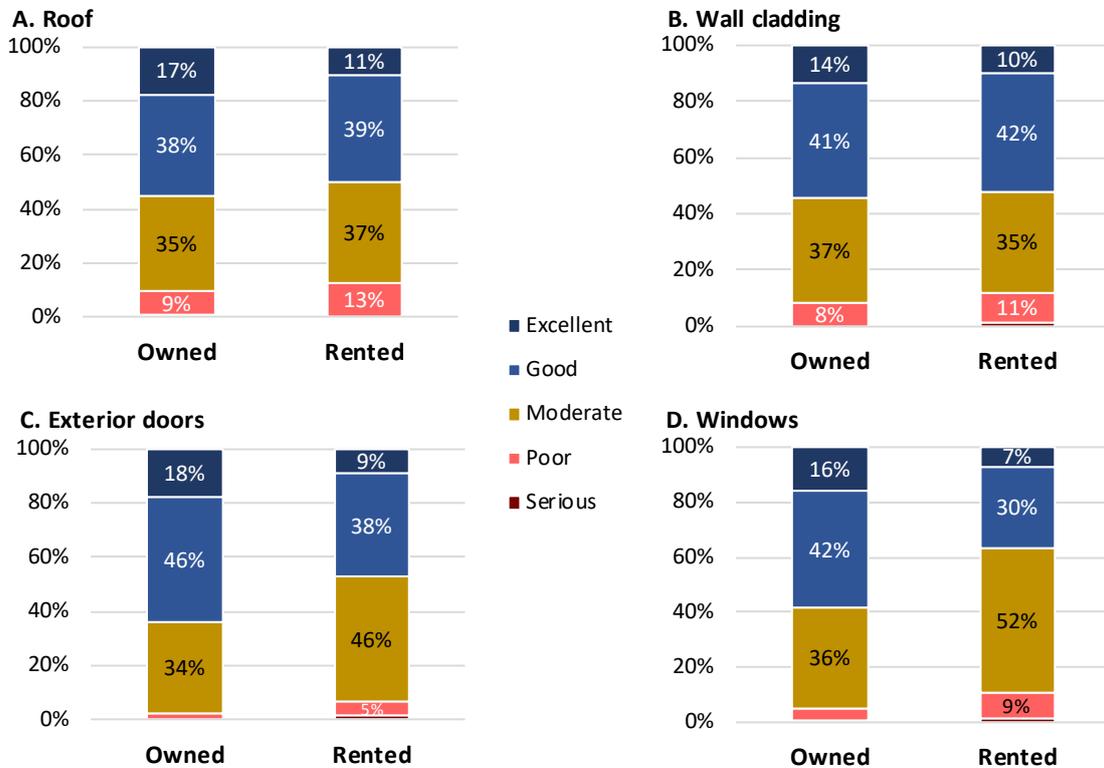
Figure 15. Condition rating of building envelope and key external features of owner-occupied and rental houses. (Source: HCS 2015)

There will be a number of factors underlying and affecting the trends seen here in the differences between the two tenures in the condition of different property features. One such factor could relate to the varying costs and ease of repair/replacement of different building components. The results suggest, for example, that owner-occupiers may be more likely than landlords to replace features that are lower cost, less invasive and/or improve the aesthetics of the home. This includes interior linings and fittings, doors and windows – hence the better condition of these components in owner-occupied homes. When it comes to costlier and/or more complex maintenance work,

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[4] These four features are only a subset of all the different exterior/building envelope features that are given a condition rating in the HCS. See Appendix A for a complete list of building features that are given a condition rating in the HCS.

such as to the wall cladding and roof, the rate of repair across the two sectors is similar.

6.2   Exterior defects

The HCS has capacity to record the presence and, in some cases, the frequency (percent of area affected) of a huge range of defects that could affect external features of the house (see Appendix A for a complete list of house components that are assessed in the survey). As with interior defects, the assessors were trained to identify different defects. Some of the most common issues recorded with the building envelope are highlighted below.

