

# Housing preferences for owner-occupied versus investment properties in Sydney, Australia

Ali Ardeshtiri, Lynette Washington, Akshay Vij, Chris Leishman & Andrew Beer

To cite this article: Ali Ardeshtiri, Lynette Washington, Akshay Vij, Chris Leishman & Andrew Beer (21 Nov 2024): Housing preferences for owner-occupied versus investment properties in Sydney, Australia, *Housing Studies*, DOI: [10.1080/02673037.2024.2428749](https://doi.org/10.1080/02673037.2024.2428749)

To link to this article: <https://doi.org/10.1080/02673037.2024.2428749>



Published online: 21 Nov 2024.



Submit your article to this journal 



Article views: 275



View related articles 



View Crossmark data 



## Housing preferences for owner-occupied versus investment properties in Sydney, Australia

Ali Ardeshtiri<sup>a</sup> , Lynette Washington<sup>a</sup>, Akshay Vij<sup>b</sup>, Chris Leishman<sup>a</sup> and Andrew Beer<sup>a</sup>

<sup>a</sup>Business, University of South Australia, Adelaide, Australia; <sup>b</sup>Institute for Choice, University of South Australia, Adelaide, Australia

### ABSTRACT

Exploring the housing preferences between owner-occupied and investment properties sheds light on housing market dynamics and consumer behaviors. Through discrete choice experiments we identify three segments: CBD, suburban, and exurban dwellers, and segment their preferences according to when purchasing a property to live in versus purchasing one as a small-scale investment. Our findings indicate that suburban dwellers are willing to pay \$2.924 million and \$2.246 million more, respectively, to live in a house rather than in an apartment or a townhouse. However, they would pay around \$682,000 more to invest in a house compared to a townhouse. CBD dwellers are willing to pay \$643 per month extra for a newer property and suburban investors would pay around \$540,000 extra for a property near the coast. CBD investors prioritize capital growth, while suburban and exurban investors are more concerned with rental return. All segments prefer Anglo-Australian neighborhoods, with suburban dwellers willing to pay \$1,430 more per month for them.

### ARTICLE HISTORY

Received 26 September 2023

Accepted 6 November 2024

### KEYWORDS

Housing preferences; property investment; owner-occupied; explicit partial profile design; Multiple Indicator and Multiple Cause model

## Introduction

Exploring housing preferences by distinguishing between owner-occupiers and investors is of potential interest to a diverse spectrum of stakeholders, offering a new lens into the dynamics of the housing market and the intricacies of consumer behaviors. The knowledge generated from this strand of research could form a cornerstone for real estate developers, agents, and investors, granting them the ability to precisely tailor their offerings to resonate with distinct consumer demands. This study also generates pivotal knowledge for policymakers regarding the multifaceted tapestry of motivations, needs, and cognitive processes that steer individual and familial decisions on the purchase of residential property. Furthermore, grasping the delicate equilibrium between owner-occupied and investment properties has the potential to equip urban planners with a toolset that enables neighborhood blueprints

that are alluring to residents and investors, while incorporating the ethos of sustainable urban development.

A substantial literature exists on housing preferences based on behavioral orientations such as lifestyle (Beamish *et al.*, 2001; Lee *et al.*, 2007), culture (Amin *et al.*, 2013; Jabareen, 2005), life course (Beer *et al.*, 2011; Kulu & Steele, 2013) or market processes (Jones *et al.*, 2004; Leishman, 2009). Another strand of research has examined specific segments of the population – the elderly (Costa-Font *et al.*, 2009; Costa-Font *et al.*, 2010), first time buyers (Reed & Mills, 2007; Lee & Reed, 2014), low income groups (Opoku & Abdul-Muhmin, 2010), people with mental illness (Tsai *et al.*, 2010), students (Verhetsel *et al.*, 2017; Nijenstein *et al.*, 2015; Khozaei *et al.*, 2014) or Indigenous people (Neutze, 2000; Fien *et al.*, 2008). Some researchers have sought to address inequalities including segregation (Ardesiri *et al.*, 2016; Vigdor, 2003) and affordability (Beer *et al.*, 2007; Linneman & Megbolugbe, 1992; Stone, 2006; Leishman & Rowley, 2012).

Scholars have extensively explored various factors influencing these preferences, however, despite the wealth of research, there exists a notable gap in understanding the specific preferences of a crucial player in the housing market: small-scale investors. While numerous studies on residential property purchasers have delved into the preferences of diverse segments of the population, few have illuminated the distinct behavioral orientations of housing investors. Research into the behaviors and decision-making processes of real estate investors has been dominated by studies of commercial and industrial real estate and published in journals specializing in these fields. Residential property investors in many international contexts, and particularly so in Australia, tend to be small-scale ‘Mum and Dad’ investors (Hulse & Burke, 2016), and their behaviors have rarely been studied explicitly either in real estate finance, economics or housing studies journals. These investors, who play a pivotal role in shaping the real estate landscape, make decisions that impact market dynamics, property values, and urban development. Understanding their preferences is essential not only for investors seeking optimal investment choices but also for policymakers, developers, and researchers striving to comprehend the intricate interplay between investor decisions and broader housing market trends.

In response to this gap, the present study undertakes a comprehensive exploration of housing preferences, homing in on the behavioral differences between owner-occupiers and small-scale investors. This study is anchored in a stated-preference survey within metropolitan Sydney, Australia. Through a latent class analysis of 533 households responding to two discrete choice experiments regarding preferences for property acquisitions—either for owner-occupation or investment purposes—three distinct segments emerge: the urban-dwelling denizens of the CBD, the inhabitants of the suburban enclaves, and the exurban settlers. Each of the three classes harbors a unique constellation of preferences for undertaking property acquisitions which can be further differentiated for owner-occupiers and small-scale investors.

This study aims to widen and nuance the discourse regarding housing preferences. It extends our understanding of how the same household’s preferences differ when purchasing a property to live in versus purchasing one as a small-scale investment. While the study is based in metropolitan Sydney, the approach, methods and

contributions to knowledge have implications for understanding housing systems in other developed economies.

## Literature review

The study of consumer housing choices has predominantly relied on the hedonic price framework introduced by Rosen (1974), which examines how various housing attributes influence decision-making. This literature review categorizes housing attributes into intrinsic and extrinsic factors, as outlined by Zeng (2013). Intrinsic attributes include physical characteristics such as dwelling type, number of bedrooms, and overall housing price, while extrinsic attributes encompass aspects like exterior design, environmental factors, amenities and location.

Research has extensively explored intrinsic attributes and their impact on housing preferences. Wang & Li (2004) investigated Chinese housing markets, revealing a preference for small bedrooms and large living areas, with an emphasis on south-facing dwellings for better sunlight. This preference was similarly noted by Ardestiri *et al.* (2016) in Iranian housing markets, suggesting a cross-cultural preference for spacious, well-lit living spaces.

However, preferences for dwelling types vary. Booi & Boterman (2020) found a clear preference for single-family homes over apartments in Amsterdam, whereas Wang & Li (2004) reported indifference toward dwelling types in China. This divergence highlights regional variations in housing preferences and suggests that cultural and economic factors significantly influence these preferences. Opoku & Abdul-Muhmin (2010) identified a preference for small houses over duplexes and apartments in Saudi Arabia, aligning with Aitken *et al.* (2022), who found that older homebuyers in England preferred bungalows and were willing to pay more for a three-bedroom property. Leishman *et al.*, (2004) concluded that public room configuration including kitchen, utility room, dining room and living room options was the second most important factor for three of the four consumer groups identified in Scotland. These studies collectively underscore the varying significance of dwelling type across different cultural and demographic contexts.

The impact of extrinsic attributes on housing preferences has also been well-documented. Cho *et al.* (2005) observed that residents in Appalachia preferred low-density neighborhoods with minimal crime, reflecting a broader trend of valuing safety and community characteristics. Liao *et al.* (2015) utilized a latent class model to reveal that residents in Utah were willing to pay significantly more for neighborhoods with single-family housing and pedestrian-friendly environments. This finding highlights the importance of neighborhood composition and accessibility in housing decisions.

Ibraimovic & Hess (2018) further explored the impact of travel time on rent expectations, demonstrating that Swiss residents valued reduced commuting times, a preference that reflects a broader desire for convenience and quality of life. Similarly, Ibraimovic & Hess (2018) examined the effect of ethnic composition on residential preferences in Lugano, Switzerland, showing that residents were willing to pay more to live in ethnically homogenous neighborhoods. This study underscores the role of social and cultural factors in housing preferences.

The literature also debates the relative importance of intrinsic versus extrinsic factors in housing choices. Wang & Li (2004) found that neighborhood attributes outweighed dwelling characteristics in Beijing, while Opoku & Abdul-Muhmin (2010) reported that dwelling features were more critical in the Middle East. Lindberg *et al.* (1989) supported this by demonstrating that intrinsic attributes such as cost and size were more predictive of housing preferences than location attributes. These studies suggest that the relative importance of housing attributes can vary significantly based on regional and demographic factors.

Further studies have examined how demographic variables influence housing preferences. Cho *et al.* (2005) found that more educated individuals preferred urban living, while Opoku & Abdul-Muhmin (2010) noted that high-income households preferred houses, and lower-income individuals leaned toward apartments. Wang & Li (2006) identified a preference among younger households for neighborhoods with better amenities, while Choi & Kang (2010) highlighted the elderly's concern for location, economic efficiency, and safety. Wang & Otsuki (2015) focused on marital status and income as key determinants of housing choices among the younger generation in China, with Bourassa (1995) noting an increased likelihood of home ownership with age. These findings reveal how demographic factors shape housing preferences and underscore the need for tailored housing solutions.

While much of the literature focuses on owner-occupiers, less attention has been paid to residential property investors. Oxley *et al.* (2010) highlighted that small-scale investors, who own one or two properties, view real estate as a secure long-term investment, driven by negative gearing and rental income. Newell *et al.* (2015) pointed out that institutional investors have largely avoided the private rental market due to a lack of structured investment vehicles and management expertise, leaving the market unsophisticated and poorly understood.

Seelig *et al.* (2009) and Gallimore & Gray (2002) discussed the impact of market sentiment on investment decisions, noting that irrational decisions often result from overestimating property returns. Kemp *et al.* (2018) found that investors in New Zealand overestimated house value increases while underestimating returns on term deposits. This suggests a need for better understanding of investor behavior and preferences, which our study aims to address.

In summary, while substantial research exists on housing preferences for owner-occupiers, there is a significant gap in understanding the preferences and behaviors of residential property investors. Our study contributes to filling this gap by examining how investor preferences for location and property attributes differ from those of owner-occupiers. By integrating insights from existing studies and highlighting gaps in the literature, we provide a comprehensive understanding of housing preferences that can inform policy and investment strategies in the real estate sector.

## **Materials and methods**

Hedonic pricing models have dominated the literature on housing preferences globally; these models use hedonic regression analyses based on observable decisions made by individuals in the real world. These observational datasets, despite their

strength in capturing the actual behavior, suffer from several limitations. Omission of key information, or inaccuracy in measuring this information can result in missing variables and/or measurement errors. Furthermore, in observational datasets, explanatory variables of interest are not statistically controlled, which can result in non-significant outcomes. Finally, observational data can only determine preferences under past or current market conditions and are unable to predict future patterns (Vij *et al.*, 2022).

Stated preference (SP) experiments are an alternative to collecting data from individuals. In this study, participants were presented with two tasks, each with multiple scenarios. In one they were offered the choice to purchase different properties as an owner-occupier and in the second they were offered the purchase of a property as investment. For the owner-occupier task, the options differed in terms of their physical characteristics, lot size and gross floor area, age of the building, mortgage and council rates, availability of secure garage and storage and the characteristics of the neighborhood such as proximity to amenities and services, neighborhood safety, neighborhood density, race composition, and land-use zoning. For the investment task, the scenarios differed based on dwelling type and value, the number of bedrooms and bathrooms, rent per week, capital growth and real estate market conditions. In each scenario, respondents were required to specify the option they would prefer. The attributes in each alternative were systematically controlled across scenarios in order to understand how different individuals valued each of these attributes.

Since well-designed SP experiments provide a high level of control, they offer some protection from sample selection bias. The analyst has control over each of the variables, and this limits exposure to omitted variable and measurement error (Louviere *et al.*, 2000; Mitchell & Carson, 2013). While some economists have criticized the use of SP experiments based on concerns related to hypothetical bias and incentive compatibility (e.g. Diamond & Hausman, 1994), the property market has recognized the significance of market participant behavior, and behavioral research has in general been accepted by scholars and property experts as a valid and relevant source of empirical evidence (Ratchatakulpat *et al.*, 2009).

### **Measurement of preference**

This study was designed at the micro level to investigate individual behaviors and the reasons behind purchasing a property as an owner-occupier or for the purpose of investment in the housing market. A five-part survey containing two major components was developed and applied to residents in the Sydney metropolitan area. The two major components in the survey were as follows:

**A) Owner-occupier component:** Participants completed a Stated Preference (SP) Discrete Choice Experiment (DCE) that elicited preferences for dwelling characteristics from the presentation of hypothetical properties.

**B) Property investment component:** a selected sample of participants who were interested in investing in the property market and who had access to an appropriate source of funding completed a DCE designed to capture their preferences when selecting an investment property.

