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# Demographics and transport choices of new households on Melbourne's urban fringe

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## Abstract

The growth areas on Melbourne's urban fringe are expected to accommodate almost half of the city's 600,000 new households over the next 20 years. The growth areas often appear in the literature on transport disadvantage as areas of mortgage stress and social disadvantage, where high levels of car use and ownership are "forced" by long distances and poor access to public transport.

This paper finds that residents of the new housing estates in Melbourne's growth areas do not fit this description. Households on residential estates in four urban-fringe local government areas are profiled using data from the real-estate company Oliver Hume, and their characteristics compared to growth-area households overall. The paper then examines the car ownership and journey to work of households on these new estates, and asks whether proximity to public transport is a factor in their choice of location.

## 1. Introduction

Melbourne's *growth areas*, where greenfield residential development is concentrated, are located in six local government areas (LGAs) on Melbourne's urban fringe (see map in Appendix). The six growth LGAs are home to 21 per cent of Melbourne's population, and between 2008 and 2009 their populations are increased by between 3.5 and 8.1 per cent, more than the 2.4 per cent increase in metropolitan Melbourne as a whole.<sup>1</sup> They are also becoming more popular as well as more populous: in the ten years to 2006, the proportion of Melbourne's residential sales that were in growth LGAs increased from 16 to 26 per cent.<sup>2</sup> Victorian Government strategy<sup>3</sup> calls for the growth areas to accommodate 284,000 (or 47 per cent) of the 600,000 new households Melbourne is projected to have by 2030.<sup>4</sup>

This paper focuses on households in new residential estates in the growth areas. It profiles the demographic and journey-to-work characteristics of these households using data from a survey of buyers (by the real-estate company Oliver Hume, which has a large share of this market), and also begins to address the question of whether proximity to public transport is a factor in a households' decisions to move to growth-area estates.

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<sup>1</sup> Australian Bureau of Statistics (2010), as cited in Department of Planning and Community Development (2010)

<sup>2</sup> Valuer-General (2008)

<sup>3</sup> Victorian Government (2008)

<sup>4</sup> The target of a roughly 50-50 split between new housing in established areas and greenfield urban-fringe areas is unremarkable for new-world cities: Perth is aiming to house 60 per cent of its additional population between 2004 and 2029 in established areas, while Toronto plans for 40 per cent of each year's new residential property to be built in established areas by 2015.

## 2. Context and literature

Growth areas often feature in the literature on transport and social disadvantage. The early findings of Currie et al (2009) regarding transport disadvantage in Melbourne, to take a recent example, focused on “forced car ownership” in the urban fringe, and the well known VAMPIRE index of Dodson and Sipe (2006, 2008) highlighted households in the urban-fringe growth areas of Melbourne, Brisbane and Sydney as vulnerable to increases in fuel prices and mortgage rates.

As this paper highlights, however, households on new residential estates have different characteristics to those of growth-LGA households overall. While the Oliver Hume data provides new and detailed information on the estate residents, the fact that residents on new estates are financially better-off than their neighbours in surrounding areas should not be new. The Socio-Economic Indices for Areas produced by the Australian Bureau of Statistics (ABS) show that urban-fringe LGAs are socio-economically disadvantaged compared to other metropolitan LGAs, but at smaller geographical levels the new residential estates show up as pockets of *advantage*.

Nor is transport disadvantage the sole preserve of the outer suburbs. The ABS’s *Housing Mobility and Conditions 2007–08* (based on results of the 2007–08 *Survey of Income and Housing*) found that renters, especially those renting from state housing authorities, report substantially greater difficulty with getting around than owner-occupiers with or without mortgages. Indeed, renters reported almost as much difficulty with getting around as households in the lowest quintile of equivalized disposable household income. Since growth LGAs have smaller proportions of renting households than the rest of Melbourne<sup>5</sup>, and housing-authority renters are disproportionately in inner-city areas,<sup>6</sup> this shows that any study of transport disadvantage that considers only the urban fringe will miss an important part of the picture.