6.2.1   Roof defects

Compared to other house features, the condition of roofs showed less divergence between the owner-occupied and rental stock. This was shown in the condition ratings (see Figure 15A) and is evident in the frequency of defects recorded (Figure 16). Moss/fungi growth and flaking paint stand out as exceptions, being much more common with rental property roofs. These defects could be considered some of the more noticeable and easier to address of roof defects, hence the greater difference between the two sectors. (Owners are more likely to undertake repairs and maintenance than landlords.)
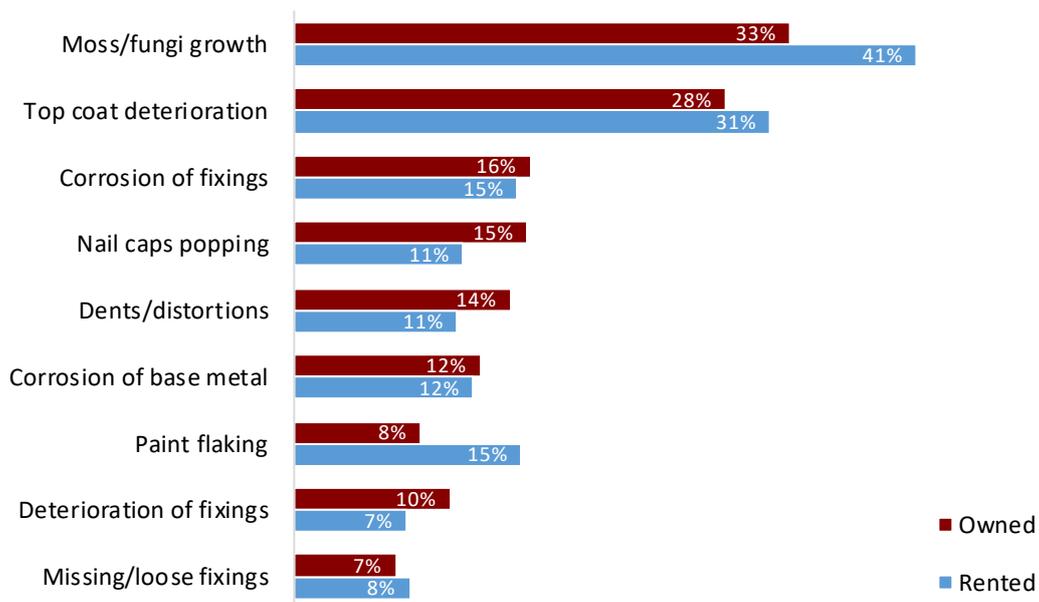
Figure 16. Common defects recorded with roofs in owner-occupied and rented houses. (Source: HCS 2015)

6.2.2   Wall cladding defects

Again, as indicated by the condition ratings (Figure 15B), Figure 17 shows there is less divergence between owner-occupied and rented houses with respect to wall cladding defects compared to some other features of the house.

Minor cracks in the wall cladding were evident in 45% of owner-occupied and 43% of rental properties. Cracks were mostly contained to less than 10% of the wall area, which was not sufficient to warrant a poor condition rating – most cladding was rated as moderate or good condition overall (see Figure 15B). Top-coat deterioration,

decay/rot and cracking at cladding joints affected similar proportions of owner-occupied and rented houses, but paint deterioration, fungi growth and corrosion of metal components were common in rental properties. Construction material will be an important factor here, in addition to the ability and willingness to undertake repairs and maintenance. For example, paint deterioration could be considered a more obvious and easier to address defect, hence the divergence between the two sectors.

Wall cladding defects
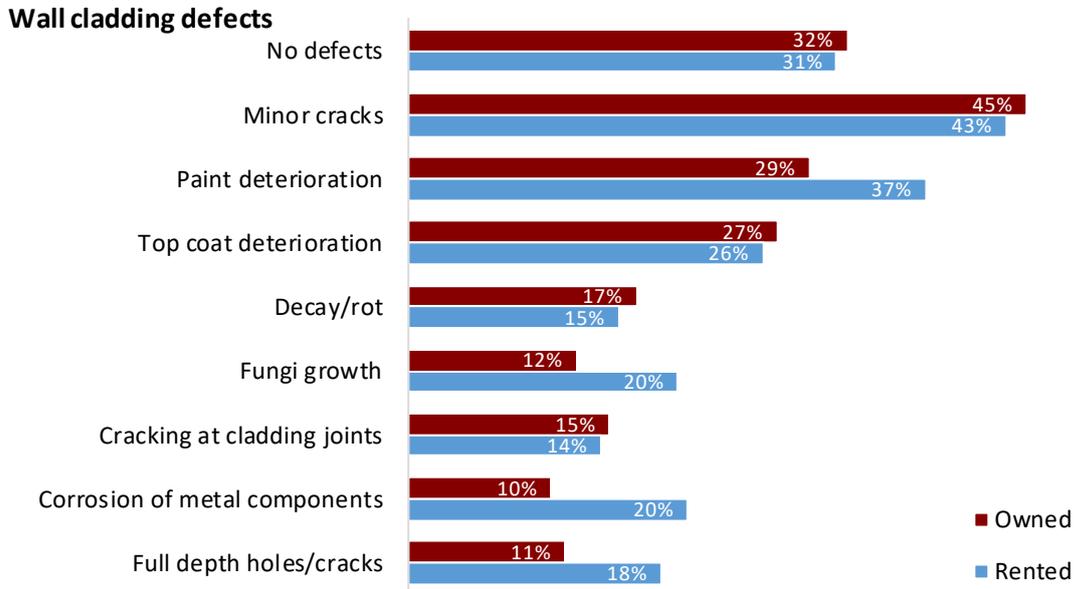
Figure 17. Common defects recorded with wall cladding in owner-occupied and rented houses. (Source: HCS 2015)