Persons aged 18 and above who were living in the Sydney metropolitan area, and who were willing to state their total household income, were eligible to take part in the survey. In the first part of the survey, the respondents provided answers to a series of questions regarding their current place of residence. This included: questions regarding their property type and its physical characteristics; features of the neighborhood and accessibility to certain locations and facilities; reasons for moving into the property; household structure when moving into the property; household budget and affordability of property acquisition (renting or owning); if owning, the value of the property and the date of purchase, and if renting, the reasons that prevented them for owning a property; and any additional properties or investment they themselves or any other household members owned. Finally, participants were asked whether they expected to rent or own a property in the next five years. If respondents stated that they expected to own a property, they were directed to an owner-occupier SP task in part two of the survey.

In part two, a novel DCE elicited individual preferences when selecting a property in which to live. In part three, respondents were asked to indicate their satisfaction, on a 5-point scale, of various aspects of their life (such as their home, suburb, employment, financial status, and health). Participants were presented with a series of questions in relation to their risk attitudes, patience, and financial literacy. Finally, participants were asked if they were considering investing in the property market and if so, what their budget would be. Respondents who indicated that they were not considering investing in the property market were routed past the property investment DCE.

In part four, the property investment task, participants were presented with different investment scenarios. For each scenario, information related to the property type, value, number of bedrooms and bathrooms, required down payment, mortgage value, expected rent value and net rental yield, net cash flow and net investment gain, market condition and a commentary on the location of the property were presented. Finally, respondents provided their socio-demographic information and were directed to submit their responses and provide any feedback they had regarding the survey (see [Figure A1](#) in the appendix for the survey structure and flow).

### ***Experimental design***

Following a literature review and two focus group discussions with property experts and real estate agents, a comprehensive list of 21 attributes was identified to characterize the property description for buyers (see [Table A1](#) in the appendix for the list of attribute values used in owner-occupier SP experiments). Eleven attributes were selected to present the physical characteristics of the property and 10 attributes were chosen to highlight the character of the neighborhood and location. To minimize the complexity and cognitive burden on the respondents, an efficient experimental design with explicit partial profiles was used to enable respondents to only trade on a subset (in this case 11) of attributes in each choice task. Using explicit partial profile design, we reduced the choice task complexity by forcing some of the attributes to have the same level across multiple alternatives.

[Figure A2](#) illustrates an example scenario from the owner-occupier SP experiment where 11 attributes overlap between two property options. Respondents were informed that attributes with a grey background were the same across the two properties and only the attributes with white background varied across the options in each task. The final design had a D-error of 0.082 and included 120 choice tasks in 15 blocks, providing each respondent with eight repeated choice tasks. For the experimental design for the investment SP, ten attributes were selected to represent the property, the market condition, as well as the suburb profile. Some of the attributes used in this SP experiment were accompanied with additional information which, due to having perfect collinearity, had not been included in the design, however, were shown in the task to provide the full information one might consider when selecting a property to invest in (see [Table A2](#) in the appendix for the list of attribute values used in property investment SP experiments). An efficient design (Scarpa & Rose, 2008) was used to systematically create choice scenarios. The final design for the property investment SP task had a D-error of 0.047 and included 60 choice tasks in 15 blocks, providing each respondent with four repeated choice tasks.

[Figure A3](#) illustrates an example of the property investment stated preference experiment. As shown in the figure, respondents had the option to select among three different investment cases or to select not to invest in any of the options provided. In both designs, appropriate conditions were set to create scenarios that were meaningful and similar to the real-world experience. Also, respondents had access to a glossary where the definition of all the technical terms used in the DCEs were provided in plain English.

The survey data were collected in February 2019 from a reputable national market research company through a web-based interface. The sample consisted of 826 Sydney residents aged 18 years and over who expressed interest in owning a property within the next 5 years. This sample was chosen to represent Sydney's population, considering demographic factors such as age, gender, and income. Initially, the sample completed the owner-occupier stated preference experiment. Subsequently, 533 participants indicated they were also open to considering property investment. This subgroup formed the final sample size utilized in this study to examine housing preferences between owner-occupied and investment properties. To maintain brevity, descriptive statistics of our sample are not included.

### ***Model formulation***

In this study, we utilize a Multiple Indicator and Multiple Cause (MIMIC) latent class model, as shown in [Figure A4](#), to jointly analyze two distinct but related sets of preferences: those related to owner-occupied housing (OO-DCE) and property investment (PI-DCE). The two discrete choice experiments (DCEs) presented respondents with different tasks, each focused on a specific aspect of property decision-making. The OO-DCE captures preferences for owner-occupier housing, while the PI-DCE captures preferences related to property investment opportunities. Although these tasks focus on different domains of behavior and involve different

sets of attributes, the MIMIC latent class model allows us to jointly estimate the underlying latent classes based on respondents' preferences in both contexts.

The primary strength of the MIMIC latent class model lies in its ability to incorporate multiple sets of observed indicators, even when these indicators are derived from different tasks or involve different variables. The model captures the covariance between the two DCE tasks and enables comparisons by jointly modeling the responses from both tasks. This joint modeling not only correlates the different variables but also identifies underlying behavioral patterns that may be common across the two DCE contexts, even though the variables or attributes themselves may differ. In our case, the two sets of indicators are the choices made by respondents in the OO-DCE and PI-DCE, each reflecting distinct preferences for property attributes.

- Owner-Occupied Housing Preferences (OO-DCE): In the owner-occupied housing context, respondents made choices based on attributes such as location, dwelling type, and price, which are specific to residential preferences.
- Property Investment Preferences (PI-DCE): In the property investment context, respondents were asked to make choices based on attributes relevant to investment decisions, such as expected rental yield, capital growth potential, and risk level.

Each DCE generates its own set of utility functions, where the utility from a given choice is modeled as a linear function of the attributes specific to that task. While the two DCEs involve different sets of attributes and preferences, the MIMIC latent class model jointly estimates latent classes that reflect patterns of behavior across both tasks. Each respondent is assigned to a latent class based on their choices in both the OO-DCE and PI-DCE, with the model estimating class-specific preference structures for each task. This allows us to identify distinct segments of respondents who behave differently in both the owner-occupied housing and property investment contexts.

The key idea is that while the preferences (and resulting variables) from the OO-DCE and PI-DCE differ in terms of the attributes being considered, they are jointly analyzed to uncover latent classes that capture respondents' overall property-related behavior. These latent classes represent joint behavioral patterns that are consistent across both contexts. For example, a respondent who prefers high-end, centrally located properties for owner-occupation may also favor similar properties for investment purposes, or conversely, may exhibit different preferences in the two domains. The model identifies these relationships by leveraging both sets of data simultaneously.

The MIMIC model does not assume that the variables from the two tasks are directly comparable in a one-to-one manner. Instead, the model allows each DCE to contribute its own set of preferences (and utility functions) to the latent class estimation process. The comparability comes from the joint estimation of latent classes that reflect respondents' behavior across both tasks, rather than from a direct comparison of individual variables.

This joint modeling approach ensures that the differences in the two tasks are respected—each task is modeled separately using its own attribute-specific utility function—while still allowing for the identification of common behavioral segments across both owner-occupied and investment preferences. As a result, the segmentation produced by the model reflects meaningful patterns of behavior that integrate the preferences respondents exhibit in both domains.

We began the model formulation by explaining the latent class membership function to predict what kinds of individuals were most likely to belong to each class. We used a number of demographic and dwelling variables as explanatory variables. Let  $\eta_i$  denote the latent class for respondent  $i$  and  $x_i$  denote the covariates influencing class membership (e.g. demographic and dwelling factors). The probability of respondent  $i$  belonging to latent class  $c$  is:

$$P(\eta_i = c | x_i) = \frac{\exp(x_i' \cdot \gamma_c)}{\sum_{c'=1}^C \exp(x_i' \cdot \gamma_{c'})} \quad (1)$$

$\gamma_c$  is a vector of model parameters that captures the impact of  $x_i$  on the propensity of the individual belonging to class  $c$ ; and  $C$  is the total number of classes. The number of classes must be specified by the analyst prior to model estimation. The appropriate number of classes for any dataset was identified based on a comparison across models with different numbers of classes.

We used these two indicators as our dependent variables of interest and applied the below multinomial logit formulation to estimate the class conditional choice models for both property acquisition and property investment SP tasks.

The responses to the owner-occupied discrete choice experiment (OO-DCE) are modeled using a multinomial logit model, conditioned on the latent class  $\eta_i$ . Let  $y_i^{OO}$  denote the choice made by respondent  $i$  in the OO-DCE, and  $X_i^{OO}$  denote the value presented for each attribute for respondent  $i$  choosing alternative  $j$  in OO-DCE, where the utility depends on latent class membership  $\eta_i$ . The probability of observing choice  $j$  in the OO-DCE for respondent  $i$  in latent class  $c$  is:

$$P(y_i^{OO} = j | \eta_i = c) = \frac{\exp(X_{ij}^{OO} (B_c^{OO}))}{\sum_{k \in C_k} \exp(X_{ik}^{OO} (B_c^{OO}))} \quad (2)$$

Where we assume that a choice scenario presents alternatives in the choice set  $C_{kp}$ ,  $k=1, 2, \dots, K$ , where  $K$  is the number of choice alternatives (in this case, owner-occupier and investing in property) in choice experiments  $t$ . Here, we assumed the stochastic component of the utility of the alternative to be independently and identically Gumbel-distributed.

Similarly, the responses to the property investment discrete choice experiment (PI-DCE) are modeled using a multinomial logit model. Let  $y_i^{PI}$  denote the choice made by respondent  $i$  in the PI-DCE, and  $X_i^{PI}$  denote the value presented for each attribute for respondent  $i$  choosing alternative  $j$  in PI-DCE, where the utility depends

on latent class membership  $\eta_i$ . The probability of observing choice  $j$  in the PI-DCE for respondent  $i$  in latent class  $c$  is:

$$P(y_i^{PI} = j | \eta_i = c) = \frac{\exp(X_{ij}^{PI} (B_c^{PI}))}{\sum_{k \in C} \exp(X_{ik}^{PI} (B_c^{PI}))} \quad (3)$$

The overall log-likelihood function for the entire sample of  $N$  respondents is the sum of the log-likelihood contributions from each individual, accounting for both the owner-occupied preferences and the property investment preferences. The likelihood for each respondent  $i$  is a weighted sum over all latent classes, considering the probability of class membership and the probabilities of the observed choices in both DCEs.

The log-likelihood function is:

$$\text{Log } L = \sum_{i=1}^N \log \left( \sum_{c=1}^C P(\eta_i = c | x_i) P(y_i^{OO} = j | \eta_i = c) P(y_i^{PI} = j | \eta_i = c) \right) \quad (4)$$

The unknown model parameters are estimated by maximizing the log-likelihood function. All models for this study were estimated using the software package PandasBiogeme (Bierlaire, 2020).

## Estimation results

Various model specifications were tested to achieve the final model formulation. The explanatory variables, the utility functional form, as well as number of classes, were varied and tested using data from 533 individuals. The final model specification was determined based on a comparison across different measures of fit, such as the Akaike and Bayesian information criteria, and behavioral interpretation. The final model specification identified three distinct segments, or classes, in our sample that differed in terms of their choices toward property acquisition and investment options (see Table A3 in the appendix for the goodness-of-fit measures for versus number of classes).

Table A4 reports estimation results for the class-specific dwelling acquisition preferences choice model, Table A5 reports estimation results for the class-specific dwelling investment preferences choice model and Table A6 reports the estimation results for the class membership model. Over subsequent paragraphs, we summarize some of the key attributes of each of the segments. As an illustration, Figure A5 presents the sample aggregated preference based on their postcode in the Sydney region and the segment residents of each postcode is most likely belong to. As illustrated in Figure A5, the segmentation pattern highlights a clear preference difference between households residing in CBD areas and inner suburbs, suburban and outer suburban and exurban dwellers. To ease comprehension, we have ordered the segments in terms of their household residential modality style and in terms of

decreasing preference for urban neighborhoods and increasing preference for suburban and exurban environments.

**Table A7** summarizes key differences in property purchasing and investing across the three segments. A sample enumeration exercise was conducted to calculate the expected housing acquisition and investment probabilities and the expected socio-economic composition for each segment. **Tables A8** and **A9** in the Appendix reports the outcome of this sample enumeration exercise. The results from the exercise are included in our description of the classes.

### ***Household segment 1 - the urban-dwelling denizens of the CBD***

This segment constitutes 30 per cent of the sample population and is predominantly male (58 per cent) with an average age of 37. These households are less likely to have children, with 22 per cent being single and 7.5 per cent being one-parent families. Their average income is around \$97,000<sup>1</sup> per year, with 49 per cent employed full-time, 20 per cent part-time, and 26 per cent retired. Over 40 per cent have a bachelor's degree.

This segment has the highest number of apartment dwellers (36 per cent) and a significant proportion living in one-bedroom (5 per cent) or two-bedroom (37 per cent) homes, although 41 per cent prefer three-bedroom properties. Most (72 per cent) have a gross floor area under 175 square meters, with 26 per cent in properties between 70 and 140 square meters. 83 per cent describe their neighborhood density as medium (50 per cent) or high (33 per cent).

About 60 per cent of households are Anglo-Australian, the lowest compared to other segments, with 18 per cent of Asian background. Mixed ethnic groups (14 per cent) and Middle Eastern (7 per cent) are more prevalent in this segment. 43 per cent live in predominantly Anglo-Australian neighborhoods, while mixed ethnicity (34 per cent), Asian (16 per cent), and Middle Eastern (6.4 per cent) neighborhoods are more common here. For detailed statistics regarding household ethnic group and the dominant neighborhood ethnic group, refer to **Table A10** in the appendix.

