

Airbnb and Housing in Auckland

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Executive summary

Introduction

Housing is important to the Auckland economy. It plays a central role in the efficient operation of the labour market and is critical to social and health outcomes of all Aucklanders. Auckland's housing issues, in particular the shortage and increasing unaffordability of housing has been a topic of growing concern.

The rise of Airbnb (and other online accommodation sharing platforms) is attracting a lot of interest, as it has implications for housing supply and affordability in many cities around the world facing a housing shortage including Auckland. The argument is that the rapid growth of Airbnb and the financial incentives to property owners means that increasing numbers of privately owned properties are being used long-term to service the short-term rental market, and that this has negative implications for the supply and affordability of residential rentals.

Auckland's housing shortage and increasing unaffordability need to be addressed to enable Auckland's growth and development (Auckland Council, 2012a; Auckland Council, 2012b and Auckland Council, 2016). Auckland Council has an active role in Auckland's housing system, through its various functions as planning authority, service provider, regulator and advocate.

There is very little available research into the implications of Airbnb for Auckland and this report is an important contribution to our understanding of the size and scale of Airbnb in Auckland and of the possible impacts on the private residential rental market.

Airbnb

Airbnb is a website that enables private individuals and groups to offer a range of accommodation options to those seeking short-term accommodation. There are three 'home type' options available to rent: entire place, private room and shared room (these are defined in Section 1.2 of the report).

Airbnb was founded in 2008 and has experienced substantial growth since 2010 (Molla, 2017). The model is also constantly evolving and has expanded from just offering a home sharing service to offering 'experiences', tourist packages and restaurants in some cities (Bosa and Zavery, 2018; Moon, 2018).

While Airbnb has primarily served budget-minded tourists, it has also been attracting a larger share of business travellers (Folger, 2016). Another notable change is the increasing number of Airbnb hosts with multiple listings (O'Neill and Ouyang, 2016; Sawatzky, 2016). The financial benefits of the Airbnb model are attracting investors

(Samaan, 2015) and this has led to the rise of ancillary services such as property management companies, designed specifically to cater to the growing number of Airbnb ‘investors’.

The literature

The literature reveals a range of implications of Airbnb rentals on housing. We found no literature on the impact of Airbnb rentals on housing stock and prices in New Zealand. However, overseas studies have identified two somewhat contrasting themes. A substantial body of literature argues that Airbnb impacts negatively on housing supply (e.g. Wachsmuth et al., 2017; BJH Advisors LLC, 2016; Sawatzky, 2016; Simcock and Smith, 2016; Samaan 2015) and prices (e.g. Barron et al., 2017; Horn and Merante, 2016; Stulberg, 2015). Many of the cities that feature in these studies are major tourist centres that have housing shortages and affordability pressures. On the other hand, only a few studies have found Airbnb rentals to have a minimal or no impact on housing supply and prices (e.g. Bautista, 2016; Wilkerson et al., 2016)

In addition, the conversion of housing to short-term rentals is driving displacement and gentrification, and beginning to turn formerly residential neighbourhoods into “blocks of hotels” (Portland Tenants United, 2017; Zaitchik, 2016; van der Zee, 2016; Barber, 2016; Hill, 2015; Coldwell, 2014). Gurran and Phibbs (2017) noted that in areas of high Airbnb visitation in Sydney, there is growing concern over tourist behaviour in residential neighbourhoods and apartment buildings, particularly when whole homes or apartments are offered by absent hosts on a permanent or semi-permanent basis.

The concern over Airbnb’s impact on housing affordability has also gathered significant attention from policymakers, and has motivated many cities to impose stricter regulations on home sharing (Barron et al., 2017) (see examples in Section 3.3 of the report). The challenge for local authorities is developing policies that help all parties comply with fair and reasonable regulations, rather than trying to completely ban some homeowners’ primary source of income (e.g. Michels, 2017) as well as the ongoing monitoring and enforcement of any legal restrictions on short-term rentals (e.g. Oskam and Boswijk, 2016).

With increasing pressure from governments Airbnb is aware of the need to adapt. Airbnb has updated its terms of service to inform its users of local laws and taxes, emphasising the host's responsibilities to comply with them. Airbnb is also working alongside a number of governments to make it easier for hosts and guests to pay their share of hotel and tourist taxes (AirbnbCitizen, 2017) and in some cases provide a registry of Airbnb rental properties to governments who request them (Zaleski, 2017).

New Zealand context

In New Zealand, Airbnb rental income is taxable under the Income Tax Act 2007 and is subject to goods and services tax for rentals where gross rental income exceeds the threshold of \$60,000. Local councils may also impose additional requirements for short-term accommodation such as rates and resource consent application charges. Two councils in New Zealand have done this. Queenstown Lakes District Council has introduced a business rate for online accommodation providers based on intended booked nights, and Rotorua Lakes Council which allows properties offering short-term accommodation to be rented for a total of 100 days before becoming liable for a business rate (Flahive, 2018; Eriksen, 2017; O'Connell, 2017). In June 2017, Auckland Council approved a targeted rate on commercial accommodation providers and is currently assessing a proposal for the inclusion of online accommodation providers under this targeted rate (Niall, 2017).

Our findings

Our analysis used AirDNA data to provide insights into the Airbnb market in Auckland. AirDNA is a data and analytics company which aggregates information from the Airbnb website.

An overview of Airbnb listings in Auckland showed a total of 12,370 listings had at least one booking in the 12 month period ending 31 August 2017. Those which had 'home type' information available (12,357) were split fairly evenly between entire place (49%) and private rooms (49%) with a very small proportion of shared rooms (2%).

About 80 per cent of all Airbnb listings in Auckland were in the central (including Waiheke and Great Barrier islands) and northern local board areas, which are some of Auckland's most affluent areas. These are also some of Auckland's most popular tourist areas. Similarly, when looking at 'entire place' listings only, these were largely concentrated in Auckland's central and north local boards (87%, a higher share than their share of Auckland's dwellings at 54% as at the 2013 Census). A significant proportion of Airbnb listings in the popular tourist areas of Waiheke, Great Barrier and Rodney local board areas are 'entire places' whereas across the rest of Auckland they are mainly 'private rooms'.

Airbnb 'entire place' listings in Auckland

When assessing the impact of Airbnb on housing, studies tend to focus only on listings which are classified as 'entire place'. Our findings for Auckland showed:

- There were 6105 entire place listings active at some point in the year to 31 August 2017, generating a total revenue of \$89.8 million.^{1,2} The median revenue earned per night was \$195 for an 'entire place' listed on Airbnb. These figures varied considerably across Auckland's local board areas – Waiheke had a significantly higher median nightly revenue for a two-bedroom entire place (\$301) than any other local board – the next highest was Waitemata at \$218.
- The Waitemata Local Board area had the most listings with 2052 (34% of total), 57 per cent of which were located in the city centre. Albert-Eden and Waiheke local boards had the second and third highest number of entire place listings, making up 10 per cent and eight per cent of Auckland's entire place listings respectively.
- The majority had two bedrooms or less (68%) compared to only 26 per cent for total dwellings in Auckland in the 2013 Census. This suggests that Airbnb rentals predominantly cater for individuals, couples and small families with one or two children. It also suggests Airbnb listings could be impacting on this sector of the private residential rental market (units with two bedrooms or less) which may already be pushed for capacity.
- Across Auckland as a whole, there were 12.1 entire place Airbnb listings per 1000 dwellings as at the 2013 Census. In terms of local board areas, Waiheke, Great Barrier and Waitemata were considerable outliers, consistent with their relative strengths in attracting visitors. This also suggests that lower income areas with housing shortages such as in the south and west of the city were less impacted by Airbnb rentals.
- Airbnb entire place listings in Waiheke and Great Barrier have relatively high proportions of two-night stay minimum restrictions (68% and 64% respectively), suggesting the strong degree to which they cater to weekend visitors. In contrast, the five southernmost local boards have the highest proportions of listings with no minimum stay restrictions.
- The number of Airbnb entire place listings in Auckland increased significantly over the 12 month period ending 31 August 2017, from 2408 to 6105 (a 154% increase). Waitemata Local Board area experienced a similar growth rate during this period (157%), whereas Waiheke experienced a more modest 67 per cent increase. Of interest is the strong percentage growth of entire place listings in some suburban areas, which suggests Airbnb entire place listings are expanding out into the suburbs in addition to more traditional visitor and tourist locations.

¹ Values are given in \$NZ. These have been converted from the AirDNA data tables' default currency of \$USD by using an exchange rate of NZD/USD = 0.715. This is the average of the average monthly exchange rates over the time period of interest sourced from the NZFOREX Foreign Exchange Services website accessed 13 November 2017 (www.nzforex.co.nz/forex-tools/historical-rate-tools/monthly-average-rates).

² Not all of these listings have had a full year's opportunity to earn revenue.

Airbnb 'full-time' listings in Auckland

It is difficult to accurately identify Airbnb rentals that would otherwise have been made available on the private residential rental market if online platforms such as Airbnb were not available. Studies that have looked at this aim to measure 'full-time' Airbnb usage in order to assess Airbnb's impact on the long-term residential rental housing market. Hence, a commonly used threshold is the number of days a unit is booked for.

Our analysis used the methodology developed by Wachsmuth et al., (2017). Their definition of a full-time listing is: it is for an entire place (not just a room within a larger unit); it has been booked for 60 days or more in the year; and it has been available to be booked for 120 days or more during the year.³

The host-determined classification of their home type on Airbnb means that care must be taken to ensure the actual 'entire place' listing is a full unit and not just a room and bath, a caravan or a boat, which would not necessarily be ideal as a long-term residential rental.

Our findings based on AirDNA data and the definition we used of a full-time unit showed:

- There were 1236 Airbnb listings considered to be in full-time usage in Auckland in the 12 month period to 31 August 2017, earning a total revenue of \$41.6 million. The median revenue for full-time listings was \$27,324 and the median number of days a full-time listing was booked for was 139 days.
- Three-quarters of Airbnb full-time listings were concentrated in the six local board areas of Waitemātā, Waiheke, Hibiscus and Bays, Albert-Eden, Rodney and Ōrākei located in central and north Auckland.
- Eight per cent (or 104) of full-time listings in Auckland were affiliated with five hosts (as identified by their unique host identification number) and each had more than 10 full-time listings. However, four of these 'hosts' have, in addition to their Airbnb presence, their own individual property management websites. The majority of listings (71%) were hosts with one listing only, who combined earned 64 per cent of total revenue.

Impact on residential rentals

We used an approach similar to Gurran and Phibbs (2017) to assess the potential for Airbnb rentals to affect the supply of Auckland's residential rental accommodations. Their report compared 'frequently available Airbnb whole home listings' which we have defined

³ The criteria for full-time listings requires assessment of availability and bookings over a 12 month period. Hence, our analysis needed to either: 1) remove listings that were first created less than 12 months ago or, 2) 'annualise' part-year patterns for relatively new listings. This second approach multiplies the number of available and booked days by the inverse of the proportion of the 12 month period they have been in existence. This assumes that part-year patterns are representative of their likely full-year performance. Both these approaches have advantages and disadvantages. Approach (i) will result in somewhat of an underestimation of the number of full-time properties; on the other hand seasonality, as we have seen previously, will be a complicating factor in (ii). We have chosen to pursue approach (i) in this report.

as full-time listings with the rental housing stock from census data. The 2013 Census is the most recent reliable indicator of rental dwellings locations available, however we recognise that changes in both the magnitude and spatial distribution pattern of dwellings will have occurred since then, hence this is only an approximation of the proportion of Airbnb full-time listings to rental dwellings in Auckland.

At the regional level, our findings showed entire place listings which we estimated to be offered on Airbnb on a full-time basis represent just under one per cent of all rental dwellings (and 0.2% of total dwellings) in Auckland as at the 2013 Census. These findings suggest that Airbnb full-time listings is insignificant in terms of the total dwelling and rental stock in Auckland and as such are likely to have had no or a minimal impact on the private residential rental market at a macro level.

The results however vary across Auckland's local board areas. For example, Waitematā had the majority of Airbnb full-time listings (33%); however these listings represent only 2.4 per cent of total rental dwellings in the area as at the 2013 Census. A similar result is observed across most other local board areas, where Airbnb full-time listings made up an insignificant proportion of their rental stock.