6.2.3   Window defects

The HCS records general defects that could affect windows and differentiates between timber and aluminium-framed windows (as they are susceptible to different types of defects). Timber windows were present in 42% of properties surveyed (similar proportions for owner-occupied and rented) and aluminium windows in over 70% of properties (80% in owner-occupied and 61% in rented houses).[5] Some of the most common defects with each window type (affecting at least 10% of houses surveyed that had that type of window) are shown below.

Over 60% of rental houses with timber windows showed signs of top-coat deterioration and putty cracks (Figure 18A). This high proportion with defects corresponds with the overall lower condition rating of windows in rental houses.

Common defects recorded for aluminium windows (again, more common in rental houses) included shrinking rubber, minor coating/anodising failure and loose rubber, although these were less common than defects with timber windows (Figure 18).

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[5] Note: Percentages can sum to more than 100% as more than one window type can be present in a single dwelling.

A. Timber windows defects

Defect	Owned	Rented
Top coat deterioration	55%	62%
Putty cracks	53%	65%
Paint deterioration	43%	51%
Nail rust staining	33%	48%
Joint cracks	32%	38%
Timber decay/rot	28%	39%
Dislodged /missing putty	31%	30%
Checking in timber	9%	27%
Fungi/moss growth	12%	23%

B. Aluminium windows defects

Defect	Owned	Rented
Shrinking rubber	24%	33%
Minor coating/anodising failures	24%	32%
Loose rubber	14%	24%

■ Owned
■ Rented

(Timber windows defects base count = houses with timber windows = 41% of owner-occupied and 43% of rented)
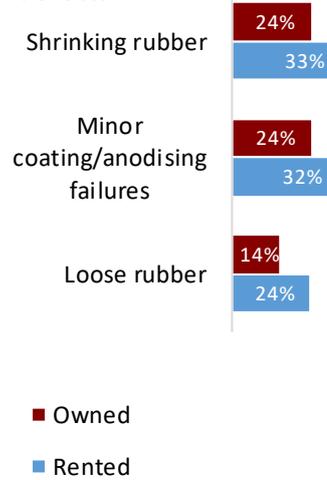
(Aluminium windows defects base count = houses with aluminium windows = 80% of owner-occupied and 61% of rented)

Figure 18. Common defects affecting timber and aluminium windows in owner-occupied and rented houses. (Source: HCS 2015)

6.3   Decks

The HCS captures information about constructed outdoor living space(s) joined to the house that could be considered a deck or balcony (verandas were recorded in a different section of the survey). There is some ambiguity evident in the data around what constitutes a deck or balcony, as some have included ground-level areas of decking or patio. This is an area where the survey could be improved in the future to add clarity and distinguish between these features.

It is possible, however, to retrospectively go some way towards making this distinction, as the maximum height above ground of the deck/balcony is recorded. Overall, 73% of owner-occupied and 60% of rental properties surveyed had some data recorded about decks/balconies. However, most of these were less than 1 m above ground (Figure 19).

Figure 19. Presence of decks and balconies by maximum deck height above ground and tenure. (Source: HCS 2015)