These households have close proximity to shopping centers and public transport, with over 36 per cent being within 20 min of the CBD. Important factors in purchasing property include accessibility, physical characteristics, and future development potential.

This segment prefers properties with either two bedrooms and two bathrooms or three bedrooms with one or two bathrooms. A secure garage increases their interest, while higher mortgage costs, older buildings, and higher council rates decrease it. Neighborhood safety and proximity to the CBD, work, public transport, and shopping centers are crucial, with a preference for Anglo-Australian dominated suburbs.

For investment, this segment prefers three-bedroom, two-bathroom apartments or four-bedroom, two-bathroom apartments. They are more likely to invest in rising markets, valuing higher rents over capital growth. They are attracted to properties described as exciting, peaceful, or ideal for families.

### ***Household segment 2 - the inhabitants of the suburban enclaves***

This segment comprised 33 per cent of the sample population and consisted mainly of affluent, well-educated couples with children. This segment had a male majority (55 per cent) with an average age of 48 years. Dominantly, 54 per cent were couple families with children, higher than other segments. They had the highest average annual household income of approximately \$123,000 and the highest full-time employment rate (59 per cent).

One in five held a master's or PhD, significantly higher than other segments. Most (78 per cent) lived in houses, with only 13 per cent in apartments. The majority resided in three-bedroom (39 per cent) or four-bedroom (35 per cent) properties, with the lowest rates of one-bedroom (2 per cent) and two-bedroom (15 per cent) dwellers.

Most of the households in suburban dwellers preferred four-bedroom properties. One in four lived in properties with a floor area of 210–360 square meters. Twenty-eight percent lived in low-density, 57 per cent in medium-density, and 15 per cent in high-density suburbs. They had the closest proximity to schools and parks. Sixty-five percent took over 60 min to access the CBD and 77 per cent took the same time to get to work. Most were of Anglo-Australian background (68 per cent), with Asian background being the second-largest group (22.5 per cent).

For owner-occupied properties, this segment preferred houses over apartments, particularly four-bedroom, two or three-bathroom properties. They valued lot size and preferred low-density neighborhoods. Proximity to work, public transport, and shopping centers was crucial, and safety was a priority. They favored neighborhoods predominantly Anglo-Australian, followed by neighborhoods with mostly Asian backgrounds.

For investment, they preferred houses but would consider two-bedroom, three-bedroom, and five-bedroom properties. Capital growth was more influential than rent value in their decisions. They were likely to invest during a rising market and favored properties in the CBD, near the coast, in well-designed neighborhoods, or peaceful locations.

### ***Household segment 3 - the exurban settlers***

This segment, comprising 37 per cent of the sample, had the highest proportion of retired couples among the three segments. Females slightly dominated at 52 per cent, with an average age of 54 years. The majority were couple families without children (40 per cent), followed by couples with children (30 per cent), the lowest among all segments. The average annual income was \$87,000, also the lowest. Only 36 per cent were retired, and 40 per cent were employed full-time, the lowest full-time employment rate.

About 57 per cent held an advanced diploma or below. Most lived in houses (76 per cent) with three (35 per cent) or four (32 per cent) bedrooms. Three-bedroom properties were most preferred (39 per cent). The majority had a gross floor area between 210 and 360 square meters, and this segment had the highest proportion

of properties over 540 square meters. Only 12 per cent lived in high-density areas, while 37 per cent were in low-density neighborhoods. Over 70 per cent took 60 min or more to access the CBD or work. They preferred proximity to public transport, shops, and work over schools, parks, and the CBD.

Table A10 shows 78 per cent identified their household as Anglo-Australians and 13 per cent as Asian-Australians. The household's neighborhood was identified as predominantly Anglo-Australian (55 per cent), with a significant Asian minority (10 per cent). Affordability was a key factor in property purchase decisions.

For owner-occupied properties, this segment preferred houses over apartments, favoring five-bedroom, four-bathroom properties, and valued secure storage. They were sensitive to mortgage costs and preferred lower repayments. Older buildings and higher council rates decreased property desirability. They sought safe, low-density neighborhoods near shopping centers and preferred suburbs predominantly Anglo-Australian or Asian, avoiding areas with a high population of African Australians.

For investments, they preferred three or four-bedroom houses with two bathrooms. Lower property values increased investment probability. Unique among segments, they preferred low vacancy rates and higher rental returns, showing indifference to capital growth and market conditions. Furthermore, they favored family-friendly urban locations.

### ***Willingness to pay for purchasing owner occupied versus investment properties***

Willingness to pay (WTP) margins for owner-occupiers and investors are shown in full in Figures A6 and A7. Below we summarize these findings.

For owner-occupied properties, WTP estimates are initially given as monthly mortgage payments, which we convert into approximate property values using a 3.5<sup>2</sup> per cent interest rate over 30 years<sup>3</sup>. All else being equal, CBD dwellers showed no significant preference for dwelling type for owner-occupation but was willing to pay \$172,500 more for an apartment over a townhouse as an investment. Suburban dwellers preferred houses, willing to pay \$2.246 million more for a house to live in and \$681,675 more for a house as an investment, but \$678,420 less for an apartment to live in compared to a townhouse. Exurban dwellers were willing to pay \$808,149 more for a house to live in and \$349,788 more for a house as an investment compared to a townhouse, and \$267,965 less for an apartment to live in.

Ceteris paribus, relative to one bedroom and one bathroom, CBD dwellers were willing to pay \$3.040 million more for a two-bedroom, two-bathroom property to live in, and slightly less for other configurations. For investments, CBD dwellers preferred larger properties with four bedrooms and two bathrooms, and were willing to pay \$329,073 more than they would for a one-bedroom, one-bathroom property. Suburban dwellers were willing to pay the most for a four-bedroom, three-bathroom property (\$3.547 million). For investment, they preferred five-bedroom, five-bathroom properties (\$808,377). Exurban dwellers preferred a five-bedroom, four-bathroom property for an additional \$464,154 to live in compared with a one-bedroom,

one-bathroom property, and for investment, they were willing to pay \$301,834 for a three-bedroom, two-bathroom property and \$189,000 for a four-bedroom, two-bathroom property.

When purchasing a property as an owner occupier, CBD and suburban dwellers valued proximity to public transport (\$2.1 and \$2.0 per km proximity, respectively). Suburban dwellers valued proximity to shopping centers the most (\$1.9 per km proximity). Both segments also valued proximity to the CBD and work, with CBD dwellers willing to pay \$13 and \$9.8 per month, respectively. All segments preferred neighborhoods mostly occupied by Anglo-Australians, with suburban dwellers willing to pay the most (\$1,429.22 per month) for this type of neighborhood. Suburbs mostly occupied by Asian-Australians were the second most preferred. CBD dwellers is less likely to prefer living in areas with a high proportion of residential land use and expects mortgage reductions as the percentage of residential zoning increases compared to commercial and green spaces in the neighborhood.

For owner occupied properties, suburban dwellers were willing to pay an addition of \$102.3 in their monthly mortgage for every square meter increase in lot size which is equivalent to \$34,701 over the 30-year loan period. Exurban dwellers were willing to almost pay half of this additional value (\$50.5) in monthly mortgage for a one square meter increase in lot size. All segments preferred lower council rates and were willing to pay between \$0.44 to \$1.44 more in their monthly mortgage for each dollar reduced in annual rates. When purchasing a property to live in, CBD dwellers preferred newer properties, and were willing to pay \$288.9 per month per year reduction in age of the building, followed by suburban dwellers (\$206.4) and exurban dwellers (\$132.3). Only CBD dwellers showed a significant preference and were willing to pay \$642.96 extra per month for a newer property. All segments valued neighborhood safety, with CBD dwellers willing to pay the most (\$244.44 per month) and suburban dwellers the least (\$103.20 per month). CBD dwellers preferred higher density neighborhoods (\$143.0 per month), while suburban and exurban dwellers preferred lower density, willing to pay \$511.42 and \$686.52 per month, respectively.

When buying a property as an investment, exurban dwellers were the only segment significantly influenced by the vacancy rate history of the property, expecting a reduction of \$2,609 for every week the property was vacant in the past year. Different behavior was observed regarding expected rent per week. CBD dwellers were willing to pay \$735 more for every dollar increase in rent (the highest among all segments) and \$2,387 for every percent increase in expected annual capital growth, showing a greater interest in rent value than capital gain. Suburban dwellers, on the other hand, was willing to pay only \$494 for each dollar increase in rent (the lowest among all segments) but was willing to pay a premium of \$28,607 for every percent increase in annual capital gain. Exurban dwellers were willing to pay \$544 for a one dollar increase in rent but was indifferent to annual capital gain. Based on these values, it can be assumed that suburban dwellers investment strategy focused on annual capital growth, looking to invest in areas with high demand and limited supply. This typically occurs in locations close to work opportunities, amenities, public transport, and infrastructure.

In the DCE related to property investment, a commentary was provided to respondents to give a snapshot of the neighborhood. Suburban dwellers were willing to pay more for the preferred neighborhood compared to other segments. This segment was willing to pay the most (\$538,220) for properties near the coast. Neighborhoods with easy access to a range of amenities were the second most preferred, with a WTP value of \$497,382 for suburban dwellers. Suburban dwellers would also pay \$341,361 for a peaceful location for families. These WTP values were greater than any WTP values in other segments. CBD dwellers were also willing to pay the most for a location near the coast (\$294,569). Locations suitable for families were also preferred by this segment; they were willing to pay \$244,089 for peaceful locations and \$155,911 for ideal locations. Lastly, exurban dwellers were willing to pay \$186,178 for properties in the CBD and \$81,100 for ideal locations for families.

## Discussion

This study draws on survey data and a discrete choice experiment from a demographically representative sample of 533 individuals to provide an empirical investigation of housing demand from the perspectives of both owner-occupiers and small-scale investors. It specifically addresses a research gap concerning how the same household's preferences differ when purchasing a property to live in versus purchasing one as a small-scale investment, representing the diverse perspectives within the two largest purchasing decisions in the housing market. The research focuses on the greater Sydney metropolitan area, though its findings may be relevant to other Australian cities and developed urban housing markets globally. The literature review highlights that previous studies on housing choices, such as those by Wang & Li (2004) and Zeng (2013), primarily focused on intrinsic and extrinsic attributes. These studies have shown that preferences vary significantly based on cultural and regional contexts. Our study expands this understanding by integrating small-scale investor behavior into the analysis, an area that has received less attention.

We introduced a LCCM that adeptly addresses both observed and unobserved variations inherent in property acquisition and investment preferences. This model helped us to identify three demographic segments with distinct preferences for property acquisition and investment.

The first segment, 'CBD dwellers', mirrors findings by Leishman *et al.* (2004) and Wang & Li (2004) that urban dwellers prefer proximity to amenities and public transport. This segment, consisting mainly of middle-income male households in their 40s, values the age of the building, secure parking, and neighborhood safety. Unlike the preferences observed by Booi & Boterman (2020) for single-family dwellings, this group shows a strong preference for urban living, likely due to their lifestyle and employment needs. The second segment, 'suburban dwellers', aligns with Cho *et al.* (2005) and Ibraimovic & Hess (2018), who found that family-oriented households prioritize proximity to schools and low-density neighborhoods. This segment, comprising affluent, educated couples with children, demonstrates a strong preference for lot size, indicative of a need for outdoor space, similar to the findings

of Opoku & Abdul-Muhmin (2010) in Saudi Arabia. The third segment, 'exurban dwellers', consisting primarily of retired couples, prefers low-density living in exurban areas, prioritizing safety and affordability. This preference for peaceful, spacious living environments is consistent with findings by Aitken *et al.* (2022) regarding older homebuyers in England. The willingness to pay for low-density areas suggests a focus on quality of life and retirement lifestyle, contrasting with the more urban preferences of younger demographics studied by Wang & Otsuki (2015).

The stated choice preference experiments demonstrate clear preferences when purchasing property for the purpose of residence across the three segments. For instance, in relation to the dwelling type, lot size was twice as important to suburban dwellers than exurban dwellers, which could be explained by the desire of families with children to have outdoor spaces for children to play in, or of having the scope to extend dwelling size for a growing family. The residents in CBD dwellers segment were most concerned with the age of the building, proximity to the CBD, a secure garage and neighborhood safety. They were the least concerned with proximity to a local shopping center, but this might be because in urban areas shopping centers are generally proximate already. Of the three segments, the retired exurban dwellers in exurban dwellers were most concerned with neighborhood density, preferring low-density living, and had a moderate preference for proximity to local shops. Of the three segments, suburban dwellers showed a significant preference for living in locations that were dominantly Anglo-Australian. Their willingness to pay for this was more than double that of CBD dwellers and exurban dwellers.

Investor behavior revealed significant differences across the segments. Suburban dwellers high WTP for capital growth aligns with the trend of appreciating property values, echoing the secure investment perceptions noted by Seelig *et al.* (2009). CBD dwellers preference for rental yield strategies supports findings by Oxley *et al.* (2010), who highlighted the significance of rental income for small investors. Exurban dwellers focus on rental yields in high-demand regional areas parallels the strategic investment behaviors observed in volatile markets with transient populations. The study also identifies market condition sensitivities, with CBD and suburban dwellers showing a strong preference for buying in rising markets, despite the risks associated with hot markets. This behavior may reflect speculative tendencies and a desire to capitalize on rapid price increases, a phenomenon noted in the literature by Gallimore & Gray (2002) regarding investor sentiment.