However, in Waiheke, the number of entire place listings frequently available for rent on Airbnb was equivalent to 16 per cent of the island's rental stock (and 3% of all dwellings) as at the 2013 Census. In a tight housing environment, this potentially could have an impact on the residential rental stock and prices on the island. Our results also showed Airbnb full-time rentals on Waiheke have the highest average weekly revenue (\$998) over the 12 month period to 31 August 2017 across all local board areas. This was nearly twice as much as the average weekly rent for residential rentals on Waiheke (\$507) based on new bonds lodged with the Ministry of Business, Innovation and Employment (MBIE) Tenancy Services in July 2017. This could provide more incentive for further investment for short-term rentals on the island given the expected returns from Airbnb. The risk for these popular locations and particularly in a housing shortage environment is that, over time the mortgage relief from Airbnb might become further capitalised into already high house prices.

Conclusion

The findings are timely for local and central government as local authorities such as Auckland Council are considering regulating the online short-term rental sector. As Airbnb continues to grow and evolve, further work is required including exchanges of knowledge and experiences on how to deal with the impacts of these online platforms.

For example, to understand the effects of the use of property sharing sites such as Airbnb on house prices, supplementary work could examine the possibility that Airbnb revenue

may become capitalised into house prices and rents with the availability of longitudinal data. Such longitudinal information could also explore the trajectory of Airbnb to understand how it has evolved and changed over the years and that of its users (both hosts and travellers). Further research could also look at the welfare impacts of Airbnb and other home sharing sites. For example, home sharing may have positive spillover effects on local businesses if it drives a net increase in tourism demand. On the other hand, home sharing may have negative spillover effects if tourists create negative amenities, such as noise or congestion, for local residents.

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1.0 Introduction

There is increasing interest in the implications of Airbnb (and other online accommodation platforms) on housing stock and affordability in Auckland, as in many other cities around the world facing a housing shortage. With the number of Airbnb listings growing rapidly, its impact is inevitable. It has been argued by some commentators that increasing numbers of privately owned properties are being used long-term to service the short-term rental market, and that this has negative implications for the supply and affordability of residential rentals.

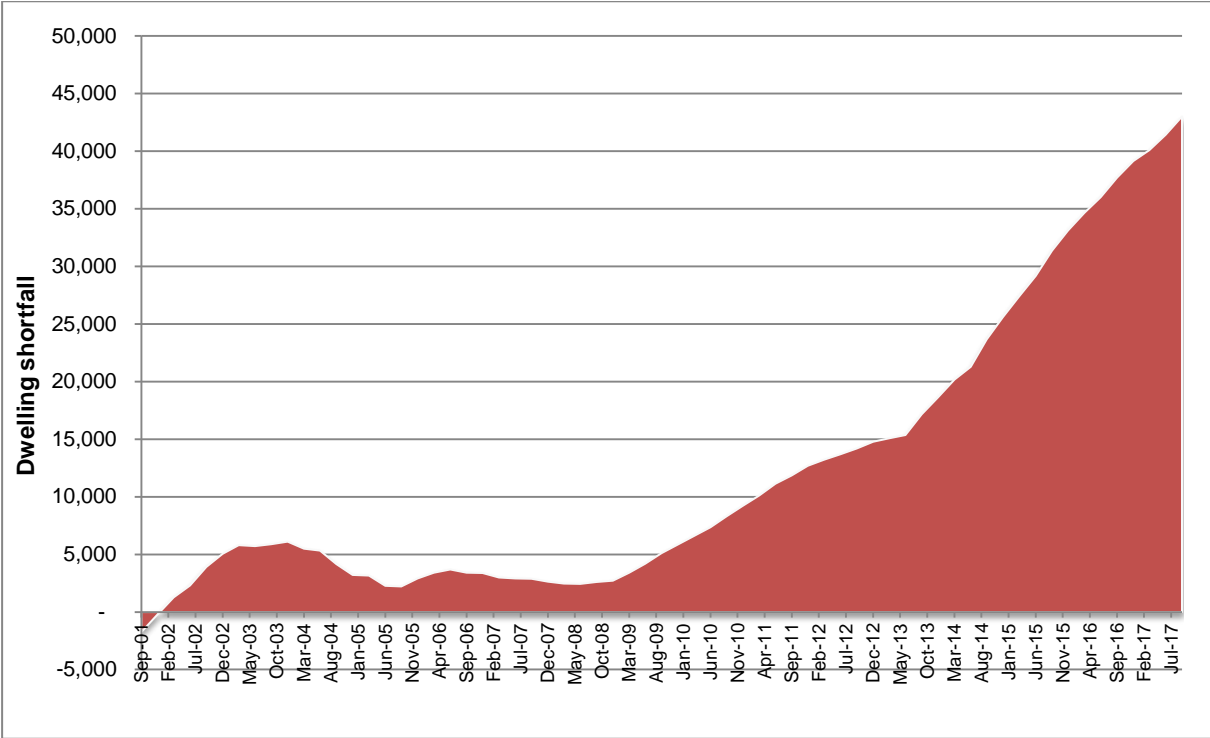
Housing plays a central role in the efficient operation of the labour market and is critical to social and health outcomes of all Aucklanders. Auckland's housing issues, in particular the shortage and increasing unaffordability of housing, continue to feature prominently in the media and in research reports. These issues need to be addressed, to enable Auckland's growth and development (Auckland Council, 2012a; Auckland Council, 2012b; Auckland Council, 2016). Auckland Council has an active role in Auckland's housing system, through its various functions as planning authority, service provider, regulator and advocate.

This section presents background information about Auckland's housing market followed by a brief introduction to Airbnb and the purpose and outline of the report.

1.1 Auckland's housing market

Auckland's inability to build enough homes to keep up with demand is a longstanding issue (Auckland Mayoral Housing Taskforce Report, 2017). More recently strong population growth fuelled by record net migration gains and coupled with the shortfall in the amount of house building, has contributed to a severe housing shortage in Auckland. The Auckland Council's Chief Economist estimates this housing shortfall to be over 40,000 dwellings as at September 2017 (Figure 1).

Figure 1: Housing shortfall in Auckland, September 2001 to September 2017



Source: Auckland Council Chief Economist Unit (2017)

House prices as a result, have gone up significantly in Auckland. For example, they increased by 65 per cent in real terms over the 10 years to July 2017, compared to an 18 per cent increase for the rest of New Zealand (Tuatagaloa, 2017).

This in turn has affected home ownership rates, which have been decreasing since 1991. In 2013, 62 per cent of households in Auckland owned the dwelling they lived in, compared with 73 per cent in 1991. Greater proportions, and numbers, of Auckland households are now renting. For example, at the 2013 Census, the percentage of households who rented their home (i.e. paid rent) was higher in Auckland than in any other region of New Zealand, at 35 per cent (up from 32% in 2006) and the majority of these households (81% in 2013) were renting privately (Goodyear and Fabian, 2014:45-46, cited in Reid, 2017:1). Increasing house prices (and an associated lack of affordability) have progressively elongated a traditional trajectory from renting to home ownership. As such, renting will be a long-term, possibly permanent, proposition for a growing number of Auckland households (Reid, 2017; Joynt, 2017; Equb and Equb, 2015).

Over the next 30 years, Auckland’s population is expected to increase by up to three quarters of a million people and will put even more pressure on housing stock and affordability in Auckland.

1.2 Introduction to Airbnb

Airbnb is an online community marketplace that connects people looking to rent their homes, rooms or empty space with people who are looking for accommodation. The users of Airbnb include hosts: those who list and rent out their unused spaces, rooms and homes, and travellers or residents: those who search for and book accommodation.

The Airbnb website offers three 'home type' accommodation options for those seeking short-term accommodation:⁴

- 'Entire place' – guests rent the entire unit or house and do not have to share the space or bathrooms with others
- 'Private room' – guests share some common areas, like the kitchen, living room, or bathroom, but have their own private room for sleeping
- 'Shared room' – guests share the entire space and do not have a private room to themselves.

The accommodation type is selected by the 'hosts' when they list their property. Note that an 'entire place' listing on Airbnb is not necessarily a full unit, an entire home or apartment as it includes a range of accommodation types such as a boat or a caravan.

Airbnb was founded in 2008 and has experienced substantial growth since 2010 (Molla, 2017). The model is also constantly evolving and has expanded away from just offering a home sharing service to offering 'experiences', tourist packages and restaurants in some cities (Bosa and Zavery, 2018; Moon, 2018).

It is worth noting here that there are other online accommodation platforms similar to Airbnb operating in Auckland such as Bookabach and Holidayhouses.⁵ Some properties are listed across Airbnb and these other platforms.

1.3 This report

There is very little available research into the implications of Airbnb for Auckland and this report is an important contribution to our understanding of the size and scale of Airbnb in Auckland and of the possible impacts on the private residential rental market.

⁴ Retrieved 24/10/2017, from www.airbnb.co.nz.

⁵ Bookabach showed over 1800 available listings for Auckland and Holidayhouses over 1200 listings. Retrieved 30/11/2017, from www.bookabach.co.nz and www.holidayhouses.co.nz.

Insights into the Airbnb market in Auckland is provided using data from AirDNA. AirDNA is a data and analytics company which aggregates information from the Airbnb website. The company's computers 'visit' every Airbnb listing approximately once every three days, and record the unit's price and whether it is available for rent. It then uses that information to estimate how many days a year a unit is booked for and how much revenue the host received from it.⁶

There are data and methodology limitations when assessing the impact of Airbnb rentals on housing that are important to note here. The primary limitation for data is the difficulties of monitoring online operations. As shown above AirDNA undertakes some predictive modelling in their analytics to supplement publically available data on the Airbnb website. To get around this issue, one would need to access and obtain the required information directly from Airbnb.

Identifying 'entire places' that are listed on Airbnb that would be suitable for long-term rental and would have otherwise been made available on the private residential rental market, if online platforms such as Airbnb were not available is also a significant challenge. Studies that have looked at this aim to measure 'full-time' usage in order to assess Airbnb's impact on the long-term residential rental housing market. The different methodologies used in assessing Airbnb's impact on housing are discussed further in Sections 3 and 5 of the report.

The rest of the report is structured as follows. Section 2 describes the Airbnb story and how it has evolved and shifted over the years. Section 3 outlines the impacts of Airbnb on housing as noted in the literature. Section 4 presents an overview of Airbnb rentals in Auckland from our analysis of AirDNA data, and their impact on the Auckland residential rental market is described in Section 5.

⁶ More information about AirDNA including studies that used AirDNA data is available on their website www.airdna.co.

2.0 An overview of Airbnb

Airbnb is an online platform (website) that enables its users to offer a range of accommodation options to those seeking short-term accommodation. It is part of the rapidly growing and evolving 'sharing economy', generally defined as "an economic system in which assets or services are shared between private individuals, either free or for a fee, typically by means of the Internet" (English Oxford Living Dictionaries, 2017). The sharing economy improves economic efficiency. In the case of Airbnb, it allows individuals and groups to make money from under-utilised assets (their homes, rooms or free space) and at the same time allows other individuals and groups to have access to accommodation that they need without having to own the asset.

This section provides an overview of Airbnb, its history and how it has evolved over time.