The connection between social disadvantage and transport disadvantage, while undeniable, is complicated. Two key points are that firstly, *vulnerability* to financial hardship (as measured by Dodson and Sipe, for example) is different to *realised* hardship; and, secondly, that many different indicators of social and transport disadvantage are used in the literature (see e.g. Delbosc and Currie, 2010, for a brief overview).<sup>7</sup>

Caution is needed because the many different indicators of advantage and disadvantage often given inconsistent results. For example, Delbosc and Currie (2010) found that self-reported difficulty with transport did not correlate well with the quantity of actual travel. In related work, Currie and Delbosc (2009) concluded that it was misleading to speak of “forced car ownership” on the urban fringe, because low-income households with more than one car

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<sup>5</sup> The proportion of renting households in growth LGAs ranges from 16 per cent in Melton to 20 per cent in Wyndham, compared to 25 per cent in Melbourne. (ABS Census 2006)

<sup>6</sup> 2.8 per cent of households in metropolitan Melbourne (the Melbourne Statistical Division) rent from housing authorities. The proportion is less than 2 per cent in growth LGAs except for Casey (2.1 per cent) and Hume (3.4 per cent). In the inner-northern LGA of Yarra, 11.6 per cent of households are housing-authority renters. (ABS Census 2006)

<sup>7</sup> Main indicators of transport disadvantage include self-reported difficulty with transport (such as in ABS, 2009), access to public transport (but there is as yet no generally accepted measure for this), and the quantity of actual travel. Measures of social disadvantage include measures of exclusion (such as unemployment, income, or participation in various activities) and feelings of well-being. Some studies (e.g. Currie et al., 2009) use combinations of indicators to define socio-transport disadvantage, and others concentrate on particular groups of people (such as the elderly, the young, or handicapped) who are more likely to be disadvantaged in both respects (e.g. Rosenbloom and Morris, 1998; Casas, 2007; Hurni, 2007).

had usually made a conscious decision to trade off proximity to activities or public transport for cheaper housing and greener surroundings.

Middle-income households on new housing estates, the subject of this paper, have also made this trade-off (though they can add housing quality to the positive side of the ledger). Moving to the outer suburbs is not a new phenomenon in Australian capital cities (see e.g. Burnley et al, 1997), but decreasing housing affordability since the late 1990s has made the issue more topical.

### 3. Methodology

This paper relies primarily on data from the Australian Bureau of Statistics' 2006 Census and a survey of homebuyers by the real estate company Oliver Hume. Each individual buyer who buys a new house on an estate marketed by Oliver Hume is asked to fill in the company's *Buyer Profile and Sentiment Survey* (OH Survey for short). The response rate is about 95 per cent. The study sample is the 5,570 households in the survey who bought houses on Oliver Hume estates in four growth LGAs — Casey, Whittlesea, Melton, and Wyndham (see map in Appendix) — between 2004 (when the OH Survey began) and February 2010 (the most recent data available to the authors).<sup>8</sup>

There is no reason to believe that the Oliver Hume sample is not representative of new housing estates in these four LGAs, since the company does not focus on any one segment of the market and has consistently had a market share of about 16–20 per cent in Melbourne growth-area land projects since the OH Survey began.<sup>9</sup>

Data on age, household composition, and household income provide a rough demographic look at who OH households are (Section 4.1). Data on previous tenure types (Section 4.2), car ownership and journey to work (Section 4.3) give the necessary context for the discussion (Section 4.4) of the importance of several factors in OH households' choice of location. The factors considered are proximity to public transport, proximity to family or friends, and proximity to previous home. The stated importance of each of these is recorded in the OH Survey on a three-rank scale, and compared in Section 4.4 to two measures of a household's choice of estate: whether the household moved from one LGA to another, and the distance of the estate from public transport, determined as described below.

For Section 4.4, GIS analysis was conducted using data from Melbourne's operational public-transport body, Metlink. In the absence of definitive measures of public transport accessibility (the subject of ongoing work at the Victorian Department of Transport), a crude indicator is used: the shortest distance from the edge of the estate to a public transport stop (bus stop or train station).<sup>10</sup> Estates were grouped into three levels of proximity to public transport: estates that have bus stops within the estate (none have train stations), estates that have bus stops or train stations within 400m of the estate boundary, and estates that do

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<sup>8</sup> An additional ~1,000 survey records are of investment buyers; these have been excluded from the analysis.