Regarding preferences for property characteristics when investing, the SP experiment also showed differences between the classes. Exurban dwellers had a strong preference for large homes in the heart of the city, whereas CBD dwellers preferred to invest in large apartments near the coast. Both segments expressed a desire for the location to be favorable to families. CBD dwellers were highly sensitive to rental returns with a significant WTP for a small weekly rental increase.

The Sydney property market has historically been the most competitive in Australia, with high prices and degrees of competition its hallmark. The COVID-19 pandemic saw a significant increase in property prices in Australia in what has become known as a lockdown property boom. More recently, reporting has focussed on the housing crisis in Australia with much attention given to the most appropriate

measures to combat the rental crisis as the rental vacancy rate falls to unsustainable levels.

Understanding the factors at play when different segments of the community make decisions about where to live and invest based on their stated preferences can guide policy and property development decisions to ensure the best outcomes in a complex and tense market. Further, SP experiments can be useful when used in conjunction with other predictions of demographic change. For instance, the growing preference among exurban dwellers for low-density living indicates a need for policies that support the development of exurban areas with appropriate infrastructure and amenities. This trend is particularly relevant as the aging population, which tends to prefer quieter, more spacious living environments, continues to grow, as discussed by Bourassa (1995). Additionally, the preferences of suburban dwellers for high capital growth areas suggest that urban planning should consider the balance between supply and demand to prevent overheating in property markets. Policymakers could also focus on creating well-structured investment vehicles to attract institutional investors, addressing the gaps identified by Newell *et al.* (2015).

The analytical framework employed in this study, which integrates latent class analysis with DCEs, offers a versatile approach that can be adapted to housing markets in other regions. While specific preferences for housing attributes are shaped by local cultural, economic, and regional factors, the underlying methodology remains applicable in various contexts. The dual focus on owner-occupier and investor preferences allows for a nuanced understanding of how households balance lifestyle considerations with financial returns—a dynamic that exists in most developed urban housing markets. For example, in cities experiencing rapid urbanization or housing shortages, households are likely to face similar tradeoffs between choosing a property for personal use and selecting one as an investment opportunity. By segmenting households based on their preferences in these dual roles, urban planners and policymakers in different regions can gain insights into the evolving needs of their populations. Additionally, the behavioral insights derived from this approach—such as the importance of capital growth for investors or proximity to amenities for owner-occupiers—can inform housing policies aimed at ensuring balanced market growth, sustainable development, and improved housing affordability. As such, this framework provides both methodological flexibility and a foundation for generating actionable knowledge that can be applied to diverse housing markets globally.

Furthermore, this study enhances our understanding of housing preferences among different market segments in Sydney and provides strategic insights for policy development. However, it is important to acknowledge that the findings do not fully account for capacity constraints such as physical or financial limitations that may affect individuals' abilities to move to their desired neighborhoods. Additionally, the current analysis does not consider the local availability of housing stock with specific characteristics, which can significantly influence housing choices. Future research could benefit from integrating revealed and stated preference data, a method known as 'data fusion', to obtain a more comprehensive view of housing market behaviors. This approach would help mitigate the limitations of individual data sources and offer robust predictions for policy and investment decisions. Furthermore,

incorporating data on housing stock availability and computing a ‘preference mismatch’ measure would provide deeper insights into the alignment between preferences and actual housing choices, addressing the constraints and availability factors that impact market dynamics.

## Conclusion

This study extends our understanding of housing preferences by examining how the same households make decisions when purchasing a property for owner-occupation versus investment purposes. Unlike previous studies that focused on distinct groups of owner-occupiers and investors, this research uniquely captures how motivations and priorities shift within the same household depending on whether the purchase is for personal use or investment. This approach offers valuable insights into the dual roles many households play in the housing market.

Using stated-preference discrete choice experiments, the analysis identified three distinct segments of the housing market—urban CBD dwellers, suburban residents, and exurban settlers—each displaying different preferences for property characteristics, location, and investment strategies. These segments reflect broader demographic trends, lifestyle choices, and financial objectives, providing a deeper understanding of how households prioritize attributes for both homeownership and investment. For example, suburban dwellers value larger lot sizes and proximity to schools for family living, while CBD dwellers focus on secure parking and rental yields for investment properties.

The findings have important implications for urban planning and housing policy. By understanding the behavioral drivers behind both owner-occupied and investment property purchases, policymakers can better anticipate the needs of different market segments. This research can inform interventions aimed at balancing housing supply and demand, addressing affordability, and ensuring sustainable urban growth. The preferences of exurban dwellers for low-density living highlight the need for infrastructure development in peripheral areas, as well as the incorporation of investment strategies in rapidly growing regions.

While the findings are specific to Sydney, the methodology and insights have broader relevance for housing markets in other developed economies. The integration of stated-preference experiments and latent class analysis provides a robust framework for understanding the complex motivations behind housing decisions, which can be applied to diverse urban contexts.

In conclusion, this study not only fills a critical gap by focusing on the preferences of small-scale property investors, but it also offers actionable knowledge for shaping future housing policies and market strategies. Future research should continue to explore how shifts in the housing market, such as rising interest rates or economic changes, influence the balance between owner-occupied and investment property decisions. Expanding this research to include other metropolitan areas and integrating revealed preference data will further enhance our understanding of housing market dynamics.

## Notes

1. This compares to approximately \$108,000 (median weekly household income of \$2,077) for Greater Sydney, derived from the 2021 Census. (See <https://abs.gov.au/census/find-census-data/quickstats/2021/1GSYD>).
2. The 3.5% interest rate reflects the average rate for new owner-occupied loans funded in the month across all loans and institutions, as published by the Reserve Bank of Australia on 31 July 2019 (<https://www.rba.gov.au/statistics/tables/#interest-rates>).
3. The following formula was used for the conversion:

$$P = \frac{M \times (1 - (1+r)^{-n})}{r}$$

where:

- P is the property value.
- M is the monthly mortgage payment.
- r is the monthly interest rate (annual rate divided by 12).
- n is the total number of payments (loan period in months).

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Notes on contributors

*Ali Ardeshtiri* is a Senior researcher at the University of South Australia (UniSA) Business School. He holds a Ph.D. in Urban Economics and specialises in discrete choice modelling, consumer behaviour, and urban policy. His research interests encompass urban, transportation and environmental economics, with a focus on consumer preferences for new technologies, such as Connected and Autonomous Vehicles (CAVs), and sustainable urban planning. Dr. Ardeshtiri has published widely on topics related to economic valuation of urban and environmental amenities, and policy impacts on public infrastructure usage.

*Lynette Washington* is an early career Research Fellow at the University of South Australia. She is a qualitative researcher with a particular interest in urban and regional development, housing, leadership, and gender. She is currently working on the ARC-funded Linkage Project Future Work, Future Communities and the RACE for 2030 project Energy Masters. She is a member of the Centre for Enterprise Dynamics in Global Economies (C-EDGE) and holds a Ph.D. in English and Creative Writing from the University of Adelaide.

*Akshay Vij* is an Associate Professor at the University of South Australia (UniSA) Business School. He holds a Ph.D. in Civil and Environmental Engineering, specialising in transportation science and discrete choice analysis. Dr. Vij's research focuses on understanding individual decision-making processes and consumer preferences related to urban, transportation and emerging technologies, including autonomous vehicles and shared mobility services. His work integrates behavioural science with data analytics to inform public policy and sustainable urban mobility solutions. He has published extensively in top-tier journals and collaborates with industry and government bodies to address contemporary urban & transport challenges.

*Chris Leishman* is a Professor of Property and Housing Economics at the University of South Australia (UniSA) Business School. He holds a Ph.D. in Housing Economics and brings extensive expertise in urban economics, housing markets, and public policy analysis. His

research focuses on housing affordability, land use, urban development, and economic modelling to inform policy decisions. Professor Leishman has collaborated widely with government and industry partners, contributing to a deeper understanding of housing market dynamics and the socio-economic factors that influence urban development. His work is instrumental in shaping evidence-based housing and urban policies in Australia and beyond.

**Andrew Beer** is the Executive Dean of UniSA Business at the University of South Australia (UniSA). He holds a Ph.D. in Geography from the Australian National University and is an internationally recognised expert in regional development, housing, and economic geography. His research focuses on understanding the economic and social factors that shape regional resilience, housing markets, and ageing populations.

## ORCID

Ali Ardeshiri  <http://orcid.org/0000-0002-3453-0953>

## References

- Aitken, D., Willis, K. & Gilroy, R. (2022) Do older homebuyers prefer dwellings with accessibility and adaptability features? Findings from an exploratory study, *Housing Studies*, 39, pp. 1–23.
- Amin, H., Abdul-Rahman, A.-R. & Abdul-Razak, D. (2013). An integrative approach for understanding Islamic home financing adoption in Malaysia, *International Journal of Bank Marketing*, 31(7), pp. 544–573.
- Ardeshiri, A., Ardeshiri, M., Radfar, M. & Hamidian Shormasty, O. (2016). The values and benefits of environmental elements on housing rents, *Habitat International*, 55, pp. 67–78.
- Beamish, J. O., Carucci Goss, R. & Emmel, J. (2001). Lifestyle influences on housing preferences, *Housing and Society*, 28(1–2), pp. 1–28.
- Beer, A., Faulkner, D., Paris, C. & Clower, T. (2011) *Housing transitions through the life course: Aspirations, needs and policy* (Bristol: Policy Press).
- Beer, A., Kearins, B. & Pieters, H. (2007). Housing affordability and planning in Australia: the challenge of policy under neo-liberalism, *Housing Studies*, 22(1), pp. 11–24.
- Bierlaire, M. (2020) *A short introduction to PandasBiogeme* (Switzerland: The École Polytechnique Fédérale de Lausanne (EPFL)).
- Booi, H. & Boterman, W. R. (2020). Changing patterns in residential preferences for urban or suburban living of city dwellers, *Journal of Housing and the Built Environment*, 35(1), pp. 93–123.
- Bourassa, S. C. (1995). A model of housing tenure choice in Australia, *Journal of Urban Economics*, 37(2), pp. 161–175.
- Cho, S.-H., Newman, D. H. & Wear, D. N. (2005). Community choices and housing demands: a spatial analysis of the Southern appalachian highlands, *Housing Studies*, 20(4), pp. 549–569.
- Choi, S.-H. & Kang, M. (2010). An analysis on elderly housing preference using structural equation model: Focusing on silver town, *International Journal of Urban Sciences*, 14(3), pp. 254–263.
- Costa-Font, J., Elvira, D. & Mascarilla-Miró, O. (2009). Ageing in place? Exploring elderly people's housing preferences in Spain, *Urban Studies*, 46(2), pp. 295–316.
- Costa-Font, J., Gil, J. & Mascarilla, O. (2010). Housing wealth and housing decisions in old age: sale and reversion, *Housing Studies*, 25(3), pp. 375–395.
- Diamond, P. A. & Hausman, J. A. (1994). Contingent valuation: is some number better than no number?, *Journal of Economic Perspectives*, 8(4), pp. 45–64.
- Fien, J., Charlesworth, E., Lee, G., Morris, D., Baker, D. & Grice, T. (2008). Towards a design framework for remote indigenous housing, *AHURI Final Report*, 114, pp. 1–110.