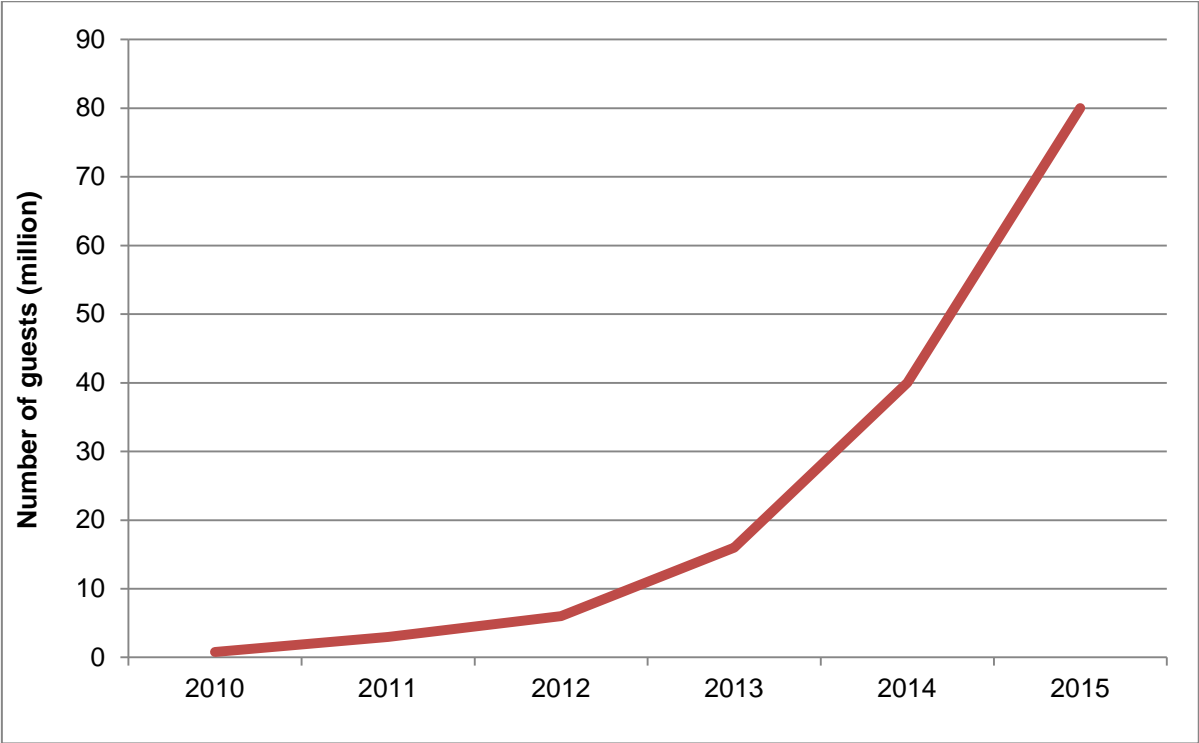
2.1 The Airbnb story

Airbnb was founded in 2008 by roommates who could not afford the rent for their apartment, and decided to put an air mattress in their living room to earn some extra income (Gallagher, 2017). This led to their idea of using the World Wide Web and applications to match unused spaces and homes with those seeking short-term accommodation. After many failed launches and setbacks, Airbnb (originally called airbedandbreakfast.com) is now estimated to be worth over \$30 billion and is one of the world's largest accommodation brands. According to Airbnb, it has connected over 200 million guests, with hosted properties in 65,000 cities, in 191 countries. It describes itself on the website as "a trusted community marketplace for people to list, discover and book unique accommodation around the world."⁷

The Airbnb company headquarters is based in San Francisco, California. The company has had substantial growth since 2010. For example, the number of guests who stayed with an Airbnb host increased from approximately 800,000 in 2010 to 80 million in 2015 (Figure 2).

⁷ Retrieved 24/10/2017, from www.airbnb.co.nz.

Figure 2: Annual global growth in Airbnb guest arrivals, 2010 to 2015



Source: Airbnb, cited in Molla (2017)

The steep rise and popularity of Airbnb has attracted a lot of interest as to the secret behind their success. Studies that examined the reasons why people choose to rent with Airbnb rather than traditional providers of short-term accommodation (e.g. hotels and motels) have reached somewhat contrasting conclusions. As noted in Guttentag (2016) this is probably owing at least in part to the different approaches and motivations considered in each study. Tussyadiah (2015) and Nowak et al., (2015) found those who rent on Airbnb were primarily attracted by economic savings, Lamb (2011) determined they were primarily driven by the desire for authentic interpersonal experiences, and Quinby and Gasdia (2014) found they were primarily attracted by access to household amenities. Guttentag (2016) found that numerous motivations attract guests to Airbnb, with the practical advantages of Airbnb such as lower costs comparatively more important than the experiential aspects (e.g. authentic experiences).

2.2 How Airbnb has evolved

The Airbnb model is constantly evolving. As noted earlier, it has expanded to include 'experiences' and restaurants in some cities, as well as accommodation options (Bosa and Zavery, 2018). While Airbnb has primarily served budget-minded tourists, it has also been attracting a larger share of business travellers (Folger, 2016).

Another notable change is the increasing number of Airbnb hosts who are 'professional investors' (i.e., hosts with multiple listings or more than one property). A study by O'Neill and Ouyang (2016) found that multiple-unit operators are a growing percentage of total Airbnb hosts and are generating a disproportionate share of the company's revenue in 12 major cities across the United States. These multi-unit operators represented 17 per cent of total hosts and generated 39 per cent of revenue. In Vancouver roughly one-third of the city's 3473 Airbnb units in 2015 were controlled by 381 hosts, suggesting intense commercial usage of Airbnb (Sawatzky, 2016). Similarly, in London, 41 per cent of all Airbnb listings belong to hosts who are listing more than one rental (Inside Airbnb, 2017). A study by Priceonomics Data Studio (2017) found that mostly small-scale investors use Airbnb and not professional real estate companies.

The financial benefits of the Airbnb model are attracting investors. An analysis of Los Angeles found that across all of its neighbourhoods it takes an average of just 83 nights per year to earn more on Airbnb than can be earned in a whole year of renting to a long-term renter (Samaan, 2015). The same study reported an example where apartments were actively advertised to be converted to Airbnb units as the prudent financial choice for prospective owners. It showed the net annual income for renting units of a Los Angeles apartment building to local residents was 5.6 per cent compared to a projected rate of return of 13 per cent if rented via Airbnb.

This in turn has led to the rise of ancillary services, designed specifically to cater to the growing number of Airbnb 'investors'. In Auckland for example there are now property management companies offering services to manage these short-term accommodation rentals such as Guest Easy and Pillo (these were set up specifically for Airbnb investors) and My Hotel and Air Rentals that cater to all online short-term accommodation platforms.

3.0 Impact of Airbnb on housing – themes in the literature

The literature reveals a range of implications of Airbnb rentals on housing. It has been argued by some commentators that the growing number of ‘entire places’ on Airbnb that are offered for a large number of days of the year, could lead to a consequent reduction of dwellings in the residential rental market. This is further elevated by the transformation, or evolution, of Airbnb away from the original model of individuals and groups renting out their spare rooms or homes, into a semi-commercialised profit-making endeavour. The concern over Airbnb’s impact on housing affordability has gathered significant attention from policymakers, and has motivated many cities to impose stricter regulations on home sharing (Barron et al., 2017). In addition, the conversion of housing to short-term rentals is driving displacement and gentrification, and beginning to turn formerly residential neighbourhoods into “blocks of hotels” (Portland Tenants United, 2017).

These impacts are discussed further in this section.

3.1 Housing supply and prices

At the time of writing, we found no literature on the impact of Airbnb rentals on housing stock and prices in New Zealand. However, we did find a number of reports in the media that touched on this issue, particularly in the popular tourist areas and areas with housing shortages such as Queenstown and Rotorua (e.g. Flahive, 2018; Shadwell, 2017).

A number of overseas studies however have examined the impact of Airbnb rentals on housing supply and prices. These studies have identified two somewhat contrasting themes which are discussed below.

Airbnb rentals impact housing supply and prices

A substantial body of literature argues that Airbnb impacts negatively on housing supply and prices, particularly in popular tourist areas and areas with a housing shortage.

In terms of home sharing, the literature found that it: 1) raises local rental rates by causing a reallocation of the housing stock; 2) raises house prices through both the capitalisation of rents and the increased ability to use excess capacity; and 3) induces market entry by small suppliers of short-term housing who compete with traditional suppliers (Zervas et al., 2017, cited in Barron et al., 2017:22).

Some of the international studies that found Airbnb rentals impact house prices are outlined below.

- Barron et al., (2017) used a comprehensive dataset of Airbnb listings in the United States from 2012 and 2016 to show that a 10 per cent increase in Airbnb listings leads to a 0.42 per cent increase in rents and a 0.76 per cent increase in house prices.
- An Australian study by Gurran and Phibbs (2017) noted that there is considerable potential for Airbnb (or other online holiday accommodation platforms) to remove whole homes from the permanent rental supply and therefore places considerable pressure on rent, and this is even more marked in certain parts of Sydney.
- Horn and Merante (2016) found that after controlling for factors that influence housing costs such as population growth, income, and employment rates, Airbnb was responsible for \$27 of the estimated average rent increase of \$131 every year in Boston.
- Lee (2016) concluded that Airbnb increases rents in Los Angeles neighbourhoods with a high density of Airbnb listings, reduces supply by encouraging illegal conversion, hotelisation, and evictions and leads to a citywide reduction in affordable housing.
- A study by Dutch bank ING reported that house prices in Amsterdam may have increased 2 to 4 per cent and Airbnb income could increase mortgage size by 10,000 euros (Edwards, 2016).
- In Williamsburg and Greenpoint in New York, commercial units represent around 0.6 to 1.15 per cent of the total rental stock in these neighbourhoods. If these were made available on the residential rental market, the median rent would be reduced by around \$37 to \$69 every month (Stulberg, 2015).

In terms of housing supply, studies that have shown Airbnb rentals impact housing stock include:

- Wachsmuth et al., (2017) which reported Airbnb has removed as many as 13,700 units of housing from rental markets in Montreal, Toronto and Vancouver.
- In New York City, rental units citywide would increase by 10 per cent if the 8058 units defined by the authors as 'impact listings'⁸ were made available on the rental market (BJH Advisors LLC, 2016).

⁸ These were defined as entire apartments/homes, rented by commercial hosts who either rented out multiple units for at least three months per year, or had a single listing rented for at least six months per year.

- Research by Sawatzky (2016) estimated that if every full-time entire-unit listing⁹ was returned to the long-term rental stock in Vancouver, the city's vacancy rate would increase by 0.85 per cent.
- Simcock and Smith (2016) also demonstrated that the number of commercial listings¹⁰ in London had increased by 18 per cent in just four months (between February and June 2016) and this is a potential 13,320 homes that are unavailable for families and workers on a long-term basis.
- The study by Samaan (2015) noted that Airbnb had removed more than 7000 houses and apartments from the rental market in the Los Angeles metropolitan area. This represented “nearly seven years of affordable housing construction at the current rate of housing development”.
- Another report of Airbnb's homebase recorded that between 925 and 1960 units have been permanently removed from the housing market in San Francisco because of Airbnb activity. With a low vacancy rate of 2.9 per cent, Airbnb is removing nearly a quarter of available vacant units from the housing market and in popular neighbourhoods nearly a third of the vacancies (City and County of San Francisco, 2015).

Many of the cities that feature in the studies above are major tourist centres that have housing shortages and affordability pressures. In tight housing markets, Airbnb provides a powerful financial incentive for landlords to take their units off the residential market and turn them into short-term rentals or to purchase or build cabins, studios, conversion, apartments specifically for leasing and profiteering through Airbnb and other 'home share' type platforms (Samaan, 2015).

Speakers at the round table event organised by the International Federation for Housing and Planning (IFHP) on 'The impacts of Airbnb in European Cities' agreed that the impact of platforms such as Airbnb is mostly a matter of opinion because the data from Airbnb are restricted and bound by privacy protection regulations. However, the generalised feeling is that it is causing pressure on the housing market, due to the increasing demand for short-term rentals, leading to an increase in housing prices (IFHP, 2017).

⁹ These were defined as entire unit listings that were frequently and recently booked and with calendars that show them as highly available. Frequently rented are listings rented for at least 90 days per year, recently rented are listings that have been reviewed at least once within the last six months (based on a review rate of 50%) and highly available is also 90 days per year.

¹⁰ These were defined as entire home/apartment available for more than 90 nights per year.

Airbnb rentals have a minimal impact on housing supply and prices

On the other hand, only a few studies have found Airbnb rentals have a minimal or no impact on housing supply and prices. A survey of housing experts in the United States found that the majority (90% of the 111 experts surveyed including economists and researchers) considered that short-term rentals like Airbnb and HomeAway have little to no impact on housing supply and affordability (Bautista, 2016).

Airbnb's impact is probably still small in most cities, because the portion of Airbnb units being let commercially is insignificant. A study of 25 cities across the United States between June 2015 and May 2016 estimated nearly 9000 commercial listings¹¹, only 10 per cent of Airbnb's total listings in those markets and less than one per cent of all rental units. These commercial listings however represent a third of all host revenue. This is a concern as it could give Airbnb an incentive to focus on attracting more commercial investors as it seeks to grow (Stulberg, 2016).