<sup>9</sup> Andrew Perkins, National General Manager (Research), Oliver Hume Real Estate Group, private communication

<sup>10</sup> The addresses of individual households were withheld from the Department of Transport for privacy. This indicator represents the minimum distance that a household on a given estate might be from public transport.

not.<sup>11</sup> The Metlink data on location of public-transport stops was from 2009. Note that provision of public transport in Melbourne's growth areas is changing, and Section 4.4 reports the results of a rough exploratory analysis only.

The households and people in the OH Survey dataset are referred to as *OH households* or *OH residents* for short throughout this paper. *GA households* means all households in the four growth LGAs considered, and *MSD households* means all households in metropolitan Melbourne, defined by the ABS's Melbourne Statistical Division.

## 4. Results

In Section 4.1 the demographics of OH households are compared with those in the growth LGAs overall. Section 4.2 examines the previous tenure of OH households and the proportion of first-home buyers. Section 4.3 examines two transport-specific indicators: the number of cars per household and the journey to work (mode and distance). Section 4.4 examines three stated factors in households' choice of location (proximity to public transport, to their previous home, and to friends and family) to see if stated preferences are borne out by choices of residential estates.

### 4.1. Demographic overview of new housing estate residents

Oliver Hume buyers fit *some* of the stereotyping of new growth-area residents. They are predominantly couple and family<sup>12</sup> households, and in more than half of them the oldest person was under 35, as shown in Table 1.

**Table 1.** Percentage of OH households by age of oldest adult and by household composition<sup>13</sup>

Household Composition	Age of oldest person						All ages
	18 - 24	25 - 34	35 - 49	50 - 59	≥ 60	Not stated	
Single	3%	8%	3%	1%	0%	0%	15%
Couple	4%	20%	5%	2%	1%	0%	32%
Family	3%	19%	24%	5%	1%	0%	53%
All compositions <sup>14</sup>	10%	48%	31%	8%	3%	1%	100%

#### Household composition

The composition of OH households is similar to that of GA households overall (see Table 2). The proportion of couple households is slightly higher among OH than GA households, at the expense of family households. The composition of GA households differs from that of

<sup>11</sup> The distance 400m was used because it is the Department of Transport's yardstick for accessibility to the bus network and also because it gave a comparable number of estates in each of the three groups.

<sup>12</sup> The Oliver Hume survey asks households to class themselves as single, couple, or family. The Australian Bureau of Statistics (ABS), by contrast, has a comprehensive and detailed classification of household composition. In this paper, the term *family* excludes couples without children. Households recorded in the ABS Census as a couple family with no children are termed a *couple* household.

<sup>13</sup> Throughout this paper, rounding means that percentages in tables may not add to 100%.

<sup>14</sup> This table excludes households with other, unrecorded compositions, such as group households.

Melbourne households overall in having a smaller proportion of one-person households and a greater proportion of family households.

The majority of OH households had children of primary-school age or younger, as expected from the age distribution in Table 1, but a quantitative breakdown of children's ages is not possible because of limitations of the OH dataset.

**Table 2.** Composition of OH, GA, and MSD households

Household composition <sup>15</sup>	Oliver Hume buyers (OH)	Four growth LGAs (GA)	Metropolitan Melbourne (MSD)
Single	15%	16%	24%
Couple	32%	24%	24%
Family	53%	59%	47%

### Household income

The median income of OH households is higher than that of GA and MSD households: \$78,000 per year (gross, unequalized household income) compared to \$56,000 for MSD households, \$54,000 for Whittlesea (the lowest of the four growth LGAs considered in this paper), and \$60,000 for Wyndham (the highest of the four).<sup>16</sup>

In short, OH households are younger and wealthier than GA households, but the mix of household compositions is about the same.<sup>17</sup>