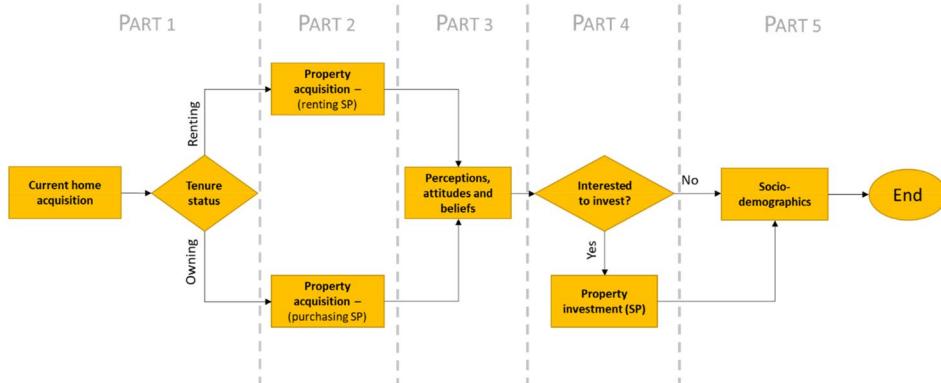
- Gallimore, P. & Gray, A. (2002). The role of investor sentiment in property investment decisions, *Journal of Property Research*, 19(2), pp. 111–120.
- Hulse, K. & Burke, T. (2016) Private rental housing in Australia: political inertia and market change, in: R. Duffy-Jones & D. Rogers (Eds) *Housing in 21st-Century Australia* (UK: Routledge).
- Ibraimovic, T. & Hess, S. (2018). A latent class model of residential choice behaviour and ethnic segregation preferences, *Housing Studies*, 33(4), pp. 544–564.
- Jabareen, Y. (2005). Culture and housing preferences in a developing city, *Environment and Behavior*, 37(1), pp. 134–146.
- Jones, C., Leishman, C. & Watkins, C. (2004). Intra-urban migration and housing submarkets: Theory and evidence, *Housing Studies*, 19(2), pp. 269–283.
- Kemp, S., Chan, M., Chen, Z. & Helton, W. S. (2018) Risk attitude, perceived returns and investment choice in New Zealand, *New Zealand Journal of Psychology*, 47, pp. 23–29.
- Khozaei, F., Hassan, A. S., Al Kodmany, K. & Aarab, Y. (2014). Examination of student housing preferences, their similarities and differences, *Facilities*, 32(11–12), pp. 709–722.
- Kulu, H. & Steele, F. (2013). Interrelationships between childbearing and housing transitions in the family life course, *Demography*, 50(5), pp. 1687–1714.
- Lee, H.-J., Carucci Goss, R. & Beamish, J. O. (2007). Influence of lifestyle on housing preferences of multifamily housing residents, *Housing and Society*, 34(1), pp. 11–30.
- Lee, C. L. & Reed, R. G. (2014). The relationship between housing market intervention for first-time buyers and house price volatility, *Housing Studies*, 29(8), pp. 1073–1095.
- Leishman, C. (2009). Spatial change and the structure of urban housing Sub-markets, *Housing Studies*, 24(5), pp. 563–585.
- Leishman, C. M., Aspinall, P., Munro, M. & Warren, F. (2004) *Preferences, quality and choice in new-build housing* (UK: Joseph Rowntree Foundation).
- Leishman, C. & Rowley, S. (2012) Affordable housing, in: D. F. Clapham, K. Gibb, & W. A. V. Clark (Eds) *The Sage Handbook of Housing Studies*, pp. 379–396 (UK: SAGE Publications).
- Liao, F. H., Farber, S. & Ewing, R. (2015). Compact development and preference heterogeneity in residential location choice behaviour: a latent class analysis, *Urban Studies*, 52(2), pp. 314–337.
- Lindberg, E., Gärling, T. & Montgomery, H. (1989). Belief-value structures as determinants of consumer behaviour: a study of housing preferences and choices, *Journal of Consumer Policy*, 12(2), pp. 119–137.
- Linneman, P. D. & Megbolugbe, I. F. (1992). Housing affordability: Myth or reality?, *Urban Studies*, 29(3–4), pp. 369–392.
- Louviere, J. J., Hensher, D. A. & Swait, J. D. (2000) *Stated choice methods: analysis and applications* (UK: Cambridge University Press).
- Mitchell, R. C. & Carson, R. T. (2013) *Using surveys to value public goods: the contingent valuation method* (New York: RFF Press).
- Neutze, M. (2000). Housing for indigenous Australians, *Housing Studies*, 15(4), pp. 485–504.
- Newell, G., Lee, C. L. & Kupke, V. (2015). The opportunity of residential property investment vehicles in enhancing affordable rental housing supply. *AHURI Positioning Paper Series*, 1–53.
- Nijenstein, S., Haans, A., Kemperman, A. D. & Borgers, A. W. (2015). Beyond demographics: human value orientation as a predictor of heterogeneity in student housing preferences, *Journal of Housing and the Built Environment*, 30(2), pp. 199–217.
- Opoku, R. A. & Abdul-Muhmin, A. G. (2010). Housing preferences and attribute importance among low-income consumers in Saudi Arabia, *Habitat International*, 34(2), pp. 219–227.
- Oxley, M., Brown, T. J., Haffner, M., Hoekstra, J. & Lishman, R. (2010) *Promoting Investment in Private Rented Housing Supply: International Policy Comparisons* (London, UK: Department for Communities and Local Government).
- Ratchatakulpat, T., Miller, P. & Marchant, T. (2009). Residential real estate purchase decisions in Australia: is it more than location, *International Real Estate Review*, 12(3), pp. 273–294.
- Reed, R. & Mills, A. (2007). Identifying the drivers behind housing preferences of first-time owners, *Property Management*, 25(3), pp. 225–241.

- Rosen, S. (1974). Hedonic prices and implicit markets: Product differentiation in pure competition, *Journal of Political Economy*, 82(1), pp. 34–55.
- Scarpa, R. & Rose, J. M. (2008). Design efficiency for non-market valuation with choice modelling: how to measure it, what to report and why\*, *Australian Journal of Agricultural and Resource Economics*, 52(3), pp. 253–282.
- Seelig, T., Thompson, A., Burke, T., Pinnegar, S., Mcnelis, S. & Morris, A. (2009) *Understanding What Motivates Households to Become and Remain Investors in the Private Rental Market* (Sydney, Australia: University of Technology Sydney).
- Stone, M. E. (2006). What is housing affordability? The case for the residual income approach, *Housing Policy Debate*, 17(1), pp. 151–184.
- Tsai, J., Bond, G. R., Salyers, M. P., Godfrey, J. L. & Davis, K. E. (2010). Housing preferences and choices among adults with mental illness and substance use disorders: a qualitative study, *Community Mental Health Journal*, 46(4), pp. 381–388.
- Verhetsel, A., Kessels, R., Zijlstra, T. & Van Bavel, M. (2017). Housing preferences among students: collective housing versus individual accommodations? A stated preference study in Antwerp (Belgium), *Journal of Housing and the Built Environment*, 32(3), pp. 449–470.
- Vigdor, J.L. (2003). Residential segregation and preference misalignment, *Journal of Urban Economics*, 54(3), pp. 587–609.
- Vrij, A., Ardestiri, A., Li, T., Beer, A., & Crommelin, L. (2022) *Understanding What Attracts New Residents to Smaller Cities*. AHURI Final Report, Melbourne, Australia: Australian Housing and Urban Research Institute Limited.
- Wang, D. & Li, S.-M. (2004). Housing preferences in a transitional housing system: The case of Beijing, China, *Environment and Planning A: Economy and Space*, 36(1), pp. 69–87.
- Wang, D. & Li, S.-M. (2006). Socio-economic differentials and stated housing preferences in Guangzhou, China, *Habitat International*, 30(2), pp. 305–326.
- Wang, Y. & Otsuki, T. (2015). Do institutional factors influence housing decision of young generation in urban China: Based on a study on determinants of residential choice in Beijing, *Habitat International*, 49, pp. 508–515.
- Zeng, R. (2013) *Attributes Influencing Home Buyers' Purchase Decisions: A Quantitative Study of the Wuhan Residential Housing Market* (Australia: Southern Cross University).

## Appendix 1

**Table A1.** Range of attribute values used in owner-occupier SP experiments to describe each property across different scenarios.

	Attribute	Potential levels	
<b>Physical characteristics</b>	Number of bedrooms	1 bedroom, 2 bedrooms, 3 bedrooms, 4 bedrooms, 5 bedrooms, 6 bedrooms	
	Number of bathrooms	1 bathroom, 2 bathrooms, 3 bathrooms, 4 bathrooms	
	Lot size	600 m <sup>2</sup> , 900 m <sup>2</sup> , 1200 m <sup>2</sup> , 1500 m <sup>2</sup>	
	Gross floor area	if lot 600 m <sup>2</sup> if lot 900 m <sup>2</sup> if lot 1200 m <sup>2</sup> if lot 1500 m <sup>2</sup>	360 m <sup>2</sup> , 480 m <sup>2</sup> , 600 m <sup>2</sup> , 720 m <sup>2</sup> 540 m <sup>2</sup> , 720 m <sup>2</sup> , 900 m <sup>2</sup> , 1080 m <sup>2</sup> 720 m <sup>2</sup> , 960 m <sup>2</sup> , 1200 m <sup>2</sup> , 1440 m <sup>2</sup> 900 m <sup>2</sup> , 1200 m <sup>2</sup> , 1500 m <sup>2</sup> , 1800 m <sup>2</sup>
	Dwelling type	free standing house, apartment, townhouse	
	The residential is facing north	yes, no	
	Availability of a store	yes, no	
	Availability of secure garage	yes, no	
	Annual council rates	\$1,000, \$3,000, \$5,000, \$7,000	
	30-year mortgage	\$1,200, \$2,400, \$3,600, \$4,800	
<b>Neighbourhood characteristics</b>	Age of the building	recently built, 5 years, 15 years, 30 years	
	Proximity to local shopping centre	400m, 800 m, 1200 m, 1600 m	
	Proximity to public transport	400m, 800 m, 1200 m, 1600 m	
	Proximity to public school	400m, 800 m, 1200 m, 1600 m	
	Safety (star rating)	2 stars, 3 stars, 4 stars, 5 stars	
	Density (pictures)	low density, medium density, high density	
	Race composition	Anglo-Australians Asian Australians Aboriginal Australians African Australians Middle Eastern Australians	0%, 30%, 60%, 90% 0%, 10%, 20%, 30% 0%, 5%, 10%, 15% 0%, 10%, 20%, 30% 0%, 10%, 20%, 30%
	in the neighbourhood		
	Proximity to parks	400m, 800 m, 1200 m, 1600 m	
	Proximity to CBD	less than 10 min, 10–30 min, 30 min to 60 min, 60 min to 90 min, more than 90 min	
	Proximity to work	less than 10 min, 10–30 min, 30 min to 60 min, 60 min to 90 min, more than 90 min	
	Land zoning composition (%)	85% residential, 10% commercial, 5% parks and greenspace 60% residential, 35% commercial, 5% parks and greenspace 70% residential, 10% commercial, 20% parks and greenspace 35% residential, 35% commercial, 30% parks and greenspace	

**Figure A1.** Survey structure and flow.**Set 1 of 8**

Please tell us which one of the two options you would choose to purchase if these were the only options available.

Note: Characteristics which have the same values in both options are shown with a gray background for your consideration.

Hover your cursor over the dwelling characteristics to read the description.

	Option A	Option B
Physical characteristics of the dwelling	Dwelling type	Townhouse
	Number of bedrooms	4 bedrooms
	Number of bathrooms	3 bathrooms
	Lot size	600m <sup>2</sup>
	Gross floor area	360m <sup>2</sup>
	Gross floor area ratio permission for future development	1:1
	The dwelling is north facing	Yes
	Annual council rates / Strata	\$7,000
	Mortgage per month (30 year loan)	\$7,200
	Age of the building	15 years old
	Storage	Available
	Secure parking	Available
Characteristics of the suburb	Proximity to local shopping centre	Within 400m (i.e. 5min walk)
	Proximity to public transport	Within 800m (i.e. 10min walk)
	Proximity to public school	Within 800m (i.e. 10min walk)
	Proximity to parks	Within 1200m (i.e. 15min walk)
	Proximity to CBD	30-45min drive
	Proximity to work	45-60min drive
	Safety rating	★★★★★
	Density	Low density 
	Race composition of suburb	Mostly African Australians
	Land zoning	
I would purchase:		

**Figure A2.** Example scenario from the owner-occupier stated preference experiment.

**Table A2.** Range of attribute values used in property investment SP experiments to describe each property across different scenarios.

	Attributes	Potential levels
<b>Property details</b>	Property type	Free standing house, apartment, townhouse
	Property value	600,000; 1,000,000; 1,400,000; 1,800,000; 2,200,000; 2,600,000
	<b>Investment budget</b>	
	<b>%20 cash down payment</b>	<i>calculated based on the property value.</i>
	<b>stamp duty</b>	<i>calculated based on the property value.</i>
	<b>total cash</b>	<i>calculated based on the property value.</i>
	<b>mortgage</b>	<i>calculated based on the property value.</i>
	Number of bedrooms	1 bedroom, 2 bedrooms, 3 bedrooms, 4 bedrooms, 5 bedrooms, 6 bedrooms
	Number of bathrooms	1 bathroom, 2 bathrooms, 3 bathrooms, 4 bathrooms, 5 bathrooms, 6 bathrooms
	Vacancy	1 week (1.92%), 2 wk (3.85%), 3 wk (5.77%), 4 wk (7.69%)
<b>Market details</b>	Rent per week	\$450, \$900, \$1350, \$1800, \$2250, \$2700
	<b>Gross rental yield %</b>	<i>calculated based on rent per week, vacancy rate and the property value.</i>
	Expected capital growth rate p.a.	6.5%, 9.5%, 12.5%
	<b>\$ Value p.a.</b>	<i>calculated based on expected capital growth rate and the property value.</i>
	<b>Net cash fellow p.a.</b>	<i>calculated based on rent per week, vacancy rate, the property value, expected capital growth rate, and mortgage value.</i>
<b>Suburb details</b>	<b>Net investment gain p.a.</b>	<i>calculated based on the sum of capital growth in value and the net cash fellow</i>
	Real Estate Market Condition	Market is booming, Market is hot, Market is rising, Market is beginning to cool, Market is falling, Market is at the bottom
	Commentary on the suburb	<b>Easy access to a range of amenities:</b> A brand new community centre with beautiful community parks with cycleways, football fields, tennis and basketball courts. Easy access to public transport and major roads. <b>An ideal location for families:</b> located just 30 mins to the CBD within easy reach of great shops, schools, cafes and beautiful beaches. <b>A peaceful location for families:</b> High proportion of owner-occupiers, lowest crim rate and has easy access to shops, schools, employment. <b>Premium finishes and landscaped gardens:</b> A unique opportunity with architecturally designed homes, premium finishes, landscaped gardens, idyllic streetscapes. A community designed for families – with lush green parklands and quality homes. <b>An exciting location on the Coast:</b> 5 min' walk to relaxing and family-friendly beaches with outdoor pools. <b>The heart of the city:</b> Located at CBD and the meeting point of the city's transport systems, containing a high percentage of shops and offices and high raised buildings.