Of the owner-occupied houses with a deck, 11% were in poor condition, meaning they need work within the next 3 months. A fraction (2%) were in serious condition (need immediate attention and may pose health and safety implications (Figure 20). The height of the de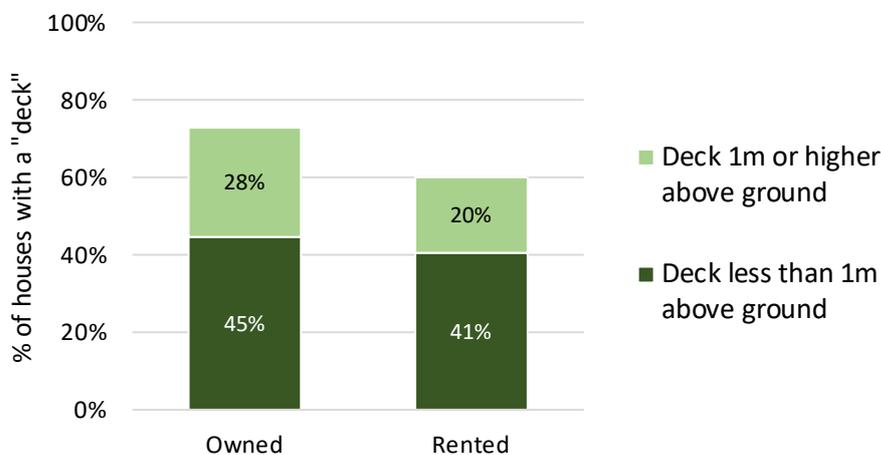ck above ground (less than 1 metre or 1 metre or higher) made little difference to the condition rating of decks in owner-occupied houses.

Around half (52%) of decks on rental properties were in moderate condition. There was some difference in the condition of decks by height above ground on rental houses. Decks with a maximum height of 1 metre or more above ground were more likely to be in moderate condition than good condition. It should be noted that these figures apply to a relatively small sample – only 20% of rental properties surveyed had a deck at this height.
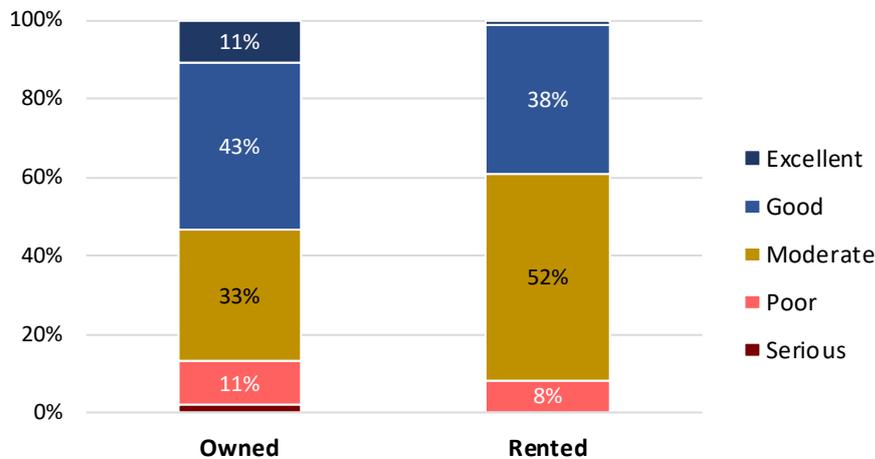
[Base count = % of houses surveyed with a deck: 73% of owner-occupied; 68% of rented houses]

Figure 20. Condition rating of decks in owner-occupied and rented houses. (Source: HCS 2015; figures as a percentage of houses that had a deck)

The condition of decks is an important consideration in the context of health and safety, as these present a prime site for slips, trips and falls around the home (ACC, 2014).

The HCS lists a number of defects that could affect the condition of decks, differentiating between timber (spaced decking) and solid (solid deck floor) decks. Common defects recorded in houses with timber decks included checking/cracking (19%), nails popping (18%) and a slippery surface (10%). Defects with solid decks were less prevalent, but included surface cracks (8%) and top-coat deterioration (4%).

7.   Damp and mould

The HCS contains three different indicators of the presence (and prevalence) of damp and mould in the home. These include:

* a measure of whether the house feels damp, recorded on a qualitative 5-point scale as shown in column one on Table 6 below
* a record of whether the house has a musty smell
* an assessment of visible signs of mould, also recorded on a 5-point qualitative scale (column three of Table 6 below) – visible mould was recorded for all rooms separately, to include the kitchen, bathroom(s), living areas and bedrooms.

All indicators are recorded by the assessor as part of the physical house assessment.

Table 6. Indicators of damp and mould recorded in the HCS 2015 by the assessor.