Airbnb in response to criticisms about their impact on housing also commissioned reports to assess this. For example, Wilkerson et al., (2016) found that Airbnb had "minimal, if any," impact on Portland's housing affordability crisis. This is because only a small number of Airbnb listings were operated as full-time rentals¹². Another Airbnb report referred to in an article by Garnick (2015) also reported that 80 per cent of the people renting out space in Seattle were doing so with a home in which they live, renting their spaces temporarily while on holiday or away for work or other reasons. On average, an entire unit in Seattle would need to be rented short-term on Airbnb for 157 days per year to make the same amount of money as having a long-term tenant and only 296 of the almost 3000 listings (just under 10%) are rented above that threshold (Garnick, 2015).

3.2 Displacement

The growing popularity of Airbnb is also blamed for transforming neighbourhoods especially in popular tourist destinations (Barber, 2016).

A report by Gurran and Phibbs (2017) noted that in areas of high Airbnb visitation in Sydney, there is growing concern over tourist behaviour in residential neighbourhoods and apartment buildings, particularly when whole homes or apartments are offered by absent hosts on a permanent or semi-permanent basis.

¹¹ These were defined as units that were rented at least 180 days each year.

¹² These used the common thresholds of over 270 nights rented and over 180 nights rented.

The Portland Tenants Association also agreed that Airbnb was exacerbating Portland's housing crisis. It claimed neighbours are being replaced by tourists, and commercial districts are losing businesses that provide services to residents, such as laundromats, barber shops, and corner grocers, to be replaced by high-end shops and restaurants that would primarily appeal to tourists (Portland Tenants United, 2017).

In Amsterdam, van der Zee (2016) argues that Airbnb is not only having a negative effect on life in these neighbourhoods but it is also contributing to gentrification as it drives up real estate prices that are already high. In New Orleans a 'neighbours, not tourists' campaign argued that Airbnb rentals erode local communities. As summed up by a resident of New Orleans:

I gained a front-row seat to this phenomenon when I moved to New Orleans in early 2013. Since then, I've seen entire blocks in the Bywater neighbourhood converted to short-term rentals, most operated by absentee landlords. Vacancies in the area are few; rents have gone up. Long-term neighbors have been replaced by flows of vacationing strangers. You can't blame Airbnb for all of this, but it's past due we figured out what damage the industry has done – and how to roll it back (Zaitchik, 2016).

In San Francisco, many professional landlords are removing rent-controlled housing, and are evicting thousands of people in the city. Some of those evicted are tenants who sublet some or all of their units on Airbnb and have breached their tenancy agreements (Coldwell, 2014). The 'Airbnb-ing' of San Francisco has seen seniors, families, and low-income tenants being pushed out and what some have called a "massive rezoning of the entire city for tourist use" (Hill, 2015).

3.3 Regulation and the law

As noted earlier, the concern over Airbnb's impact on housing affordability has prompted many cities to impose stricter regulations on home sharing (Barron et al., 2017). There is a conflict playing out however in the tension between growing patterns of home sharing (such as Airbnb) and existing regulations that prohibit such sharing (Jefferson-Jones, 2015).

Legal restrictions on short-term rentals are usually undertaken at a city level and these vary greatly from place to place (refer to examples provided in Table 1). In some cities the restrictions are quite severe and make most short-term rentals illegal.

Table 1: Examples of cities and their regulatory requirements for short-term rentals

	Regulatory requirements	Actions taken
Barcelona	Any residence rented to tourists must be registered with the Tourism Registry of Catalonia. Owners face fines of up to €60,000 for not complying.	In 2014, Airbnb was fined €30,000 and in 2015, €65,000 for a serious breach of laws. In 2016, Airbnb was fined €600,000 for continuing to advertise unlicensed flats on its platform. The Council has doubled the number of investigators seeking out illegal rentals.
Amsterdam	The owner(s) can rent out their property for a maximum of 60 days at a time, and to no more than four people at a time. This limit will be reduced to 30 nights per year in 2019.	In October 2015, an Airbnb owner was fined €24,000. In February 2016, more than \$1 million was allocated to gather facts about illegal rentals. In February 2017, a €297,000 fine was levied on a landlord and agency.
Santa Monica	In 2015 it was mandated that hosts will have to live on the property during the renter's stay of less than 30 days, register for a business licence, and collect the city's 14 per cent occupancy tax.	Nine months after the regulations took effect, the city had issued 650 violations, with the vast majority going to Airbnb and Vacation Rental By Owner (VRBO).
Austin	In February 2016 the advertising of unlicensed short-term rentals was banned.	
Miami Beach	In March 2016, the city code was amended to allow fines of up to \$20,000 for renting out a property for less than six months at a time.	Since the new fines have been in place, Miami Beach has levied \$1.59 million against short-term landlords.
Berlin	In May 2016, landlords were forbidden from renting out apartments to short-term visitors, with a penalty of up to \$113,000 should they choose to do so. The exceptions: people can rent out rooms, as long as they don't cover more than 50 per cent of the entire floor space; and landlords can still apply for short-term rental permits.	
San Francisco	In June 2016, a new law was signed that penalises rental websites that post properties for owners who don't have a city permit or who exceed the number of nights allowed to rent (no more than 60 days per calendar year if the unit was registered on or after Oct. 11, 2016). The new law places the burden of enforcement on Airbnb who would pay a \$1,000 fine daily for every unregistered host on their platforms.	
New Orleans	In October 2016, a ban on short-term rentals in the French Quarter (except for a small stretch along the Bourbon Street entertainment district) came into effect. There was also a limit on whole home rentals to out-of-town guests of up to 90 days a year.	
New York	In October 2016, a law came into effect banning short-term rentals on home sharing sites. Renting out an entire apartment for a stay of less than 30 days was illegal - and even advertising such a rental was illegal, with fines of up to \$7,500.	In February 2017, two individuals were fined \$17,000 between them for renting out a residence for fewer than 30 days.

	Regulatory requirements	Actions taken
Reykjavik	As at January 2017, people can rent out their apartments for up to 90 days per year before needing a hospitality licence. They can also earn a maximum of one million Icelandic kronor per year. Prospective Airbnb hosts need to get their property registered, which requires meeting health and safety regulations.	Icelandic police are taking violators seriously and have raided several Airbnbs believed to be operating illegally.
Paris	From December 2017 hosts will need to register their properties with local authorities. Owners wishing to rent their property on Airbnb are allowed to buy up to a maximum of 120 days per year.	Authorities randomly carry out raids.

Source: LaGrave (2017) and Fishman (2017)

Note: The list is not exhaustive. Check with relevant authority for most up-to-date legislation as these may have changed since the time of writing.

The enforcement and ongoing monitoring of any legal restrictions on short-term rentals is difficult because there are no systems in place for local authorities to keep track of who is renting on Airbnb (see for example Oskam and Boswijk, 2016). In addition, the resourcing required to monitor and enforce these are significant and therefore are usually not actively being undertaken. In fact, most often enforcement efforts are undertaken only when neighbours complain (Fishman, 2017).

The challenge remains for governments to develop policies that help all parties comply with fair and reasonable regulations, rather than trying to completely ban some homeowners' primary source of income (Michels, 2017). For example, determining whether to restrict rentals based on neighbourhood density, to limit the number of properties a host can list, or to require rentals to obtain a licence or permit number is part of these ongoing conversations (Barber, 2016).

There is also the argument that these services that offer short-term accommodation should be treated in the same way as hotels and motels which are generally far more tightly regulated. For example, there is a lack of transparent regulation that cover Airbnb rentals under local housing laws and regulations as well as public health and safety concerns, noise complaints and so forth. There is also the threat of unfair competition through tax evasion and a lack of business licensing requirements (Gurran and Phibbs, 2017).

With the increasing pressure from governments Airbnb is aware of the need to adapt. Airbnb has updated its terms of service to inform its users of local laws and taxes, emphasising the host's responsibilities to comply with them. Airbnb is also working alongside a number of governments to make it easier for hosts and guests to pay their share of hotel and tourist taxes (Airbnbcitizen, 2017) and in some cases provide

a registry of Airbnb rental properties to governments who request them (Zaleski, 2017).

3.3.1 New Zealand context

In New Zealand, Airbnb rental income is taxable under the Income Tax Act 2007. Airbnb rentals whose gross rental income exceeds the threshold of \$60,000 are also required to be registered and to pay goods and services tax (Home Legal, 2017). Taxes are administered by central government through the Inland Revenue Department.

In addition, local councils may also impose additional requirements for visitor accommodation such as business rate charges and/or resource consent application charges. At the time of writing this report, two councils have introduced a rating policy that cover online accommodation providers such as Airbnb. Queenstown Lakes District Council in response to its severe housing shortage was the first council in New Zealand to introduce a business rate for online accommodation providers based on intended booked nights. It also requires registration and resource consent for some categories, less than 28 nights is residential, 28 to 179 nights is mixed use and 180 or more nights is business (O'Connell, 2017). In another popular tourist destination Rotorua, the Council has introduced a rating policy which allows properties offering short-term accommodation to be rented for a total of 100 days before becoming liable for a business rate. Rotorua Lakes Council is moving to more proactive monitoring and enforcement and relies on property owners to disclose the level of use, or in some cases members of the public to bring it to their attention (Flahive, 2018; Eriksen, 2017).

In June 2017, Auckland Council approved a targeted rate on commercial accommodation providers. It is currently assessing a proposal for the inclusion of online accommodation providers under this targeted rate (Niall, 2017). This work involves looking at how to identify individuals and groups who are renting on Airbnb, determining the level of threshold in which to apply the business rate on short-term rental accommodations and how this rule will be monitored and enforced on an ongoing basis.

4.0 Airbnb in Auckland

An overview of Airbnb listings in Auckland is presented here using property-level AirDNA data (refer Section 1.2 for information on AirDNA). Since early 2009, there have been 18,305 Airbnb listings in Auckland (to 20 September 2017).

Our analysis is restricted to ‘recently active’ listings in Auckland, which we have defined as listings which had at least one booking in the 12 month period ending 31 August 2017.

The section starts with an overview of the number and geographic distribution of recently active Airbnb listings by all three ‘home types’ in Auckland (refer Section 1.2 for definition of these home types). It then moves to focus only on recently active Airbnb ‘entire place’ listings in Auckland.

4.1 Recently active Airbnb listings

The majority of the 12,370 Airbnb listings in Auckland in the 12 month period to 31 August 2017 had ‘home type’ information available (12,357). The listings were split fairly evenly, as shown in Table 2, between entire place (49%) and private rooms (49%) with a very small proportion of shared rooms (2%).

Table 2: Number of Airbnb listings by ‘home type’ in Auckland, 12 month period to 31 August 2017

Home type	Number of listings	Per cent of total Auckland
Entire place	6105	49
Private room	6028	49
Shared room	224	2
Total Auckland	12,357	100

Source: AirDNA data with authors’ calculations

Half (55%) of all Airbnb listings in Auckland were in the central Auckland local board areas¹³ and a quarter (25%) were in the northern local board areas, which are some of Auckland’s most affluent areas. These are also some of Auckland’s popular tourist areas.

Similarly, when looking at ‘entire place’ listings only, these were largely concentrated in Auckland’s central and north local boards (87%, a higher share than their share of Auckland’s dwellings at 54% as at the 2013 Census). Private room and shared room

¹³ Central Auckland includes Waitemata, Albert-Eden, Orakei, Puketapapa, Maungakiekie-Tamaki, Waiheke and Great Barrier; North Auckland includes Rodney, Hibiscus and Bays, Upper Harbour, Devonport-Takapuna and Kaipatiki; West Auckland includes Henderson-Massey, Waitakere Ranges and Whau; and South Auckland includes Howick, Māngere-Ōtāhuhu, Manurewa, Ōtara-Papatoetoe, Papakura and Franklin.

listings on the other hand were relatively more spread out, with 24 per cent and 31 per cent respectively located in either west or south Auckland, compared with only 13 per cent of entire place listings in these areas.