**Table A3.** Goodness-of-fit measures versus number of classes.

Number of latent segmentations	Number of estimated parameters	Log-likelihood value	BIC	AIC	CAIC
2	43	-2504.08	5125.41	5094.16	5137.16
<b>3*</b>	<b>73</b>	<b>-2427.31</b>	<b>5053.67</b>	<b>5000.62</b>	<b>5073.62</b>
4	103	-2449.43	5179.71	5104.86	5207.86

\*Selected model based on a combination of model fit and parsimony criteria.

**Set 1 of 4**

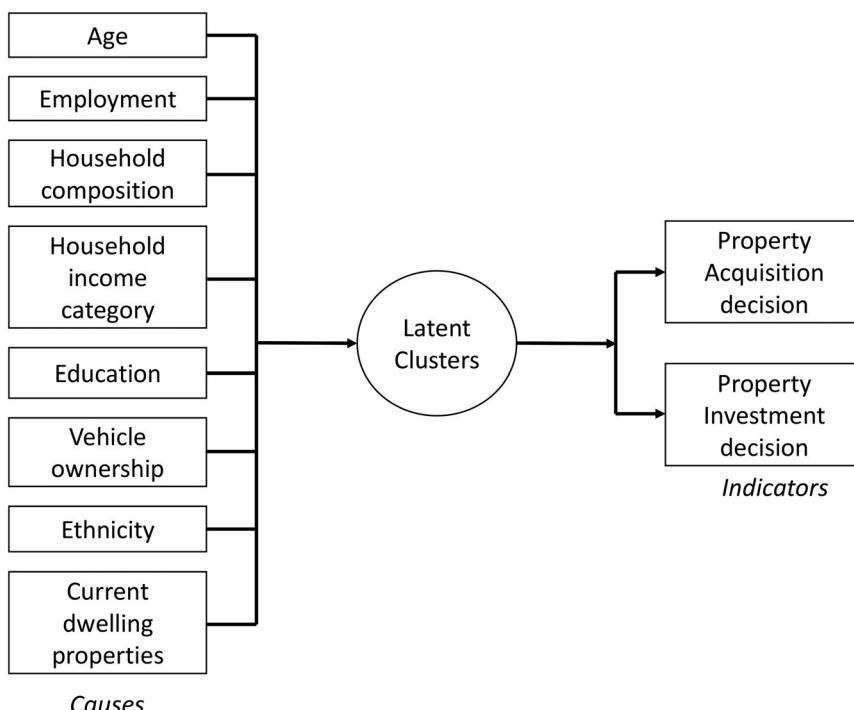
Please tell us which one of the three options you would choose to invest in today if you had only options A, B and C. You also have the choice to not invest in any of the options.

	Option A		Option B		Option C	
	Property Type	Apartment \$2,600,000	Property Value	Townhouse \$2,200,000	Investment Budget	Apartment \$2,600,000
20% Down payment	\$520,000	20% Down payment	\$440,000	20% Down payment	\$520,000	20% Down payment
Stamp duty	\$128,490	Stamp duty	\$106,490	Stamp duty	\$128,490	Stamp duty
Total	\$648,490	Total	\$546,490	Total	\$648,490	Total
Mortgage per month	\$11,675		\$9,879		\$11,675	
No. Bedrooms & Bathrooms	5	5	4	4	4	3
Vacancy Last year	4 weeks		1 week		3 weeks	
Rent per week	\$2,700		\$2,250		\$2,700	
Net Rental Yield	4.98%		5.22%		5.09%	
Capital Growth per annum	Percent 3.5% Dollar value \$91,000		Percent 12.5% Dollar value \$275,000		Percent 3.5% Dollar value \$91,000	
Net Cash Flow per annum	\$-10,499		\$-3,794		\$-7,803	
Net Investment Gain per annum	\$80,501		\$271,206		\$83,197	
Market Condition	Market is falling		Market is at the bottom		Market is hot	
Location	Premium finishes and landscaped gardens A unique opportunity with architecturally designed homes, premium finishes, landscaped gardens, idyllic streetscapes. A community designed for families - with lush green parklands and quality homes.		An ideal location for families Located just 30 minutes to the CBD, within easy reach of great shops, schools, cafes and beautiful beaches.		A peaceful location for families High proportion of owner-occupiers, lowest crime rate has easy access to shops, schools, employment.	
I would choose to invest in:	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	

OR

 I would not invest in any

**Figure A3.** Example scenario from the property investment stated preference experiment.



**Figure A4.** A Multiple Indicator and Multiple Cause (MIMIC) model of property acquisition and property investment decision outcomes.

**Table A4.** Parameter estimates (and *p*-values) for the class specific owner-occupier preferences.

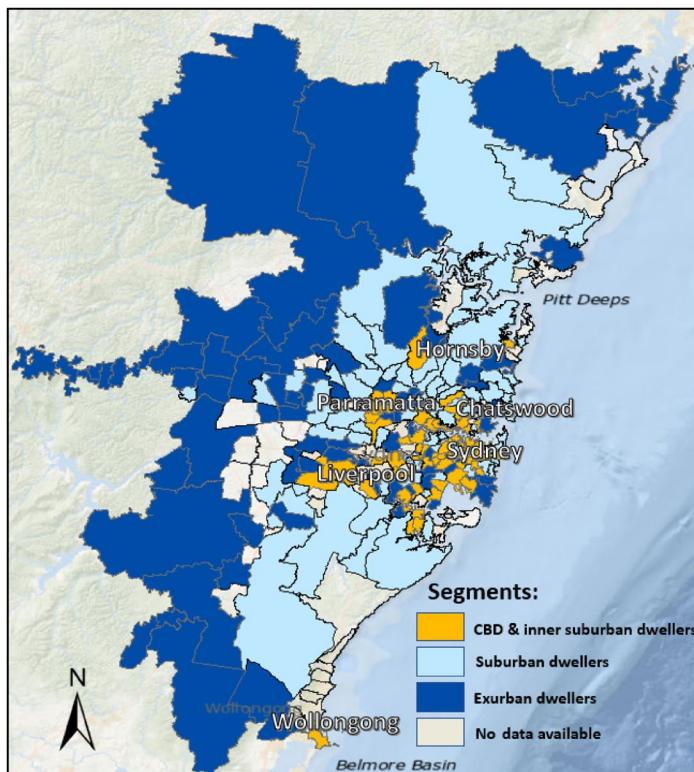
Dwelling acquisition preferences	CBD dwellers		Suburban dwellers		Exurban dwellers	
	Est	<i>p</i> -val	Est	<i>p</i> -val	Est	<i>p</i> -val
<b>Dwelling type<sup>a</sup></b>						
Free standing house constant	–	–	1.45	0.00	1.52	0.00
Flat, unit or apartment	–	–	−0.438	0.14	−0.504	0.10
<b>Number of bedrooms and bathrooms<sup>b</sup></b>						
Two bedrooms with one bathroom	–	–	−0.854	0.03	−0.713	0.05
Two bedrooms with two bathrooms	1.21	0.00	−1.13	0.04	–	–
Three bedrooms with one bathroom	0.751	0.03	–	–	–	–
Three bedrooms with two bathrooms	0.848	0.20	0.843	0.08	–	–
Three bedrooms with three bathrooms	–	–	–	–	–	–
Four bedrooms with two bathrooms	–	–	2.29	0.00	–	–
Four bedrooms with three bathrooms	−0.632	0.05	1.72	0.01	–	–
Four bedrooms with four bathrooms	–	–	–	–	–	–
Five bedrooms with two bathrooms	–	–	–	–	–	–
Five bedrooms with three bathrooms	–	–	1.34	0.01	–	–
Five bedrooms with four bathrooms	–	–	–	–	0.873	0.04
Five bedrooms with five bathrooms	–	–	–	–	–	–
Five bedrooms with six bathrooms	–	–	–	–	–	–
<b>Lot size (per 100 m<sup>2</sup>)</b>	–	–	2.24	0.03	3.22	0.00
<b>Gross floor ratio 2:1</b>	0.468	0.10	–	–	–	–
<b>Annual council rates/Strata</b>	−1.04	0.09	−3.16	0.01	−2.79	0.00
<b>Mortgage per month (10,000's)</b>	−1.35	0.03	−2.19	0.00	−6.38	0.00
<b>Age of the building</b>	−0.39	0.01	−0.452	0.05	−0.844	0.08
<b>Availability of secure garage</b>	0.868	0.00	–	–	–	–
<b>Availability of secure storage</b>	–	–	–	–	1.01	0.05
<b>Proximity</b>						
Proximity to local shopping centre (per km)	−0.203	0.24	−0.411	0.09	−1.04	0.03
Proximity to public transport (per km)	−0.286	0.14	−0.442	0.07	–	–
Proximity to public school (per km)	–	–	–	–	–	–
Proximity to parks (per km)	–	–	–	–	–	–
Proximity to CBD (per 100 min)	−1.73	0.00	–	–	–	–
Proximity to work (per 100 min)	−1.32	0.00	−0.512	0.20	–	–
<b>Neighbourhood safety</b>	0.33	0.00	0.226	0.03	0.853	0.16
<b>Neighbourhood Density</b>	0.0193	0.13	−0.112	0.00	−0.438	0.01
<b>Race composition of the suburb<sup>c</sup></b>						
Mostly Anglo-Australians	0.0897	0.00	0.313	0.00	0.333	0.00
Mostly Asian Australians	–	–	0.21	0.00	0.193	0.00
Mostly African Australians	–	–	–	–	−0.0853	0.16
Mostly Middle Eastern Australians	–	–	0.0604	0.10	–	–
<b>Land use zoning<sup>d</sup></b>						
Zoning: 85% residential, 10% Commercial, 5% Green Space	−0.080	0.07	–	–	–	–
Zoning: 60% residential, 35% Commercial, 5% Green Space	–	–	–	–	–	–
Zoning: 70% residential, 10% Commercial, 20% Green Space	−0.079	0.07	–	–	–	–

<sup>a</sup>Reference is townhouse.<sup>b</sup>Reference is one bedroom with one bathroom.<sup>c</sup>Reference is mostly Aboriginal Australians.<sup>d</sup>Reference is 35% residential, 35% commercial, 30% parks and greenspace.

**Table A5.** Parameter estimates (and *p*-values) for the class specific dwelling investment preferences.

Dwelling investment preference	CBD dwellers		Suburban dwellers		Exurban dwellers	
	Est	<i>p</i> -val	Est	<i>p</i> -val	Est	<i>p</i> -val
<b>Dwelling type<sup>a</sup></b>						
Free standing house constant	–	–	0.65	0.00	2.48	0.00
Flat, unit or apartment	0.54	0.01	–	–	–	–
<b>Dwelling value (100,000's)</b>	–0.31	0.00	–0.10	0.00	–0.71	0.00
<b>Number of bedrooms and bathrooms<sup>b</sup></b>						
Two bedrooms with one bathroom	–	–	–	–	–	–
Two bedrooms with two bathrooms	–	–	0.62	0.12	–	–
Three bedrooms with one bathroom	–	–	–	–	–	–
Three bedrooms with two bathrooms	0.68	0.09	0.77	0.05	2.14	0.00
Three bedrooms with three bathrooms	–	–	–	–	–	–
Four bedrooms with two bathrooms	1.03	0.14			1.34	0.04
Four bedrooms with three bathrooms	–	–	–	–	–	–
Four bedrooms with four bathrooms	–	–	–	–	–	–
Five bedrooms with two bathrooms	–	–	–	–	–	–
Five bedrooms with three bathrooms	–	–	–	–	–	–
Five bedrooms with four bathrooms	–	–	0.61	0.06	–	–
Five bedrooms with five bathrooms	–	–	0.77	0.01	–	–
Five bedrooms with six bathrooms	–	–	–	–	–	–
<b>Vacancy (%)</b>	–	–	–	–	–1.85	0.00
<b>Rent per week (1000s)</b>	2.30	0.00	0.47	0.13	3.86	0.00
<b>Capital growth (%)</b>	0.75	0.00	2.73	0.00	–	–
<b>Real estate market condition<sup>c</sup></b>						
Market is booming	–	–	0.60	0.01	–	–
Market is hot	–	–	0.70	0.02	–	–
Market is rising	0.56	0.12	1.13	0.00	–	–
Market is beginning to cool	–	–	–	–	–	–
Market is falling	–	–	–	–	–	–
<b>Commentary on the suburb<sup>d</sup></b>						
Easy access to a range of amenities	–	–	0.48	0.10	–	–
An ideal location for families	0.49	0.05	–	–	0.58	0.14
A peaceful location for families	0.76	0.01	0.33	0.22	–	–
An exciting location on the coast	0.92	0.00	0.51	0.03	–	–
The heart of the city	–	–	0.52	0.02	1.32	0.00