Subjective interior dampness feel	Subjective interior odour	Prevalence of visible mould
❑ Feels damp throughout ❑ Feels quite damp ❑ Feels damp in places ❑ Feels a little damp ❑ Feels dry throughout	❑ House smells musty	❑ Extensive blackened areas ❑ Large patches of mould ❑ Moderate patches of mould ❑ Specks of mould ❑ No visible mould

7.1   Damp

Figure 21(A) shows that 18% of rental properties surveyed felt a little damp to the assessor, a further 10% felt damp in places and 3% felt quite damp or damp throughout. This equates to a total of 31% of rental houses feeling damp to at least some extent (from a little to damp throughout) compared to only 11% of owner-occupied houses. Rental houses were also twice as likely to be deemed to smell musty compared to owner-occupied houses (Figure 21).
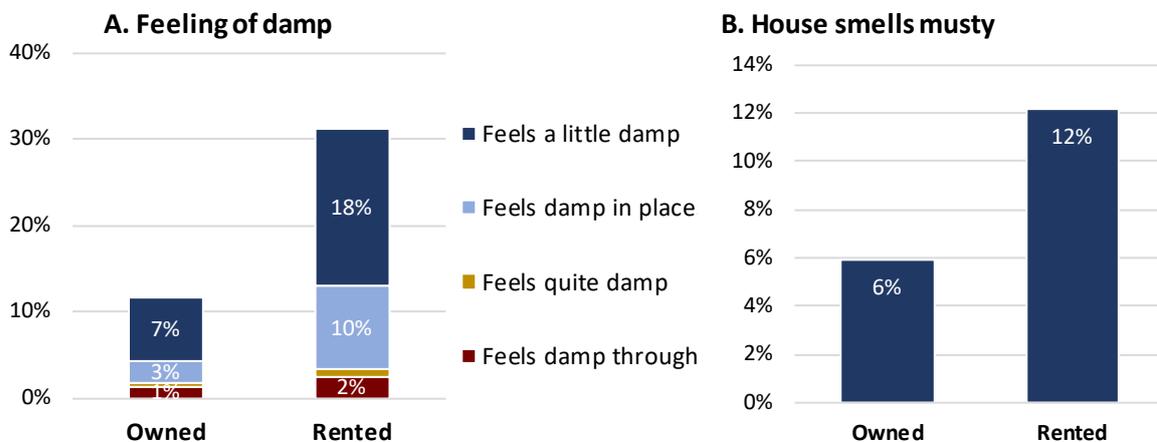
Figure 21. Subjective measures of damp in the home recorded by the assessor. (Source: HCS 2015)

7.2   Mould

As noted above, the level of visible mould is recorded separately for all rooms of the house (kitchen, bathrooms, laundry, living areas and bedrooms). Combining these individual measures shows that mould was visible to some extent in 44% of owner-occupied and 56% of rental properties (Figure 22). Overall, only just under half of houses surveyed (49%) showed some visible signs of mould.

Bathrooms were the most common areas of the house to have visible signs of mould (for both the owner-occupied and rented sector), but mould was not contained to these areas. 30% of rental properties and 19% of owner-occupied houses had visible signs of mould in other areas of the home (living areas and bedrooms) (Figure 23).

Whilst in most cases the most severe level of mould recorded was specks of mould, 17% of rentals had moderate patches and 9% had large patches (Figure 22). Furthermore, any visible mould could be an indication of the presence of harmful substances that pose health risks for household occupants.
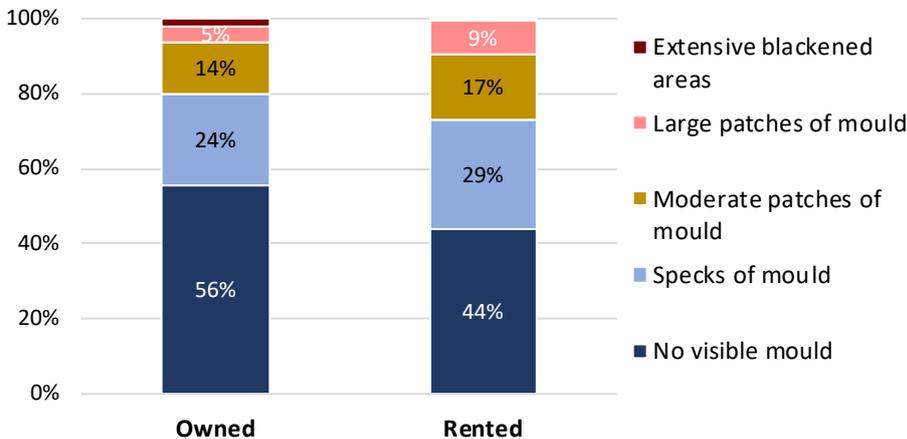
Figure 22. Worst incidence of mould recorded anywhere in the house. (Source: HCS 2015)
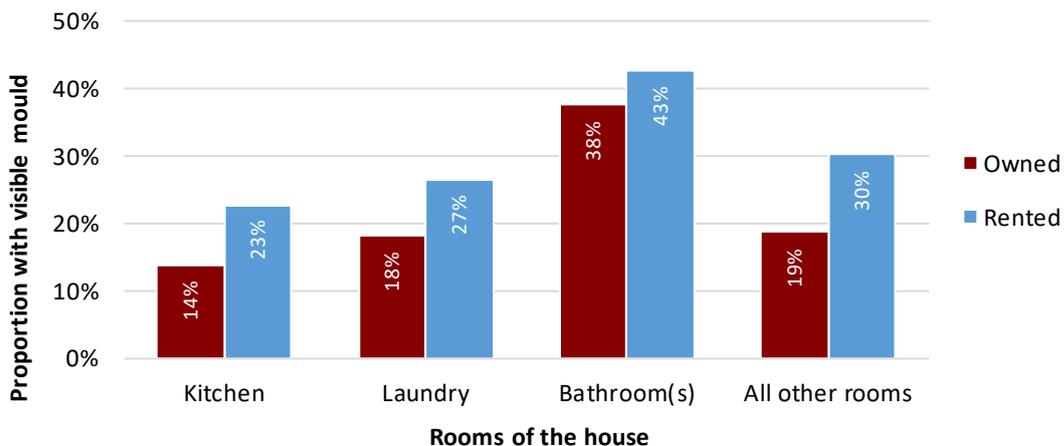
Figure 23. Mould visible in different areas of the house. (Source: HCS 2015)