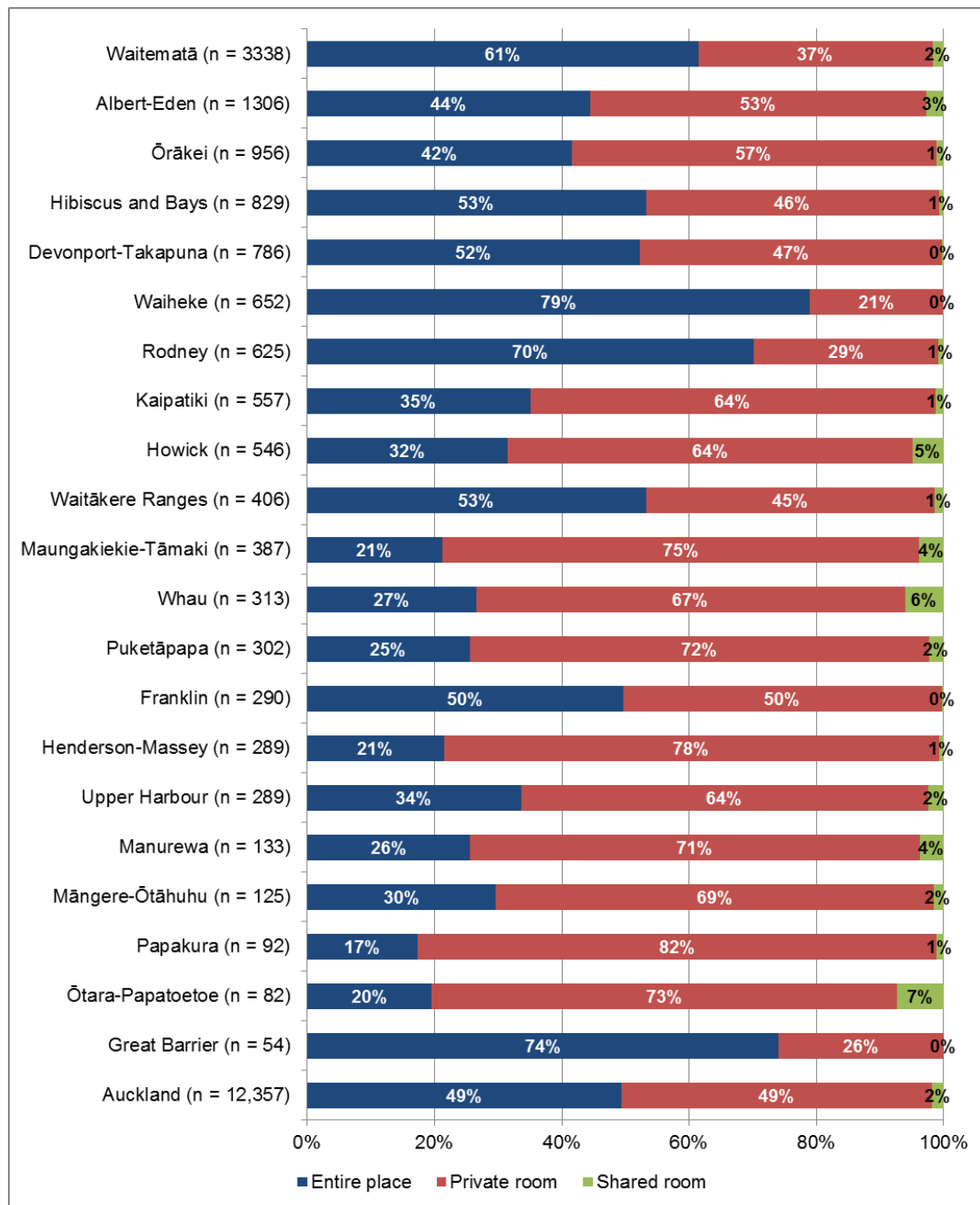
4.1.1 Location by local board area

The Waitemātā local board area had the most Airbnb listings in Auckland (3338 or 27% of the total), followed by Albert-Eden (1306 or 11%) and Ōrākei (956 or 8%). All three of these local board areas are in central Auckland.

When broken down by home type, a much higher proportion of ‘entire place’ listings were located in the Waitemātā local board alone (34%), compared to all Airbnb listings (27% as noted above). Albert-Eden and Waiheke local boards had the second and third highest number of entire place listings, making up 10 per cent and 8 per cent of Auckland’s entire place listings respectively. The top three local board areas for private and shared room listings were Waitemātā (21%), Albert-Eden (12%) and Ōrākei (9%).

Looking at the composition of Airbnb listings by home type across each of Auckland’s 21 local boards showed some interesting results (Figure 3). A significant proportion of Airbnb listings in Waiheke, Great Barrier and Rodney local board area were entire places – 79 per cent, 74 per cent and 70 per cent respectively. This compared to the local board areas of Papakura, Henderson-Massey and Maungakiekie-Tāmaki where the majority of their Airbnb listings were private rooms (82%, 78% and 75% respectively). This suggests the majority of Airbnb listings in the popular tourist areas are ‘entire places’ whereas across the rest of Auckland they are mainly ‘private rooms’.

Figure 3: Proportion of Airbnb listings by home type in each local board area in Auckland, 12 month period to 31 August 2017



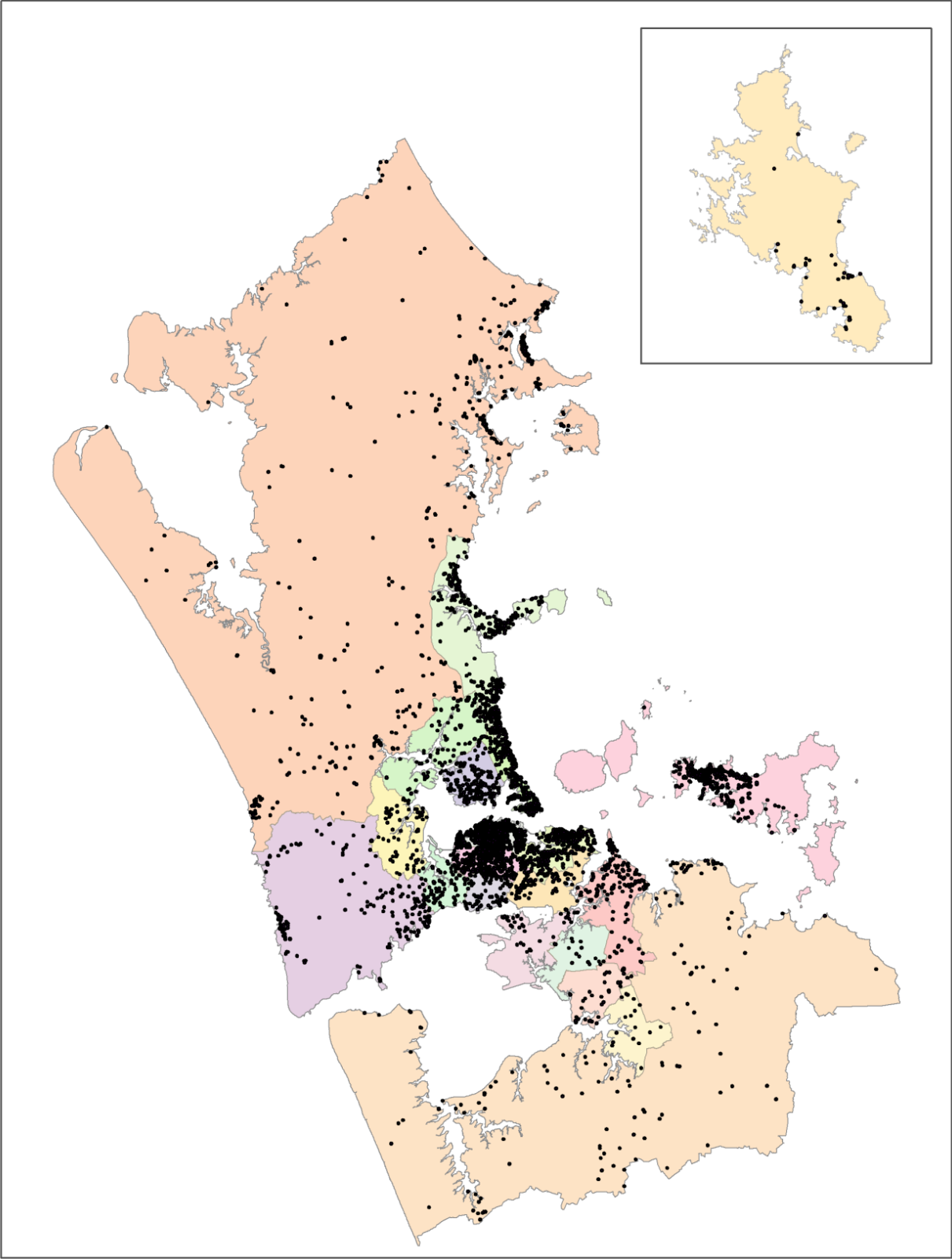
Source: AirDNA data with authors' calculations

Note: Local boards are ordered according to the total number of recently active listings in each local board area.

The spatial distribution of Airbnb listings for entire place, private rooms and shared rooms are depicted in Figures 4, 5 and 6 respectively.¹⁴

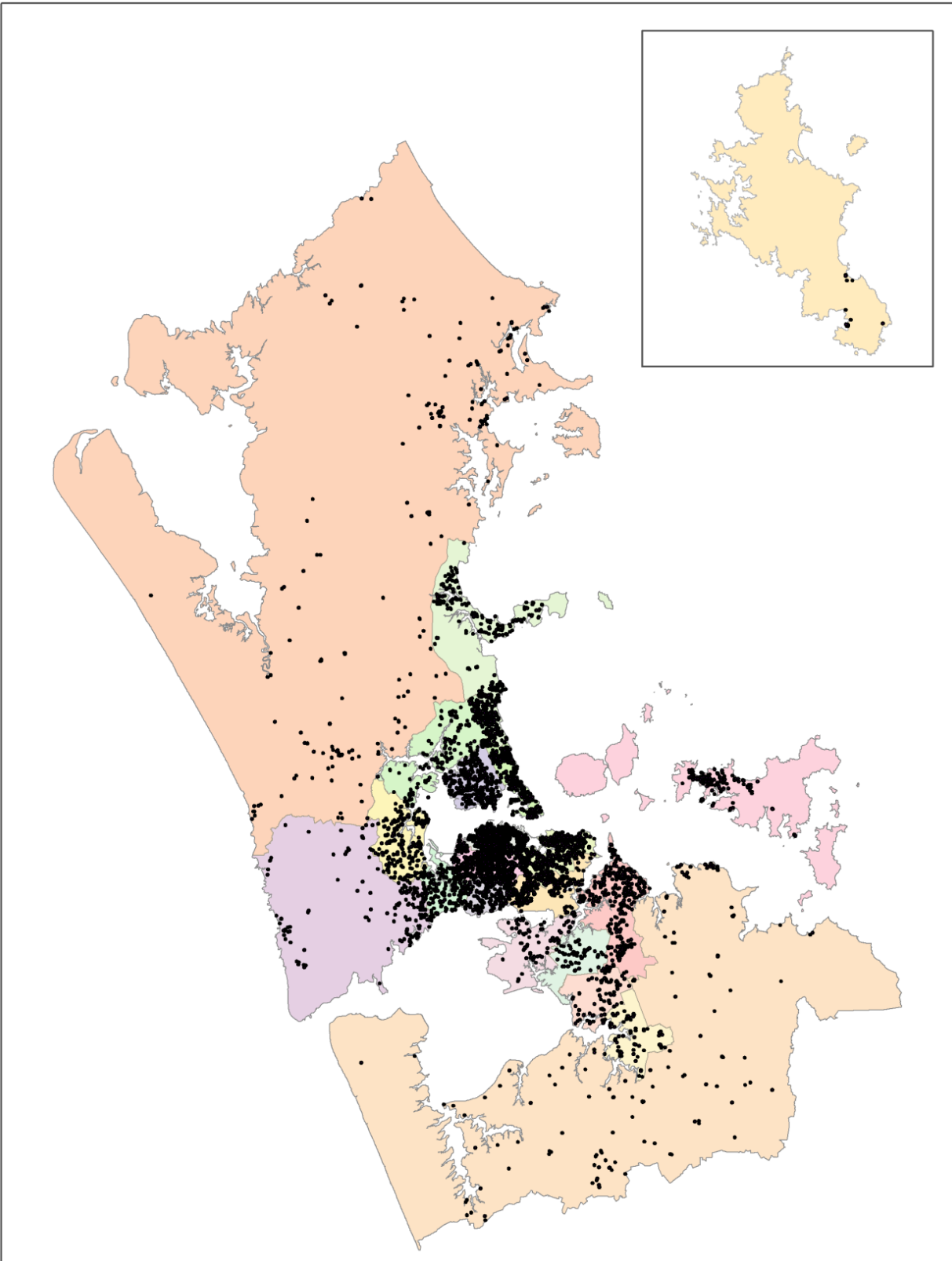
¹⁴ It should be noted that the listing locations shown in Figure 4, 5 and 6 (and from which our location tables have been derived) are only approximate – AirDNA provides latitude and longitude values which the authors estimate are accurate to within approximately 200 metres. Colours on the maps show the local board areas.