## 4.2. First-home buyers and previous tenure

The OH sample includes a disproportionate number of first-home buyers compared to metropolitan Melbourne overall. In Melbourne, 29 per cent of house, flat and unit sales were to first-home buyers in 2004, and 32 per cent in 2007,<sup>18</sup> whereas the proportion of first-home buyers among OH households increased from 36 per cent in 2004 to 55 per cent in 2007 (Table 3). But less than 40 per cent of OH *family* households are first-home buyers and less than 40 per cent of first-home buyers are families (Table 4). Buyers other than first-home buyers will be called “upgrade” buyers for short.<sup>19</sup>

<sup>15</sup> This table excludes households with other, unrecorded compositions, such as group households.

<sup>16</sup> No income data is tabulated here because the OH Survey collects only broad ranges of income that are not deflated from year to year; these are of limited quantitative use. But the income difference between OH and other households is real: OH records from 2006 show that the median income of OH households is greater than those of GA and MSD households as recorded in the 2006 Census.

<sup>17</sup> When comparing the two populations, however, it should be noted that all OH households are home-buyers, whereas 18 per cent of GA households are renting, and the median income of households that rent is lower than that of households with a mortgage.

<sup>18</sup> Valuer-General (2008), *A guide to property values*; State Revenue Office data on first-home buyers

<sup>19</sup> Those buying a house for a second or subsequent time are called “upgrade” buyers, following industry language. The most common reason that Australians give for moving house, after ‘buying their own home’, is that they ‘wanted a bigger or better home’ (ABS, 2009). An even better justification for the term “upgrade” is that, if a household already owns a house (with or without a mortgage), they would only move to another one if they find it, or its location, “better” or more suitable, assuming that it is rare for an owner-occupier household to be in such financial difficulty that they “downgrade”. People may also move to smaller (and possibly cheaper) houses as they age and their households gets smaller, but few OH households fit this description (see age breakdown in Table 1).

**Table 3.** Proportion of OH households that were first-home buyers, by year

First home buyer?	Calendar Year							All years
	2004	2005	2006	2007	2008	2009	2010	
First-home buyers	36%	42%	45%	55%	55%	59%	49%	52%
“Upgrade” buyers	64%	58%	55%	45%	44%	40%	50%	48%
Not stated	0%	0%	0%	1%	0%	0%	1%	0%

**Table 4.** Number of OH households by first-home buyer status and household composition

Household composition	First-home buyer	“Upgrade” buyer	Not stated	Total
Single	588	220	0	808
Couple	1181	603	8	1792
Family	1080	1840	11	2931
N/A	23	15	1	39
Total	2872	2678	20	5570

Most single and couple OH households are first-home buyers, whereas most family households are not. A closer look shows the balance between previous tenure types also depends strongly on household composition, as shown in Table 5. ‘Living with parents’ is the most common type of previous tenure for single OH buyers, while couple OH households were most likely to have been renting and most OH families were already owner-occupiers.

**Table 5.** Previous tenure type of OH households, by household composition

Household composition	Previous tenure type					Total
	Owner-occupier	Renting	Living with parents	Other	Not stated	
Single	19%	34%	42%	4%	1%	100%
Couple	29%	42%	24%	3%	2%	100%
Family	56%	29%	12%	2%	2%	100%
All compositions	42%	34%	20%	3%	2%	100%

The variation with household composition is expected, but there are still points worth noting.

Firstly, a substantial proportion of OH buyers were previously living with parents. There has been a nationwide trend, to which declining housing affordability has contributed, for children to live with parents for longer.<sup>20</sup> Note also that some OH buyers whose previous tenure was ‘living with parents’ may have left the parental home in the past and moved back in: it is anecdotally known that some people move back in with parents so that they can save to buy a house.

Secondly, the proportion of OH households that were previously renting, 34 per cent, is comparatively small. Across Australia, about 45 per cent of recently-moved households with mortgages were previously renting.<sup>21</sup>

<sup>20</sup> See e.g. Beer (2008)

<sup>21</sup> ABS (2009). The sample is of households where the reference person had moved in the five years before the 2007–08 Survey of Income and Housing.