8.   Overall level of maintenance and repair

The final section of the HCS asks the assessor to make an overall assessment of how well maintained they considered the property. Figure 24 shows that 32% of rental properties were rated as poorly maintained, over double the proportion of owner-occupied houses. Owner-occupied houses were twice as likely to be considered well maintained than rental houses.
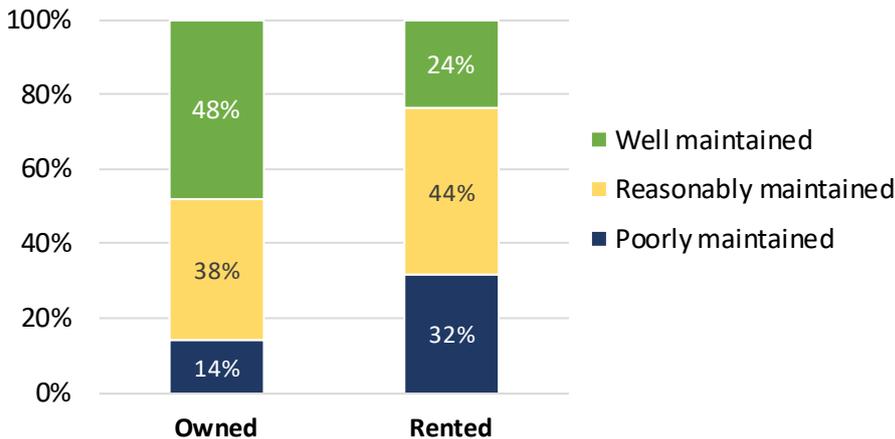
Figure 24. Overall assessment of level of property maintenance. (Source: HCS 2015)

The measure of overall level of maintenance has been included in previous HCSs. Comparing the results over time can therefore give an indication of changes and trends in the maintenance of the New Zealand housing stock. A comparison with the 2010 HCS results suggests that there may be some movement towards improved levels of maintenance in both sectors. Proportionally fewer properties were rated as poorly maintained in 2015 and higher proportions were rated as reasonably and well maintained (Figure 25). However, this is just one measure of the condition of the housing stock amongst many data points recorded in the HCS. A more detailed comparison of 2015 survey results with previous HCS data is beyond the scope of this report but remains an area of further research and analysis for BRANZ.
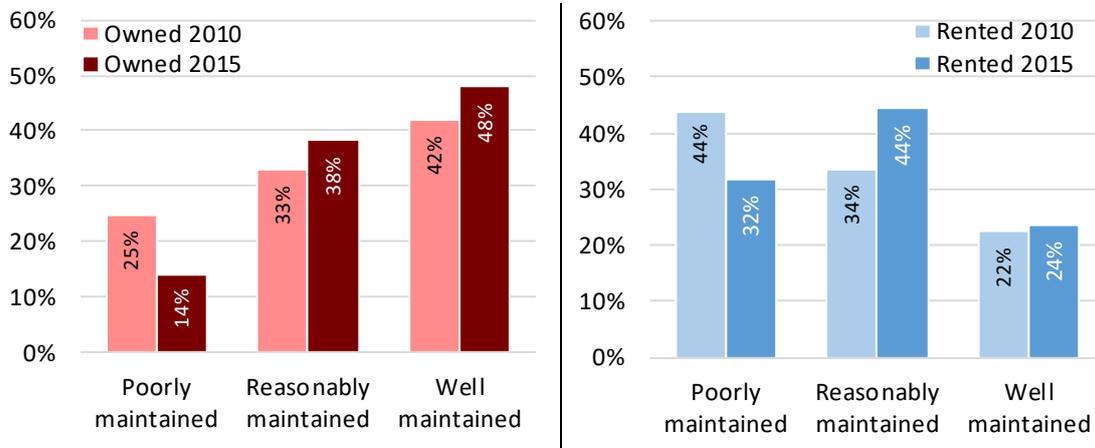
Figure 25. Changes in the overall surveyor-assessed level of maintenance of HCS houses from 2010 to 2015. (Source: HCS 2015 and HCS 2010)