Figure 4: Spatial location of Airbnb entire place listings across Auckland, 12 month period to 31 August 2017



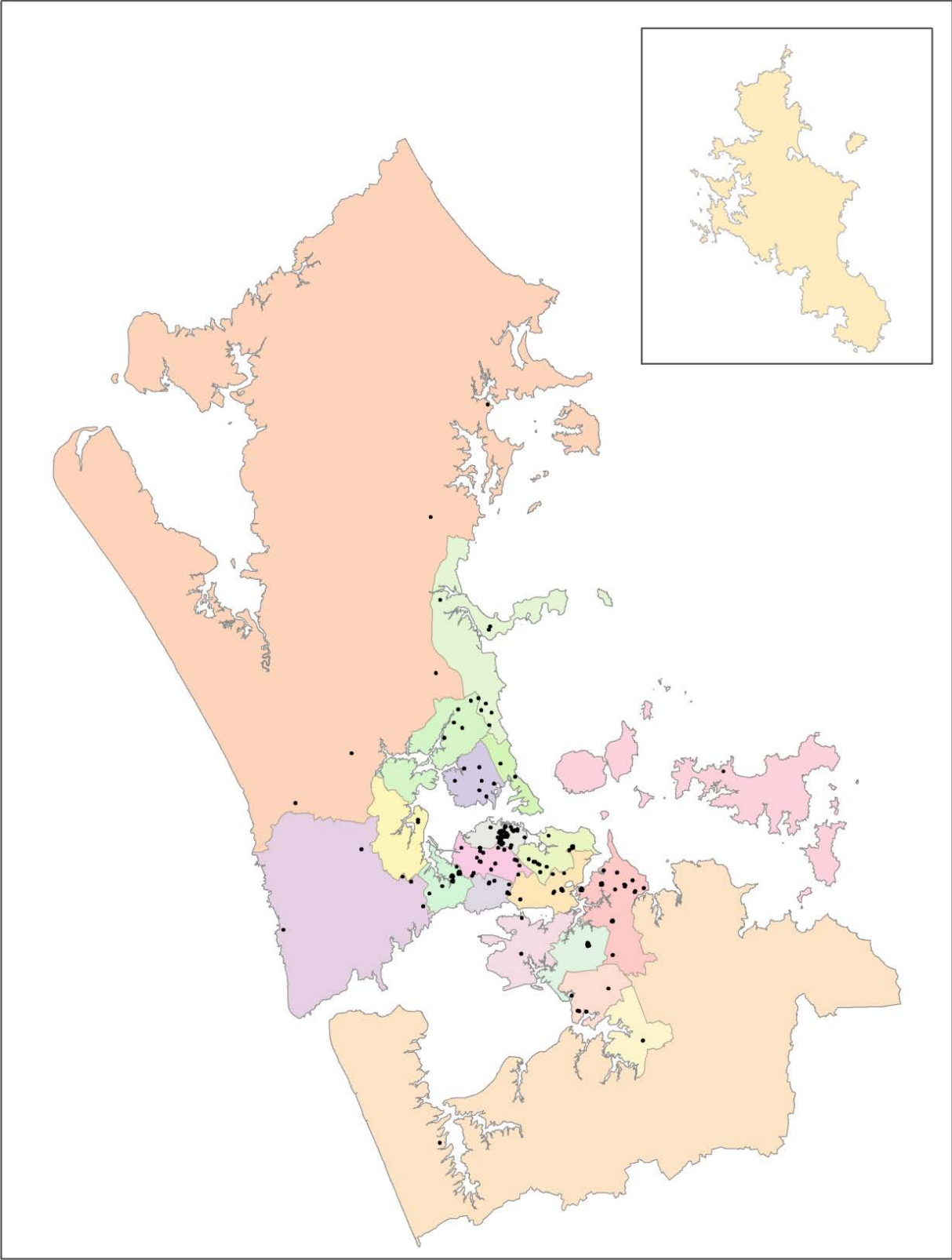
Source: AirDNA data with authors' calculations

Figure 5: Spatial location of Airbnb private room listings across Auckland, 12 month period to 31 August 2017



Source: AirDNA data with authors' calculations

Figure 6: Spatial location of Airbnb shared room listings across Auckland, 12 month period to 31 August 2017



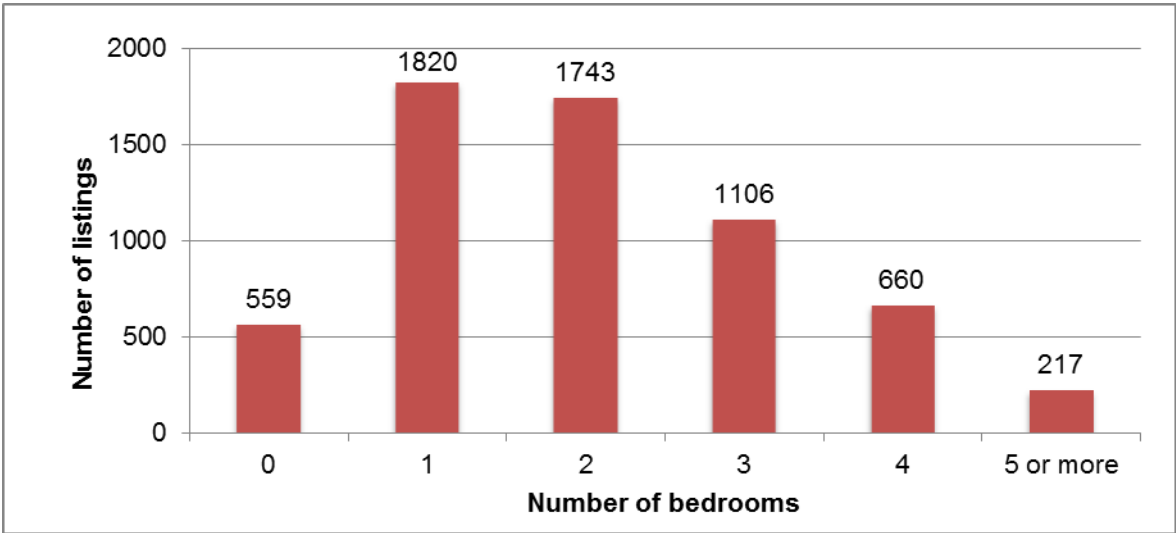
Source: AirDNA data with authors' calculations

4.2 Recently active Airbnb ‘entire place’ listings

When assessing the impact of Airbnb on housing, studies tend to focus only on listings which are classified as ‘entire place’. From the previous section, we identified 6105 Airbnb entire place listings in Auckland. These listings altogether offered a total of 12,400 bedrooms in the year ending 31 August 2017.

The majority of Airbnb entire place listings had two bedrooms or less (68%) as shown in Figure 7. When compared to total dwellings in Auckland, only 26 per cent had two bedrooms or less in the 2013 Census. This suggests that Airbnb rentals predominantly cater for individuals, couples and small families with one or two children. It also suggests Airbnb listings could be impacting on this sector of the private residential rental market (units with two bedrooms or less) which may already be pushed for capacity.

Figure 7: Number of Airbnb entire place listings by number of bedrooms in Auckland, 12 month period to 31 August 2017



Source: AirDNA data with authors’ calculations

4.2.1 Compared to number of dwellings by local board area

As noted in the previous section, the Waitemata local board area, which includes the Auckland city centre, had the most entire place Airbnb listings, with 2052 (or 34% of total entire place listings in Auckland). Fifty-seven per cent of this board’s entire place listings were located in the city centre¹⁵.

¹⁵ As defined by the three census area units Auckland Harbourside, Auckland Central East and Auckland Central West.

In Table 3 we compare the number of entire place listings with the number of occupied and unoccupied private dwellings as at the 2013 Census for each local board area. The 2013 Census is the most recent reliable indicator of dwelling locations available, however we recognise that changes in both the magnitude and spatial distribution pattern of dwellings will have occurred since then, hence this is provided as an approximation only and for illustrative purposes.

Across Auckland as a whole, there were 12.1 entire place Airbnb listings per 1000 dwellings. Consideration of the ratios show that Waiheke, Great Barrier and Waitematā are considerable outliers, consistent with their relative strengths in attracting visitors. This also suggests that lower income areas with housing shortages such as in the south and west of the city are less impacted by Airbnb rentals.

Table 3: Number of Airbnb entire place listings (12 month period to 31 August 2017) and number of private dwellings (2013 Census) by local board area in Auckland

Local board	Entire place listings	Private dwellings	Entire place listings per 1000 dwellings
Waiheke	515	5559	92.6
Waitematā	2052	35,973	57.0
Great Barrier	40	954	41.9
Devonport-Takapuna	411	21,828	18.8
Rodney	438	24,381	18.0
Albert-Eden	580	33,801	17.2
Ōrākei	397	31,125	12.8
Hibiscus and Bays	441	35,181	12.5
Waitākere Ranges	216	17,988	12.0
Kaipātiki	195	29,709	6.6
Franklin	144	25,083	5.7
Upper Harbour	97	18,087	5.4
Puketāpapa	77	17,637	4.4
Howick	172	42,909	4.0
Whau	83	25,113	3.3
Maungakiekie-Tāmaki	82	25,356	3.2
Māngere-Ōtāhuhu	37	18,267	2.0
Henderson-Massey	62	36,108	1.7
Manurewa	34	23,760	1.4
Papakura	16	15,714	1.0
Ōtara-Papatoetoe	16	20,877	0.8
Total Auckland	6105	505,404	12.1

Source: AirDNA data with authors' calculations, Stats NZ 2013 Census

Notes: Local boards are ordered in the chart according to the number of entire listings per 1000 dwellings, as shown in the final column.

4.2.2 Revenue generated

A total of \$89.8 million of revenue was generated by the 6105 entire place Airbnb listings in Auckland in the year to 31 August 2017.¹⁶ Note however that not all of these listings have had a full year's opportunity to earn revenue.

The median revenue earned per night was \$195 for an 'entire place' listed on Airbnb, with the median revenue varying by property size, from \$123 for a studio with no bedroom to \$414 for a four-bedroom listing. These figures compare to \$66 for a private room listing and \$27 for a shared room listing.

The median revenue per night varied considerably across Auckland's local board areas. For example, at \$301, Waiheke had a significantly higher median nightly revenue for a two-bedroom entire place than any other local board – the next highest was Waitemata at \$218. Listings in Manurewa and Papakura local boards had the lowest rates at \$100 and \$77 respectively.