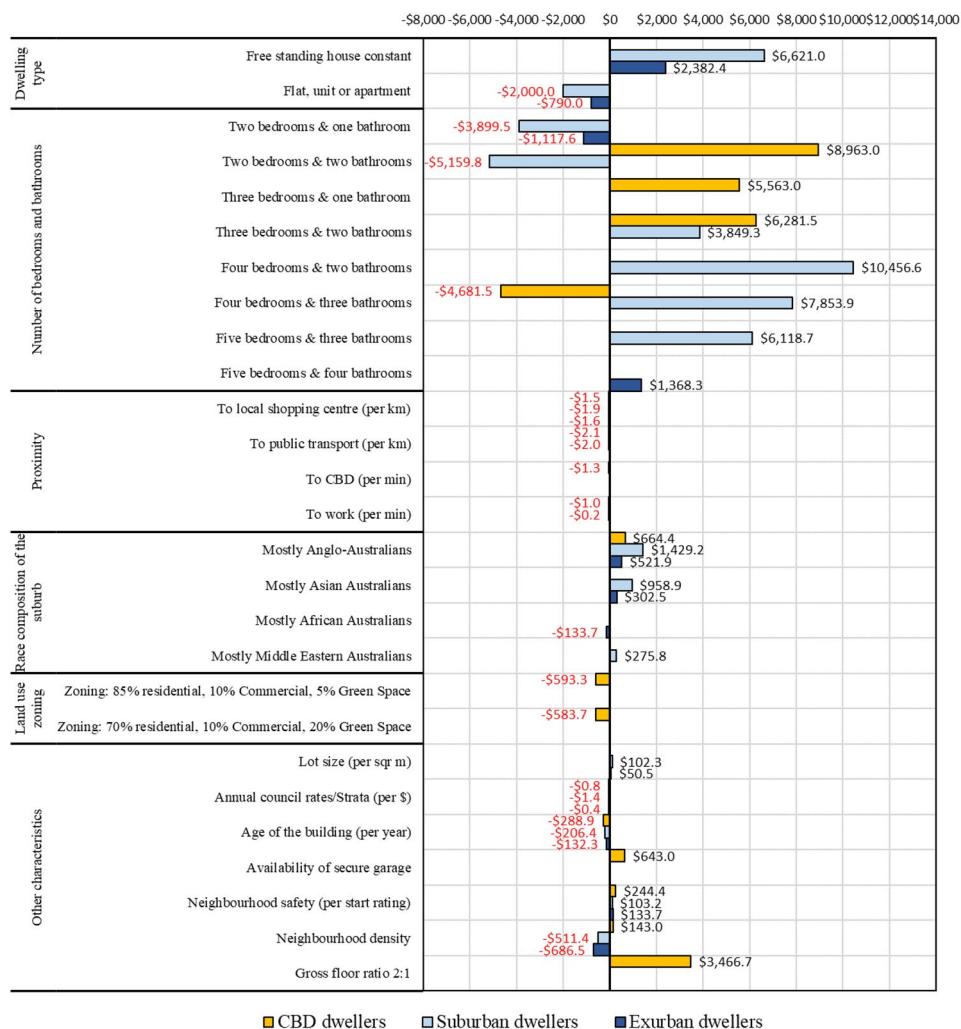
<sup>a</sup>Reference is townhouse.<sup>b</sup>Reference is one bedroom with one bathroom.<sup>c</sup>Reference is market is at the bottom.<sup>d</sup>Reference is premium finishes and landscaped gardens.



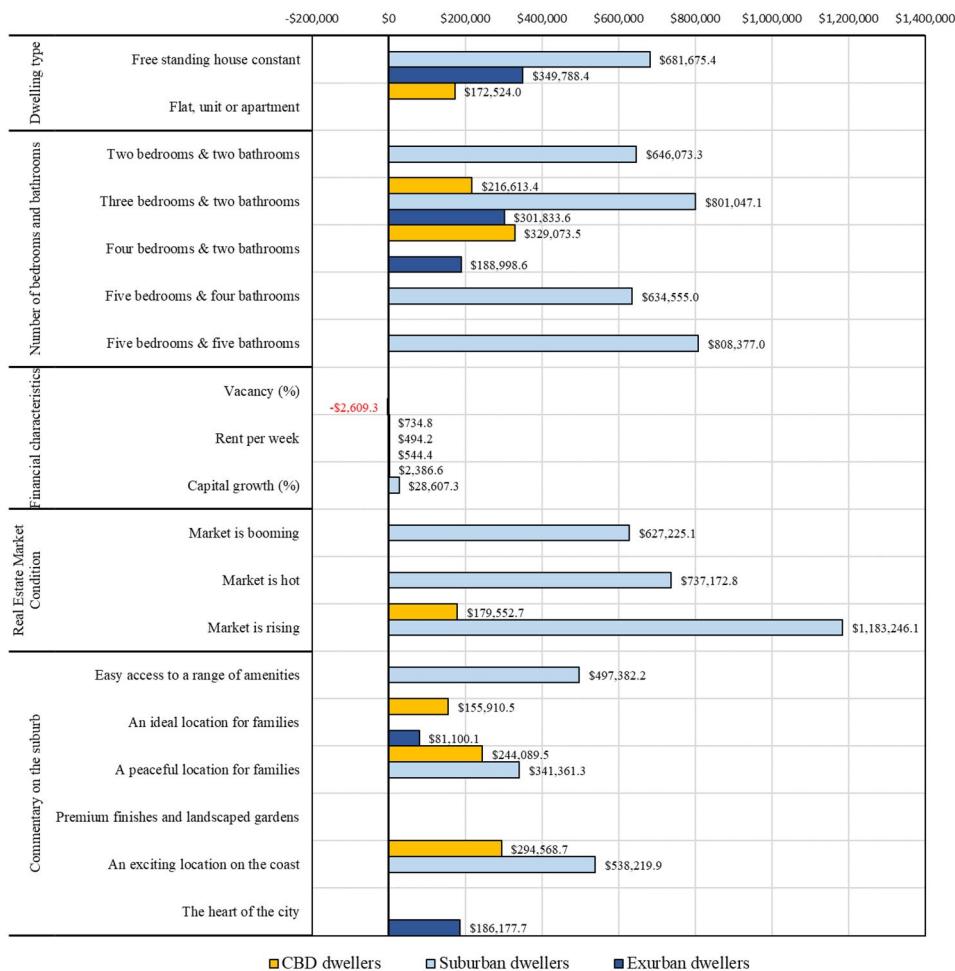
**Figure A5.** Aggregated segmentation by postcode in Sydney region.

**Table A6.** Parameter estimates (and *p*-values) for the household class membership.

Class membership model	CBD dwellers		Suburban dwellers		Exurban dwellers	
	Est	<i>p</i> -val	Est	<i>p</i> -val	Est	<i>p</i> -val
<b>Constant</b>	-0.59	0.60			2.03	0.00
<b>Age</b>					-	-
35-44 years	1.63	0.02			-	-
<b>Employment status</b>					-	-
Full time	-0.51	0.22			-	-
Retired	-	-			0.60	0.13
<b>Household income category</b>					-	-
High-income category	-	-			-1.49	0.00
Mid-Income category	1.01	0.02			-	-
<b>Education</b>					-	-
Master's degree or equivalent	-	-			-0.54	0.22
Bachelor's degree	0.94	0.04			-	-
<b>Household type</b>					-	-
Couple with children	-	-			-0.52	0.13
<b>Number of cars</b>					-	-
One car owned	-	-			-0.92	0.01
<b>Ethnic</b>					-	-
Anglo-Australians	-1.28	0.06			-	-
Asian-Australians	1.33	0.12			-	-
African Australians	-	-			1.64	0.20
Middle Eastern Australians	2.24	0.07			-	-
<b>Current Dwelling</b>					-	-
Dwelling type - House	-1.37	0.00			-	-
Gross floor area less than 104 m <sup>2</sup>	1.81	0.00			-	-
Gross floor area between 104 and 210 m <sup>2</sup>	1.35	0.00			-	-
Age of dwelling -less than 4 years	-	-			-1.33	0.09
Zoning: 35% Residential; 35% Commercial;	-	-			-1.91	0.05
30% Parks and greenspace	-	-			-	-
Live in two-bedroom apartment	-	-			-1.12	0.00



**Figure A6.** Willingness to pay/accept values for different property attributes as owner-occupier.



**Figure A7.** Willingness to pay/accept values for different property attributes when investing.

**Table A7.** High-level summary of different segments in our sample.

	CBD dwellers	Suburban dwellers	Exurban dwellers
Share of our sample	30 per cent	33 per cent	37 per cent
<b>Housing acquisition</b>	Prefer 2-3 bedrooms with 1 or 2 bathrooms, in a dense neighbourhood. WTP \$664 in mortgage per month if the race composition of the suburb was mostly Anglo-Australian. Other preferred characteristics were related to proximity: to CBD (WTP \$128 for every 10 min closer), work (WTP \$98 for every 10 min closer), public transport (WTP \$2.1 for every km closer) and shopping centres (WTP \$1.5 for every km closer).	Prefer to live in a house with 3-5 bedrooms and 2-3 bathrooms, in a low-density neighbourhood, with mixed ethnicity. WTP \$1429 in mortgage per month if the race composition of the suburb was mostly Anglo-Australian, \$959 if mostly Asian and \$276 if mostly Middle Eastern Australians. Prefer to have close proximity to work (WTP \$23 in mortgage per month for every 10 min closer), public transport (WTP \$2 for every kilometre closer) and shopping centres (WTP \$1.9 for every kilometre closer).	Prefer to live a large house with five bedrooms and four bathrooms with secure storage in a low-density neighbourhood. WTP \$522 in mortgage per month if the race composition of the suburb was mostly Anglo- Australian, WTP \$303 if mostly Asian-Australians. Close proximity to shops was also important for this group (WTP \$1.6 for every kilometre closer).
<b>Housing investment</b>	Interested in investing in apartment with either four or three bedrooms and two bathrooms, near the coast or in a peaceful location for families. Higher rent value and capital growth were both important factors, with the former being significantly more important in their decision (rental yield growth investment strategy). They were more likely to make this investment when the market was rising. WTP \$735 more on the property value for a \$1 increase in rent per week.	Interested in investing in houses with various combinations of bedrooms and bathrooms, located in an acceptable suburb. Higher rent value and capital growth were both important factors with the latter being significantly more important in the decision (capital growth investment strategy). They were more likely to make this investment when the market was rising or booming. WTP \$495 more on the property value for a \$1 increase in rent per week.	Had a strong interest in investing in houses with three or four bedrooms and two bathrooms in the heart of the city, or an ideal location for families. Had a strong tendency towards the rent value and low vacancy rate in the previous year (rental yield growth investment strategy). This segment was indifferent about the capital growth gain and the market condition. WTP \$545 more on the property value for a \$1 increase in rent per week.
<b>Demographic characteristics</b>	Mid-income male households in their 40s with a high proportion of single-person and one-parent family households. This segment had the lowest proportion of Anglo-Australian background and the highest Middle Eastern and mixed-ethnic background.	Affluent and educated couple families with children, in their 50s, with Anglo or Asian background.	Retired couple families with no children at home, with an Anglo-Australian background. Two out of three had an advanced diploma or below and earned the least compared to other segments.

(Continued)

**Table A7.** Continued.

	CBD dwellers	Suburban dwellers	Exurban dwellers
<b>Current dwelling related attributes</b>	Live in 2- or 3- bedroom apartments with floor area between 70 and 210 m <sup>2</sup> in high-density suburb. In addition to Anglo- Australians, Asian and Middle Eastern Australians were the dominant ethnic groups. Secure parking and proximity to local shopping centres and public transport were important factors when selecting the neighbourhood to live in. In addition to physical and neighbourhood characteristics, the potential for future development was a key factor in the purchasing decision.	Live in a 3- or 4-bedroom houses with floor areas between 210 and 359 m <sup>2</sup> in medium-density suburbs. Anglo-Australians were the dominant ethnic group in the suburb. Proximity to public school was very important when selecting the neighbourhood to live in. In addition to physical and neighbourhood characteristics, accessibility was a key factor in the purchasing decision.	Live in a 3- or 4-bedroom houses with a floor area of 540 m <sup>2</sup> or more, in low-density suburbs. Anglo-Australian was the dominant ethnic group in the suburb. Dwelling type and neighbourhood safety were important factors when selecting the neighbourhood to live in. In addition to physical and neighbourhood characteristics, affordability of the home was a key factor in the purchasing decision.