9. Discussion and recommendations

This study report presents some key insights into the condition of the owner-occupied and rental housing stock and common defects affecting New Zealand housing. The results presented draw predominantly on data collected through the physical house assessment of the 2015 BRANZ House Condition Survey. There is a specific focus on comparing the condition of key interior and exterior components of owner-occupied and rented houses. The BRANZ HCS is intended as a key source of information on the condition of New Zealand houses. It highlights the differences between the owner-occupied and rental stock and reports on defects affecting different components of the housing stock.

Results show that the rental housing stock is typically in poorer condition than owner-occupied houses, both inside and out. The difference in condition between the two tenures was greater for interior features and what could be considered lower-cost, more easily replaced exterior components (windows and doors). The condition of larger, more costly and difficult to repair features (walls and roofs) showed less difference between owned and rental properties. However, overall, rental properties were around twice as likely to be rated poorly maintained by the assessor compared to owner-occupied houses. This aligns with building components of rented houses having consistently lower condition ratings.

The poorer condition of rented properties was also evident in the presence of mould inside the home. Mould is a key indicator of overall indoor air quality and potentially harmful to the health of household occupants. Mould was visible to some extent in around half of all houses surveyed, with a slightly higher prevalence in rental properties.

The gap between the two sectors, with the rental housing stock consistently shown to be in poorer condition than owner-occupied houses, was also evidenced in the 2010 HCS. (This was the first time the BRANZ HCS included rental properties.) Whilst the latest survey therefore shows this pattern pertains, further analysis is needed to explore the extent of any shift in condition and repairs and maintenance from 2010 to 2015. There will be a number of underlying factors and drivers affecting the trends presented in this report, including materials, property age, location, and repair and maintenance activity. The analysis undertaken for this study looks at just a few variables within an incredibly rich and diverse resource. BRANZ recognises the need for and value in further mining the data and will be undertaking more detailed analysis of and reporting on the HCS data later this year.

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Appendix A. House Condition Survey: Components given a condition rating

Table 7 and Table 8 show the condition rating scale used and all individual features of the house that could be given a condition rating in the BRANZ 2015 House Condition Survey. Not all will be relevant to all houses, in which case, 'not applicable' is a valid response.

Table 7. Condition rating scale used in the BRANZ 2015 House Condition Survey.

Condition rating	Description
Serious	Health and safety implications; needs immediate attention
Poor	Needs attention within next 3 months
Moderate	Will need attention within the next 2 years
Good	Very few defects; near-new condition
Excellent	No defects; as-new condition

Table 8. All individual house features that could be given a condition rating in the BRANZ 2015 House Condition Survey.

Area of house	Component	
Interior	1	Kitchen – overall
	2	Kitchen – linings
	3	Kitchen – joinery
	4	Kitchen – cooker
	5	Bathrooms – overall (all bathrooms)
	6	Bathroom – main – linings
	7	Bathroom – main – fittings
	8	Bathroom – second – linings
	9	Bathroom – second – fittings
	10	Bathroom – third – linings
	11	Bathroom – third – fittings
	12	Laundry – linings
	13	Laundry – fittings
	14	Other rooms – overall
	15	Other rooms – trim
	16	Staircase
	17	Interior doors
Roof space	18	Roof space
	19	Roof framing
Heating and hot water	20	Hot water cylinder #1
	21	Hot water cylinder #2
	22	Header tank
Subfloor and floor	23	Foundations
	24	Joists/bearers
	25	Fasteners