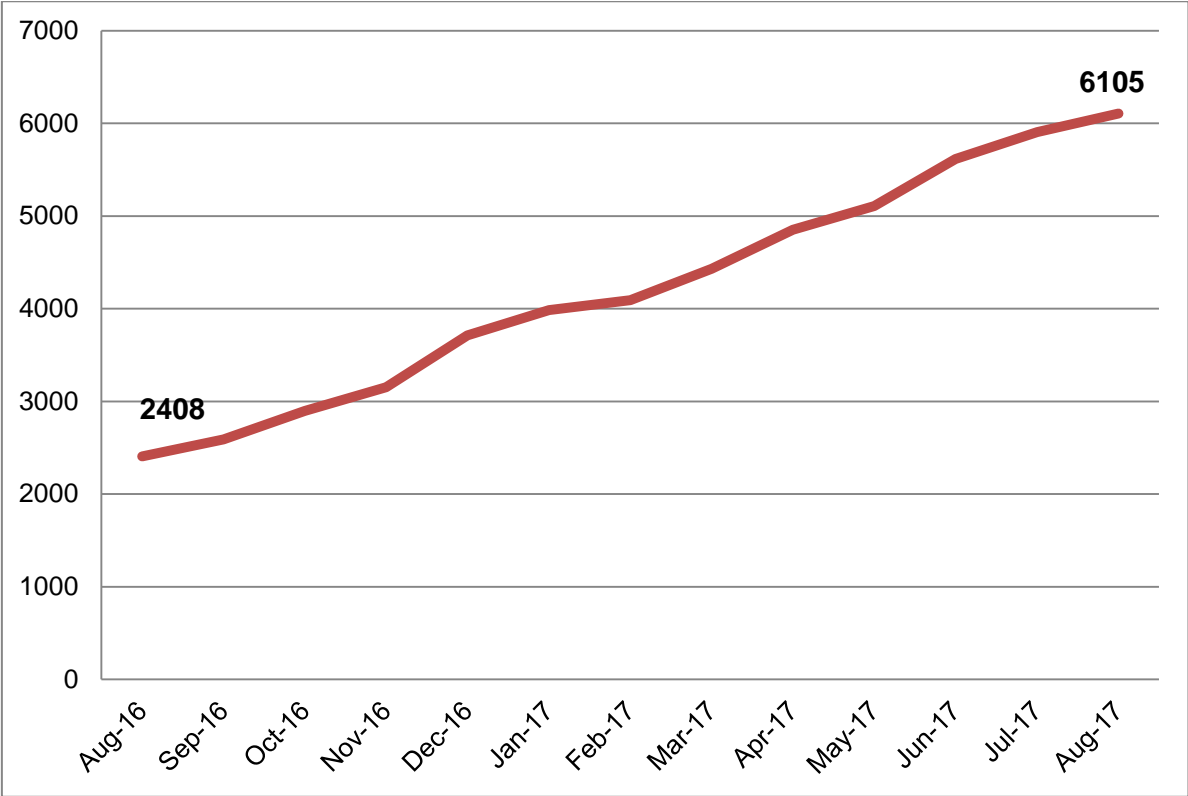
Airbnb entire place listings in Waiheke and Great Barrier have relatively high proportions of two-night stay minimum restrictions (68% and 64% respectively), suggesting the strong degree to which they cater to weekend visitors. In contrast, the five southernmost local boards have the highest proportions of listings with no minimum stay restrictions.

4.2.3 Growth over 12 months

The number of Airbnb entire place listings in Auckland increased significantly over the 12 month period ending 31 August 2017, from 2408 to 6105 (a 154% increase) (see Figure 8).

¹⁶ Refer Footnote 1.

Figure 8: Growth in Airbnb entire place listings from August 2016 to August 2017



Source: AirDNA data with authors' calculations

Note: To generate this chart, the 12 month histories for each listing at each of the given months was assessed; listings are counted for the given month if listing had at least one booking in the 12 month period prior.

Entire place listings in the Waitematā local board area experienced a similar growth rate during this period (157%), whereas Waiheke experienced a more modest 67 per cent increase.

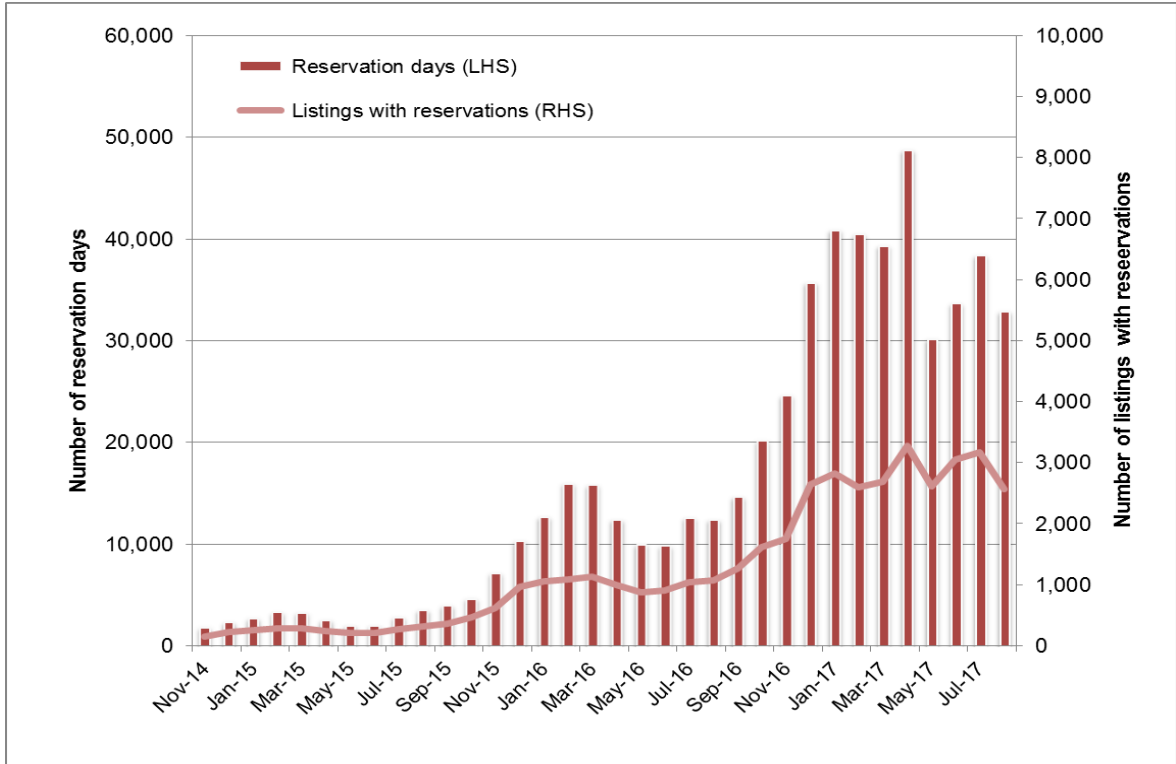
Of interest is the strong percentage growth of entire place listings in some suburban areas, such as the Howick local board, which experienced a 187 per cent increase in listings, Henderson-Massey (a 288% increase) and Upper Harbour (over 400%). While absolute numbers in some of these areas are low (for example, Henderson Massey listings increased from just 16 to 62 over the 12 month period) it does suggest Airbnb entire place listings are expanding out into the suburbs in addition to more traditional visitor and tourist locations.

4.2.4 Seasonality

Looking only at activity over 12 month periods, as above, understates the volatility and churn in Airbnb listings, which is due in part to rapid growth and in part to seasonality. We therefore show in Figure 9 the number of Airbnb entire place listings with reservations and total reservation days from December 2014 to 31 August 2017.

The number of entire place listings as well as reservation days has been generally trending upwards since the end of 2014. In addition to the rapid growth, booking activity is also highly seasonal with more activity generally observed in the summer months (as illustrated by the localised peak in February 2016). 2017 was an exceptional year, with a number of major events occurring in Auckland. The highest number of Airbnb reservations days and listings with reservations was recorded for the month of April 2017, with 48,800 and 3280 respectively, which coincided with the World Masters Games. The 2017 British and Irish Lions tour did not have quite as high an impact as the World Masters Games, however there were still significantly much higher Airbnb listings and reservation days in June-July 2017 than in the corresponding period a year earlier.

Figure 9: Growth in Airbnb entire place listings and reservation days from November 2014 to August 2017



Source: AirDNA data with authors' calculations

5.0 Airbnb and housing in Auckland

Concerns have been raised in the literature as noted earlier on the displacement of private long-term rental stock by the increase in entire homes offered for a large number of days of the year on Airbnb. This section describes our assessment of the implications of Airbnb rentals on Auckland's private residential rental market using AirDNA data.

It starts with defining a full-time Airbnb listing, followed by the characteristics of these full-time listings in Auckland and their implications on private residential rentals.

5.1 Defining 'full-time' listings

It is difficult to accurately identify Airbnb rentals that would otherwise have been made available on the private residential rental market if online platforms such as Airbnb were not available. Studies that have looked at this aim to measure 'full-time' Airbnb usage in order to assess Airbnb's impact on the long-term residential rental housing market. This requires establishing a threshold for separating entire place listings on Airbnb that are also the primary residence for the host from those which are rented or available to be rented on Airbnb enough that they probably are not.

Different reports use different thresholds, and a commonly used one is the number of days a unit is booked for. Our analysis used the methodology that was developed by Wachsmuth et al., (2017) to assess Airbnb's impact on Canadian housing markets. In addition to the listing being for an entire place (not just a room within a larger unit), they used a combination of two metrics to estimate full-time Airbnb usage. That is, the property needed to:

- have been booked for 60 days or more in the year; and
- have been available to be booked for 120 days or more in the year.¹⁷

It is worth noting here that the host-determined classification of their home type as mentioned in Section 1.2, means that care must be taken to ensure the actual 'entire place' listing is a full unit and not just a room and bath, a caravan or a boat, which would not necessarily be ideal as a long-term residential rental.

¹⁷ Refer Footnote 3.

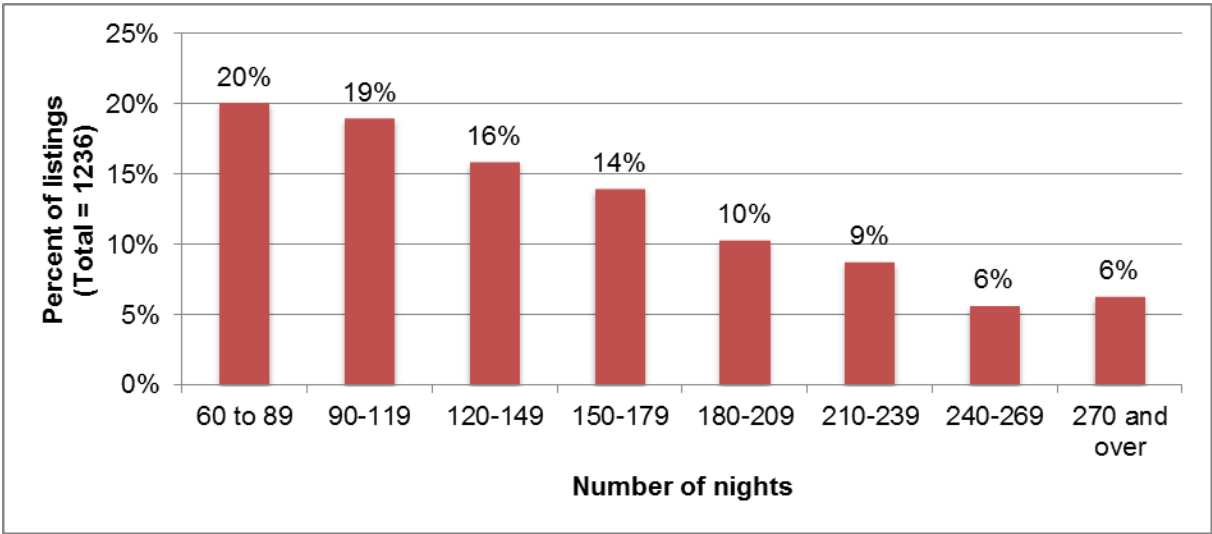
5.2 Airbnb full-time listings in Auckland

Our findings showed 1236 Airbnb listings were considered to be in full-time usage in Auckland. These listings generated a total revenue of \$41.6 million in the 12 month period to 31 August 2017. The median revenue for full-time listings was \$27,324.

The distribution of full-time listings by number of bedrooms is similar to that of entire place listings where the majority were two bedrooms or less. As noted earlier, this suggests Airbnb listings could be impacting on this sector of the private residential rental market (units with two bedrooms or less) which may already be pushed for capacity.

Thirty-one per cent of full-time listings in Auckland were booked for 180 days or more (see Figure 10). The median number of days a full-time listing is booked for in the 12 month period ending 31 August 2017 was 139 days.