**Table A8.** Household demographic profile extracted through sample enumeration exercise.

Variables	CBD dwellers	Suburban dwellers	Exurban dwellers
<b>Gender</b>			
<i>Male</i>	58.0%	54.7%	48.4%
<i>Female</i>	42.0%	45.3%	51.7%
<b>Marital status</b>			
<i>Never married</i>	22.2%	18.6%	16.6%
<i>Widowed</i>	2.6%	1.9%	4.8%
<i>Divorced</i>	8.5%	5.2%	7.3%
<i>Separated but not divorced</i>	3.2%	0.8%	2.8%
<i>Married</i>	55.3%	67.9%	60.0%
<i>de facto</i>	8.2%	5.5%	8.6%
<b>Age range</b>			
<i>18–24 yrs</i>	5.5%	3.8%	2.9%
<i>25–34 yrs</i>	16.8%	15.7%	12.0%
<i>35–44 yrs</i>	20.5%	26.8%	14.9%
<i>45–54 yrs</i>	22.6%	20.6%	18.6%
<i>55–64 yrs</i>	19.8%	18.3%	22.4%
<i>65+ yrs</i>	14.9%	14.9%	29.3%
<b>Average Age</b>	37.2	47.6	54.0
<b>Household type</b>			
<i>Couple family with no children</i>	34.4%	25.2%	39.7%
<i>Couple family with children</i>	31.0%	53.8%	30.0%
<i>One parent family</i>	7.5%	3.4%	5.6%
<i>Other family</i>	1.0%	1.6%	3.3%
<i>Single person household</i>	22.1%	12.5%	18.1%
<i>Group household (i.e. shared)</i>	4.0%	3.6%	3.2%
<b>Employment</b>			
<i>Employed full time</i>	48.9%	58.8%	39.5%
<i>Employed part time</i>	19.7%	16.8%	15.2%
<i>Unemployed looking for work</i>	2.2%	3.9%	2.3%

(Continued)

**Table A8.** Continued.

Variables	CBD dwellers	Suburban dwellers	Exurban dwellers
<i>Unemployed not looking for work</i>	3.0%	5.0%	5.8%
<i>Retired</i>	25.5%	14.6%	36.0%
<i>Student</i>	0.8%	0.9%	0.7%
<i>Disabled</i>	0.0%	0.0%	0.5%
<b>Education</b>			
<i>PhD</i>	2.1%	3.3%	2.4%
<i>Master's degree or equivalent</i>	11.7%	18.4%	9.2%
<i>Graduate diploma and graduate certification level</i>	9.4%	9.4%	10.3%
<i>Bachelor's degree</i>	40.2%	29.1%	21.2%
<i>Advanced diploma and diploma level</i>	10.7%	11.1%	17.8%
<i>Certificate level</i>	8.5%	14.4%	16.8%
<i>Year 12 or equivalent</i>	10.0%	10.0%	13.8%
<i>Below year 12</i>	7.4%	4.2%	8.4%
<b>Household income range</b>			
<i>\$1–\$7,799 per year</i>	1.2%	0.5%	1.1%
<i>\$7,800–\$15,599 per year</i>	0.7%	1.0%	0.6%
<i>\$15,600–\$20,799 per year</i>	2.1%	0.6%	2.3%
<i>\$20,800–\$25,999 per year</i>	1.1%	0.6%	3.6%
<i>\$26,000–\$33,799 per year</i>	2.3%	2.1%	3.3%
<i>\$33,800–\$41,599 per year</i>	4.5%	3.0%	7.4%
<i>\$41,600–\$51,999 per year</i>	8.5%	3.9%	10.4%
<i>\$52,000–\$64,999 per year</i>	8.8%	4.8%	11.8%
<i>\$65,000–\$77,999 per year</i>	9.3%	4.0%	8.1%
<i>\$78,000–\$90,999 per year</i>	12.0%	5.3%	11.3%
<i>\$91,000–\$103,999 per year</i>	12.8%	7.3%	12.0%
<i>\$104,000–\$129,999 per year</i>	11.5%	21.6%	9.1%
<i>\$130,000–\$155,999 per year</i>	12.1%	22.1%	7.7%
<i>\$156,000–\$181,999 per year</i>	4.0%	7.9%	3.9%
<i>\$182,000–\$207,999 per year</i>	1.9%	7.3%	3.2%
<i>\$208,000 or more per year</i>	7.1%	8.1%	4.3%
<b>Average annual income</b>	\$ 97,179	\$ 122,917	\$ 86,668
<b>Household income category</b>			
<i>Low-Income (below \$52k)</i>	20.5%	11.6%	28.6%
<i>Mid-income (between \$52 and \$104k)</i>	43.0%	21.4%	43.2%
<i>High-income (more than \$104k)</i>	36.6%	66.9%	28.2%
<b>Number of cars</b>			
<i>None</i>	6.0%	2.1%	10.9%
<i>1 car</i>	60.0%	48.6%	40.0%
<i>2 cars</i>	27.3%	41.2%	36.9%
<i>More than 2 cars</i>	6.7%	8.0%	12.2%
<b>Australia citizen</b>			
<i>Yes</i>	93.8%	95.2%	94.6%
<i>No</i>	6.2%	4.8%	5.4%
<b>Household ethnic group</b>			
<i>Anglo Australian</i>	59.4%	68.1%	78.1%
<i>Asian Australian</i>	18.4%	22.5%	13.4%
<i>African Australian</i>	0.4%	0.8%	0.5%
<i>Middle Eastern Australian</i>	7.1%	0.7%	1.2%
<i>Aboriginal Australian</i>	1.2%	0.8%	0.4%
<i>Mixed ethnic group</i>	13.6%	7.1%	6.5%
<b>Dwelling ownership</b>			
<i>Owned outright</i>	52.3%	45.9%	53.0%
<i>Owned with mortgage</i>	30.7%	46.5%	35.7%
<i>Being rented</i>	13.8%	6.0%	8.3%
<i>Other</i>	3.2%	1.6%	3.1%

**Table A9.** Household current residential profile extracted through sample enumeration exercise.

Variables	CBD dwellers	Suburban dwellers	Exurban dwellers
<b>Dwelling type</b>			
House	46.9%	77.8%	76.1%
Townhouse	16.9%	9.3%	9.5%
Apartment	35.6%	12.9%	13.9%
Other	0.6%	0.1%	0.4%
<b>Number of bedrooms</b>			
1 bedroom	4.9%	2.1%	4.3%
2 bedrooms	36.8%	14.9%	19.8%
3 bedrooms	35.2%	39.2%	35.4%
4 bedrooms	17.4%	34.9%	31.8%
5 bedrooms	4.2%	7.6%	7.6%
6 bedrooms plus	1.4%	1.4%	1.2%
<b>Number of bathrooms</b>			
1 bathroom	38.3%	24.2%	44.5%
2 bathrooms	51.7%	63.8%	35.9%
3 bathrooms	7.8%	8.3%	15.1%
4 bathrooms and more	2.2%	3.8%	4.4%
<b>Property gross floor area</b>			
Less than 70 m <sup>2</sup>	5.9%	4.1%	3.8%
Between 70 m <sup>2</sup> and 104 m <sup>2</sup>	25.9%	11.2%	16.2%
Between 105 m <sup>2</sup> and 139 m <sup>2</sup>	19.9%	13.0%	10.3%
Between 140 m <sup>2</sup> and 174 m <sup>2</sup>	20.5%	14.2%	13.9%
Between 175 m <sup>2</sup> and 209 m <sup>2</sup>	11.9%	13.9%	10.9%
Between 210 m <sup>2</sup> and 359 m <sup>2</sup>	7.9%	24.8%	22.1%
Between 360 m <sup>2</sup> and 539 m <sup>2</sup>	5.1%	13.6%	13.1%
540 m <sup>2</sup> More	2.9%	5.2%	9.6%
<b>Property facing direction</b>			
North	30.7%	28.7%	27.7%
Northeast	15.4%	16.8%	12.7%
Northwest	10.1%	10.4%	9.9%
East	18.9%	15.4%	12.0%
West	15.1%	12.0%	18.6%
South	5.6%	9.3%	11.4%
Southeast	1.2%	4.4%	4.7%
Southwest	3.0%	3.0%	3.0%
<b>Age of building</b>			
Less than a year ago	2.1%	1.6%	1.0%
Between 1 and 4 years ago	8.6%	11.4%	2.7%
Between 5 and 14 years ago	22.6%	19.4%	13.7%
Between 15 and 30 years ago	31.1%	25.2%	36.4%
More than 30 years ago	35.6%	42.5%	46.3%
<b>Availability of secured garage</b>			
Yes	77.5%	84.6%	73.8%
No	22.5%	15.4%	26.2%
<b>Availability of secured storage</b>			
Yes	61.6%	69.1%	65.4%
No	38.4%	30.9%	34.6%
<b>Neighbourhood safety</b>			
Not safe at all – 1 star	1.2%	0.0%	0.6%
Two stars	2.6%	1.3%	1.8%
Three stars	21.3%	15.8%	21.8%
Four stars	39.8%	47.1%	40.5%
Very safe – 5 stars	35.2%	35.9%	35.3%
<b>Neighbourhood density</b>			
Low	17.0%	27.9%	37.2%
Medium	50.1%	57.0%	50.6%
High	32.9%	15.1%	12.2%
<b>Neighbourhood dominant ethnic composition</b>			
Anglo Australian	42.9%	54.8%	54.7%
Asian Australian	16.0%	10.6%	9.6%
African Australian	0.8%	0.4%	0.0%

(Continued)

**Table A9.** Continued.

Variables	CBD dwellers	Suburban dwellers	Exurban dwellers
<i>Middle Eastern Australian</i>	6.4%	2.8%	3.5%
<i>Aboriginal Australian</i>	0.2%	0.2%	0.7%
<i>Mixed ethnicity</i>	33.8%	31.2%	31.5%
<b>Neighbourhood zoning</b>			
85% Residential; 10% Commercial; 5% Parks and green	41.2%	46.8%	56.6%
60% Residential; 35% Commercial; 5% Parks and green	26.9%	18.9%	17.2%
70% Residential; 10% Commercial; 20% Parks and green	23.3%	27.9%	23.7%
35% Residential; 35% Commercial; 30% Parks and green	7.4%	5.3%	1.0%
Other	1.2%	1.2%	1.6%
<b>Years lived in current home</b>			
Less than 1 year	5.8%	4.9%	5.1%
1–3 years	17.3%	16.0%	10.8%
More than 3 years but less than 10 years	32.4%	29.6%	24.0%
More than 10 years	44.4%	49.4%	60.2%
<b>Years lived in current postcode</b>			
Less than 1 year	2.4%	3.6%	4.0%
1–3 years	14.7%	12.0%	8.9%
More than 3 years but less than 10 years	32.5%	29.7%	21.9%
More than 10 years	50.4%	54.8%	65.3%
<b>Years lived in current suburb</b>			
Less than 1 year	3.1%	4.5%	4.1%
1–3 years	14.9%	13.1%	9.3%
More than 3 years but less than 10 years	32.2%	27.5%	22.5%
More than 10 years	49.8%	54.9%	64.2%
<b>Proximity to shopping centre</b>			
400 meters	23.3%	17.2%	14.1%
800 meters	21.5%	20.8%	18.8%
1200 meters	21.1%	22.0%	19.1%
1600 meters	11.9%	12.2%	13.4%
More than 1600 meters	22.3%	27.8%	34.6%
<b>Proximity to public transport</b>			
400 meters	63.5%	55.7%	49.6%
800 meters	22.3%	20.8%	23.2%
1200 meters	8.5%	13.5%	20.0%
1600 meters	2.2%	2.7%	2.9%
More than 1600 meters	3.5%	7.4%	4.3%
<b>Proximity to public school</b>			
400 meters	26.7%	28.8%	24.7%
800 meters	30.8%	37.4%	25.7%
1200 meters	26.8%	22.8%	24.4%
1600 meters	7.1%	5.2%	12.0%
More than 1600 meters	8.6%	6.0%	13.2%
<b>Proximity to parks</b>			
400 meters	44.6%	50.0%	42.2%
800 meters	21.6%	23.3%	21.1%
1200 meters	25.1%	11.0%	21.9%
1600 meters	4.6%	8.8%	5.7%
More than 1600 meters	4.1%	7.0%	9.2%
<b>Proximity to CBD</b>			
10 min	9.8%	5.3%	3.1%
20 min	25.8%	7.7%	7.9%

(Continued)

**Table A9.** Continued.

Variables	CBD dwellers	Suburban dwellers	Exurban dwellers
30 min	12.5%	11.5%	11.1%
45 min	5.0%	10.2%	6.6%
60 min or more	46.9%	65.3%	71.3%
<b>Proximity to work</b>			
10 min	9.3%	7.1%	8.0%
20 min	5.7%	3.7%	3.3%
30 min	6.7%	7.0%	4.6%
45 min	7.3%	5.3%	1.6%
60 min or more	71.0%	77.0%	82.5%
<b>Preferred to have proximity to...</b>			
<i>Shops</i>	31.7%	23.8%	32.6%
<i>Public Transport</i>	40.8%	43.7%	41.1%
<i>School</i>	4.7%	7.4%	2.3%
<i>Parks</i>	8.2%	9.1%	6.1%
<i>CBD</i>	4.1%	4.7%	3.1%
<i>Work</i>	8.8%	8.5%	11.1%
<i>Other</i>	1.8%	2.6%	3.8%
<b>Preferred number of bedrooms</b>			
1 bedroom	3.6%	1.0%	4.3%
2 bedrooms	30.9%	14.3%	15.5%
3 bedrooms	41.4%	34.7%	38.8%
4 bedrooms	19.8%	39.8%	33.6%
5 bedrooms	3.4%	6.3%	6.3%
6 bedrooms plus	1.0%	3.8%	1.4%
<b>Important factors when purchasing/renting</b>			
<i>Physical characteristics</i>	30.2%	30.2%	30.8%
<i>Neighbourhood accessibility and proximity</i>	45.0%	42.6%	36.7%
<i>Property potential for future development</i>	10.2%	3.8%	3.2%
<i>Financial condition and affordability of the property</i>	9.5%	7.1%	26.3%
<i>Market condition</i>	3.7%	15.3%	3.0%
<i>Ethnic composition</i>	0.0%	1.0%	0.0%
<i>Other</i>	1.4%	0.0%	0.0%

**Table A10.** Reported household ethnic group versus the dominant ethnic group in the neighborhood.

	CBD dwellers		Suburban dwellers		Exurban dwellers	
	Household ethnic group	Neighbourhood dominant ethnic group	Household ethnic group	Neighbourhood dominant ethnic group	Household ethnic group	Neighbourhood dominant ethnic group
Anglo Australian	59.4%	42.9%	68.1%	54.8%	78.1%	54.7%
Asian Australian	18.4%	16.0%	22.5%	10.6%	13.4%	9.6%
African Australian	0.4%	0.8%	0.8%	0.4%	0.5%	0.0%
Middle Eastern Australian	7.1%	6.4%	0.7%	2.8%	1.2%	3.5%
Aboriginal Australian	1.2%	0.2%	0.8%	0.2%	0.4%	0.7%
Mixed backgrounds	13.6%	33.8%	7.1%	31.2%	6.5%	31.5%