These results contrast with the findings of Burnley et al (1997) that those who moved to Sydney's outer suburbs from the inner or middle suburbs in the early 1990s were typically renters entering the home-ownership market. The fact that a large proportion of OH buyers were "upgrade" buyers who had been owner-occupiers before confirms that Melbourne's urban fringe is not merely a choice of last resort for those who are desperate to buy their first house in a city of declining housing affordability.

This is of course not to deny that the lower price of housing on the urban fringe may attract buyers who would prefer to be closer to the city if prices there were lower, which would be consistent with the disproportionate number of first-home buyers in the OH sample. For any given household composition, OH first-home buyers tend to have lower incomes than "upgrade" OH buyers, and first-home buyers have not benefited from capital growth as "upgrade" buyers have. So first-home buyers typically have less to spend on buying a house. OH first-home buyers may also be more vulnerable to mortgage stress from interest rates increases if, like other Australian first-home buyers, their housing costs make up a greater proportion of their income compared to "upgrade" buyers.<sup>22</sup>

Nonetheless, the fact that many OH households, including a majority of OH families, were "upgrade" buyers shows that even households who already own equity in housing can prefer new urban-fringe houses to their previous houses.

### 4.3. Car ownership and journey to work

#### 4.3.1. Car ownership

Compared to GA households, a greater proportion of OH households have two cars, and smaller proportions have one car or more than two cars, but the differences are quite small. 26 per cent of OH households have one car, compared to 30 per cent of GA households; and 12 per cent of OH households have three or more cars, compared to 19 per cent of GA households.

These differences may partly be explained by the different household sizes and incomes of OH and GA households — for example, families with adult children are much more likely to have three or more cars than families with only children in primary school — but this cannot be quantified because the OH Survey lacks good data on the number and age of children.

It is also possible that the lower rate of high-car-ownership (three or more cars per household) among OH households arises because the survey records the number of cars households own *at the time of purchasing the new house*. So it is possible that car ownership on the OH housing estates is not low, despite the data in the OH Survey, because OH households buy additional cars after they move. This hypothesis seems to be supported by Table 6, which shows that OH families that previously lived in growth areas had more cars than those that did not.<sup>23</sup>

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<sup>22</sup> Australian first-home buyers who bought a new house with a mortgage spend 31 per cent of their gross household income on housing, compared to 23 per cent for "upgrade" buyers. (ABS, 2007, Table 43)

<sup>23</sup> Note that this is not a claim that households buy additional cars *because* they live in or move to a growth area. It might be, for example, that the differences in Table 6 are accounted for by differences in the number and employment/education of adult children.



**Table 6.** Number of cars owned by OH family households

Percentage of family households	Cars per Household					Total
	1	2	3	≥ 4	Nil or not stated	
<b>Previous LGA of residence</b>						
Growth LGA	13%	68%	11%	6%	1%	100%
Not growth LGA	23%	59%	9%	6%	3%	100%
All previous places of residence	19%	63%	10%	6%	2%	100%

### 4.3.2. Journey to work

The Oliver Hume survey recorded only journey-to-work (JTW) information for one person in each household (the “primary income earner”, as self reported).

Almost half of all OH households reported a JTW distance of more than 20 km (see Table 7), and only 17 per cent travel less than 10 km. By way of comparison, the *mean* JTW distance driven by car in Melbourne is 16 km,<sup>24</sup> so the *median* distance should be less than this.

**Table 7.** Journey-to-work distance of primary income earners in OH households

LGA	Journey-to-work distance					Total
	< 5 km	6–10 km	11–20 km	> 20 km	Not stated	
Casey	5%	12%	31%	45%	7%	100%
Melton	2%	10%	30%	52%	6%	100%
Whittlesea	6%	17%	31%	38%	7%	100%
Wyndham	4%	13%	27%	51%	6%	100%
All four LGAs	4%	13%	29%	48%	6%	100%

Table 8 shows that the car is the dominant means of travel to work, but public transport still has a significant mode share, particularly in Wyndham. Mode share for OH households is broadly similar to that in growth LGAs overall, but quantitative comparisons with Census data are not possible because both the collection methodology and populations are different.<sup>25</sup> Moreover, since OH buyers are surveyed at the time of sale, before they move house, the OH survey captures respondents’ *anticipated* distance and mode of journey to work from the new housing estate.