Figure 10: Proportion of Airbnb full-time listings by number of reservation days, 12 month period to 31 August 2017



Source: AirDNA data with authors' calculations

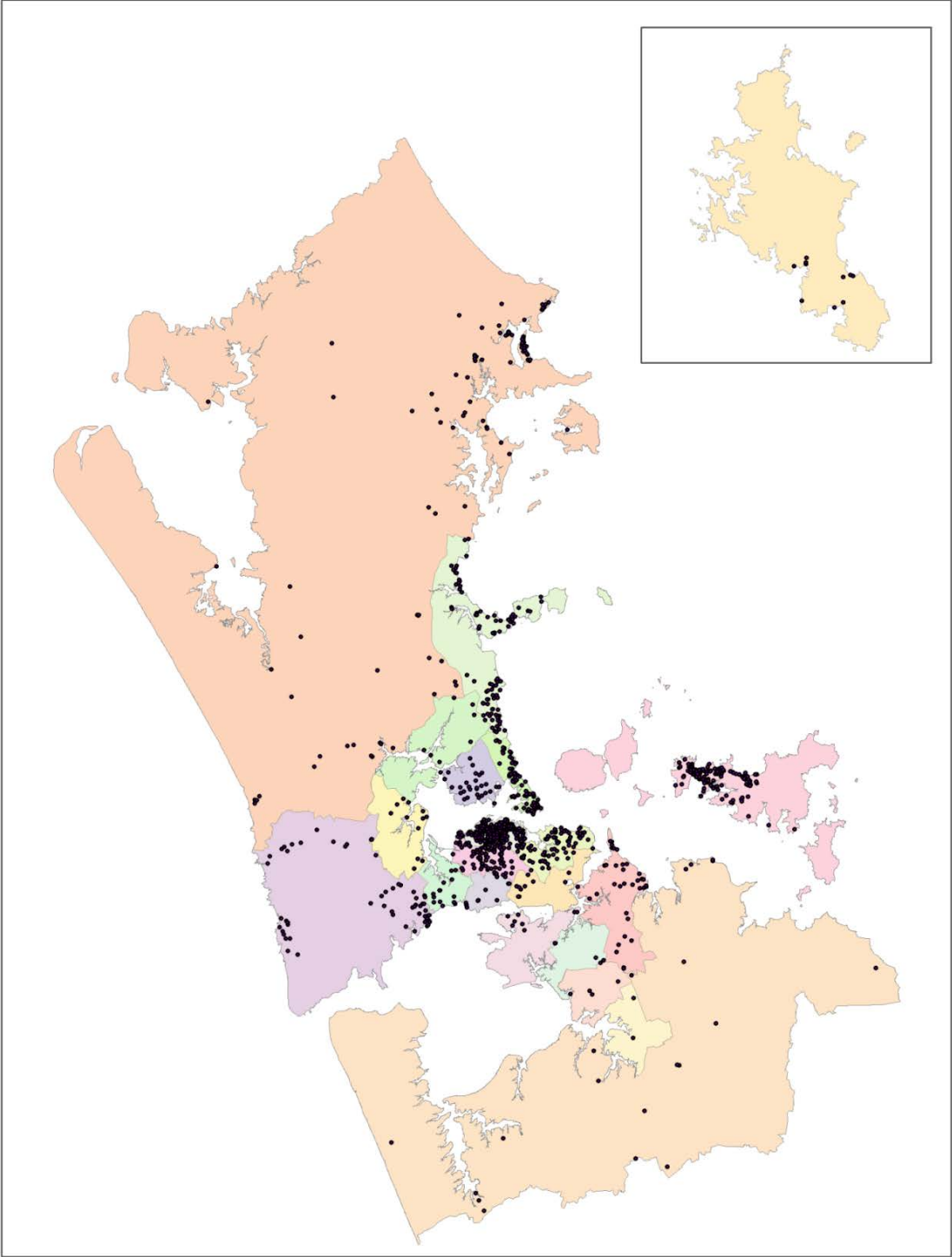
5.2.1 Location by local board area

Three-quarters of Airbnb full-time listings were concentrated in the six local board areas of Waitemata, Waiheke, Hibiscus and Bays, Albert-Eden, Rodney and Orakei located in central and north Auckland. This is a similar proportion to entire place listings with 72 per cent in these six local board areas. However only 2 per cent (or 19) of Airbnb full-time listings were in the four southern local board areas of Mangere-Otahuhu, Otara-Papatoetoe, Manurewa, and Papakura.

The most, one in three, were located in the Waitematā local board area (see Table 5). Waiheke had the second highest number of Airbnb full-time rentals (156, or 13% of total Airbnb full-time rentals in Auckland).

The spatial distribution of Airbnb full-time listings is depicted in Figure 11.

Figure 11: Spatial location of Airbnb full-time listings across Auckland, 12 month period to 31 August 2017



Source: AirDNA data with authors' calculations

5.2.2 Hosts with multiple listings

Of interest as noted in Section 2.2, is the growing number of Airbnb hosts with multiple listings.

We found that eight per cent (or 104) of full-time listings in Auckland were affiliated with five hosts (as identified by their unique host identification number) and each had more than 10 full-time listings (Table 4). Upon further investigation we found that four of these ‘hosts’ have, in addition to their Airbnb presence, their own individual property management websites. As noted in Section 2.2 there is an increase in property management services designed specifically to cater to the growing number of Airbnb investors.

A further 257 listings (21% of listings) are affiliated with hosts or hosting entities that have between two and 10 listings. The majority of listings (71%) are hosts with one listing only, consistent with the literature. These hosts combined earned 64 per cent of total revenue.

Table 4: Number of hosts with Airbnb full-time listings, 12 month period to 31 August 2017

	Number of hosts	Number of listings	Reservation days	Approx revenue NZD	Median revenue per night
Hosts with more than 10 listings	5	104	15,259	\$5,237,909	\$254
Hosts with 2-10 listings	94	257	38,568	\$9,948,930	\$223
Hosts with 1 listing only	875	875	132,922	\$26,460,283	\$164
Total full-time listings	975	1236	186,749	\$41,647,122	\$183

Source: AirDNA data with authors’ calculations

5.3 Impact on the supply of residential rentals

We used an approach similar to Gurrán and Phibbs (2017) to assess the potential for Airbnb rentals to affect the supply of Auckland’s residential rental accommodations. Their report compared ‘frequently available Airbnb whole home listings’ which we have defined as full-time listings with the rental housing stock from census data. We compiled these indicators for the 21 local board areas in Auckland in Table 5, including the average weekly revenue of Airbnb full-time listings (in the 12 month period to 31 August 2017) and the average weekly residential rent based on new bonds lodged with the Ministry of Business, Innovation and Employment (MBIE)

Tenancy Services as at July 2017. Note that the 2013 Census is the most recent reliable indicator of rental dwellings locations available, however we recognise that changes in both the magnitude and spatial distribution pattern of dwellings will have occurred since then, hence this is only an approximation of the proportion of Airbnb full-time listings to rental dwellings in Auckland. An indicator that is also used in a number of reports to measure the potential housing market impact of Airbnb listings is the rental vacancy rate however, this is currently not being compiled for Auckland.

At the regional level, our findings showed entire place listings which we estimated to be offered on Airbnb on a full-time basis represent just under one per cent of all rental dwellings (and 0.2% of total dwellings) in Auckland as at the 2013 Census. These findings suggest that Airbnb full-time listings is insignificant in terms of the total dwelling and rental stock in Auckland and as such are likely to have had no or a minimal impact on the private residential rental market at a macro level.

This plays out differently across Auckland's local board areas however. For example, while Waitemata had the majority of Airbnb full-time listings (33%), these listings represent only 2.4 per cent of total rental dwellings in the area as at the 2013 Census. Across the other local board areas, it is estimated Airbnb full-time listings also made up an insignificant proportion of their rental stock. This suggests that across most of the local board areas, Airbnb had very little impact on the private residential rental stock. As shown in Table 5, these local board areas also had lower average weekly revenue for Airbnb full-time listings (during the 12 month period to 31 August 2017) compared to the average weekly rent for residential rentals (based on new bonds lodged with the MBIE Tenancy Services in July 2017).

However, in some of the popular tourist areas, we estimate that there is potential for Airbnb to impact the private residential rental market. In Waiheke for example, the number of entire place listings frequently available for rent on Airbnb was equivalent to 16 per cent of the island's rental stock (and 3% of all dwellings) as at the 2013 Census. In a tight housing environment, this is likely to have an impact on house prices and could be explained by the 15 per cent increase in the average weekly rent for Waiheke based on new bonds lodged with MBIE's Tenancy Services from July 2015 to July 2017 (the highest increase across all local boards during this period).¹⁸

In addition, Airbnb full-time rentals on Waiheke have the highest average weekly revenue (\$998) over the 12 month period to 31 August 2017 across all local board areas. This was also nearly twice as much as the average weekly rent for residential rentals on the island (\$507) based on new bonds lodged with the Ministry of Business, Innovation and Employment (MBIE) Tenancy Services in July 2017. This

¹⁸ Sourced from MBIE's customised local board tenancy bond data. Further information on MBIE's lodged rental bond data is available from <http://www.mbie.govt.nz/info-services/housing-property/sector-information-and-statistics/rental-bond-data>

could provide more incentive for further investment for short-term rentals on the island given the expected returns from Airbnb. The risk for these popular locations and particularly in a housing shortage environment is that, over time the mortgage relief from Airbnb might become further capitalised into already high house prices.

Table 5: Number of Airbnb full-time listings, rental dwellings and other indicators by local board area in Auckland

	Dwelling not owned and not held in a family trust and rent paid (2013 Census)	Full-time Airbnb listings (12 months to 31 August 2017)	Full-time Airbnb listings as proportion of dwelling not owned and not held in a family trust and rent paid	Full-time listings' average weekly revenue (12 months to 31 August 2017)	Average weekly rent for new bonds lodged with MBIE Tenancy Services (July 2017)
Waitematā	16,770	404	2.4%	\$706	\$522
Waiheke	984	156	15.9%	\$998	\$507
Hibiscus and Bays	7236	97	1.3%	\$487	\$591
Albert-Eden	12,528	94	0.8%	\$593	\$579
Rodney	4173	92	2.2%	\$514	\$510
Ōrākei	7491	85	1.1%	\$640	\$673
Devonport-Takapuna	5808	79	1.4%	\$551	\$611
Waitākere Ranges	3744	61	1.6%	\$493	\$493
Howick	10,146	36	0.4%	\$552	\$584
Kaipātiki	8445	30	0.4%	\$468	\$527
Franklin	5265	20	0.4%	\$347	\$469
Whau	7998	14	0.2%	\$410	\$523
Henderson-Massey	11,205	11	0.1%	\$464	\$489
Maungakiekie-Tāmaki	10,968	10	0.1%	\$508	\$505
Great Barrier	78	10	12.8%	\$433	N/A
Puketāpapa	6270	10	0.2%	\$617	\$589
Upper Harbour	4386	8	0.2%	\$531	\$544
Māngere-Ōtāhuhu	8292	8	0.1%	\$501	\$438
Manurewa	8577	5	0.1%	\$393	\$488
Ōtara-Papatoetoe	8736	4	0.0%	\$337	\$424
Papakura	5250	2	0.0%	\$328	\$485
Total Auckland	154,347	1236	0.8%	\$646	\$533

Source: AirDNA data with authors' calculations, Stats NZ 2013 Census, MBIE customised local board tenancy bond data

Notes: See Footnote 3 regarding calculation of full-time listings.

Local boards are ordered in the chart according to the number of full-time listings, as shown in the second column.

6.0 Concluding comment

Airbnb is growing in Auckland. While its presence is more pronounced in areas with a high tourist demand, it is also slowly expanding out into the suburban areas. Our results show that the impact of Airbnb on private residential rentals in Auckland is very much limited to these areas with a high tourist demand which is made even more prominent by Auckland's housing shortage.

The findings are timely for local and central government as local authorities such as Auckland Council are considering regulating the online short-term rental sector. As Airbnb continues to grow and evolve, further work is required including exchanges of knowledge and experiences on how to deal with the impacts of these online platforms.

For example, to understand the effects of the use of property sharing sites such as Airbnb on house prices, supplementary work could examine the possibility that Airbnb revenue may become capitalised into house prices and rents with the availability of longitudinal data. Such longitudinal information could also explore the trajectory of Airbnb to understand how it has evolved and changed over the years and that of its users (both hosts and travellers).

Further research could also look at the welfare impacts of Airbnb and other home sharing sites. For instance, home sharing may have positive spillover effects on local businesses if it drives a net increase in tourism demand. On the other hand, home sharing may have negative spillover effects if tourists create negative amenities, such as noise or congestion, for local residents.

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