Area of house	Component	
	26	Water pipes
	27	Plumbing waste
	28	Floor
	29	Vents
	30	Basement
Envelope and exterior	31	Wall cladding
	32	External doors
	33	Windows
	34	Roof
	35	Skylight
	36	Gutters/downpipes
	37	Chimney
Decks/balconies	38	Decks/balconies – all overall
	39	Deck/balcony – primary
	40	Deck/balcony – secondary
Attached areas	41	Carport (attached to house)
	42	Lean-to (attached to house)
	43	Canopy (attached to house)
	44	Veranda (attached to house)
Garage/sleepout	45	Garage/sleepout #1 (if used for living)
	46	Garage/sleepout #2 (if used for living)
Water storage	47	Water storage tank
Outdoor areas	48	Paths
	49	Steps/ramps

Appendix B. Sampling approach

The sample structure for the 2015 HCS followed the approach used for the 2010 survey (Buckett, Jones & Marston, 2012). New Zealand was divided into 13 parts, or strata, 11 of which corresponded to cities (i.e. Auckland City, Manukau City, North Shore City, Waitakere City, Christchurch, Dunedin, Hamilton, Lower Hutt, Porirua, Upper Hutt and Wellington). The remaining two strata were the rest of the North Island and the rest of the South Island. 550 samples were divided amongst these strata in proportion to the number of houses recorded in the 2013 Census of Population and Dwellings (Table 9). Note that, to be comparable with the 2010 HCS, the sample included the four previous cities that existed before their amalgamation into the Auckland 'super city'.

Table 9. 2015 House Condition Survey target sample.

Group/locality	Target sample			
	Owner-occupiers		Renters	
	%	Houses	%	Houses
Group A				
• Auckland City	18	30	24	25
• Manukau City	13	21	15	15
• North Shore City	11	18	9	9
• Waitakere City	9	15	8	8
• Hamilton City	6	10	8	8
• Wellington City	9	15	10	10
• Porirua City	2	4	2	2
• Lower Hutt City	5	9	4	4
• Upper Hutt City	2	4	1	1
• Christchurch City	18	30	15	16
• Dunedin City	7	11	5	5
Total	*100*	*167*	*101*	*103*
North Island clusters	72	136	76	68
South Island clusters	28	54	24	22
Total	*100*	*190*	*100*	*90*
Grand total	*100*	*357*	*100*	*193*

Sampling within strata

The 11 strata corresponding to the cities were sampled using simple random sampling. The two remaining strata were sampled in clusters, each cluster being a Census area unit as defined at the 2013 Census. 69 clusters were selected at random. The clusters were selected with replacement (several clusters were in fact selected twice) and with probability proportional to the number of houses in the 2013 Census. Within each selected cluster, four houses were selected by simple random sampling, with the constraint that between one and three of these were required to be rental houses, according to the percentages of rental households in the cluster. An unbiased random rounding method was adopted.

The total sample of 550 households was designed to generate a self-weighting sample representing New Zealand households with a sample error of ±5% at a 95% confidence interval (±6.2% for owner-occupied and ±8.4% for rental properties).

Christchurch additional sample

The 2015 HCS included an additional sample of Christchurch houses (additional to those already sampled as per the mainstream HCS sampling method outlined above). The additional Christchurch sample was commissioned by MBIE to facilitate more detailed analysis of houses following the 2010/11 earthquakes. The additional Christchurch sample had a target survey quota of 104 houses, to bring the total number of houses surveyed in Christchurch to 150 (46 were part of the mainstream HCS sample).

Post-sampling weighting

If the target sample had been achieved, the data would have been self-weighting and easily extrapolated to the New Zealand stock as whole. However, due to challenges with recruitment, in the rental sector in particular, the target quota was not achieved within the time available. As a result, the sample had to undergo post-sampling weighting to maintain representativeness. The weighting effectively realigns the proportion of owner-occupied and rental houses surveyed to be consistent with the 2013 Census.

Weights were generated for each surveyed unit within a stratum/cluster based on tenure. For example, if (based on the 2013 Census) there were an estimated 100,000 non-rental houses meeting the HCS criteria in a certain stratum, and 50 such houses had been surveyed, then each of the surveyed houses could be considered as "representing" 2,000 houses in the population. Each surveyed house would therefore be given a weight of 2,000 (50 x 2,000 = 100,000). This process was applied to all sampling strata and clusters using Census estimates and actual number of houses surveyed.

This weighting method was applied to the mainstream HCS survey sample and the mainstream plus the Christchurch additional sample. The latter has been used for all analysis presented in this report, offering the advantage of a larger sample size. The sample sizes, sampling errors and weighted counts are shown in section 2.