It is worth observing, nonetheless, that, of the 662 OH households that reported public transport for JTW, 42 per cent used a car as well. The proportion is only 25 per cent among GA workers who used public transport (MSD: 14 per cent).<sup>26</sup>

<sup>24</sup> Australian Bureau of Statistics and Department of Transport, internal calculations

<sup>25</sup> Two of the most important differences are: 1. the OH Survey singles out “primary income earners” whereas the Census collects JTW information for all employed people; 2. the Census records the mode of travel on Census Day whereas the OH survey asks for usual travel, which makes comparison impossible because of the ~13 per cent of people who worked from home or did not go to work on Census Day.

<sup>26</sup> Another caveat: this assumes that OH respondents correctly interpreted the question on mode of journey to work as referring to *one* typical journey, so that someone who travels only by train on Mondays to Thursdays and only by car on Fridays ticks ‘train’ and not ‘car and train’.

**Table 8.** Journey-to-work mode of primary income earners in OH households

LGA	Mode of journey to work					Total
	Car only	Car and PT	PT only	Walking only	Other	
Casey	83%	6%	5%	1%	4%	100%
Melton	89%	3%	3%	0%	5%	100%
Whittlesea	87%	5%	4%	0%	4%	100%
Wyndham	76%	6%	12%	1%	4%	100%
All four LGAs	83%	5%	7%	1%	4%	100%

While direct comparison should not be made between the OH and Census figures (see footnote 25), a higher proportion of “park-and-ride” journeys to work among OH residents would be consistent with the hypothesis (supported both by anecdotal knowledge and by OH data on income and journey-to-work distance) that many OH residents have white-collar jobs in the inner city. Jobs in the inner city tend to be more highly paid, and inner Melbourne is the destination for the great majority of journeys to work that use both car and public transport.<sup>27</sup> The OH survey does not record the locations OH households’ workplaces, but this hypothesis could be verified (or disproven) by an analysis of 2006 or 2011 Census records for Collection Districts (or other small geographies) covering the OH housing estates.

#### 4.4. Factors influencing OH residents’ choice of location

OH households were asked to rate the ‘importance/desirability’ of a number of factors in their choice of estate. Three of these are examined in this section: the (stated) importance they place on proximity to public transport, to their old home, and to family and friends. The responses of households are summarised in Table 9.

**Table 9.** Stated importance/desirability of three factors in OH households’ choice of location

Percentage of all OH households	Stated importance <sup>28</sup>				Total
	Very important	Important	Not very important	Not stated	
<b>Factor: ‘Proximity to...’</b>					
Public transport	46%	43%	10%	1%	100%
Friends and relatives	40%	37%	22%	1%	100%
Current place of residence	38%	34%	28%	1%	100%

It can be seen that only a small proportion of households said that proximity to public transport was ‘not very important’, whereas responses to the other two questions were more evenly spread (but still with ‘not very important’ as the least popular response). Note that the OH survey did not ask households to compare the *relative* importance of different factors.

<sup>27</sup> Shin et al (2009)

<sup>28</sup> The survey provides only a crude measure of the importance of certain factors in OH households’ choice of estate. The possible responses to all ‘importance/desirability’ questions in the OH survey were ‘very important’, ‘important’, and ‘not very important’. A household may rate a factor ‘important’ even if the household has given it little consideration because ‘important’ is the middle (“donkey vote”) value. The survey also groups possibly distinct factors together, confuses ‘importance’ with ‘desirability’, does not ask recent immigrants and those without friends or relatives in Melbourne to skip the questions about proximity to former home proximity to friends and relatives, and does not allow for any factor to be *undesirable* (instead assuming that a household can be “at worst” indifferent to each factor). It is not unimaginable that a household might want to move far away from its old home, or that proximity to friends is wanted while proximity to relatives is not.

The following subsections take a look beneath the headline percentages in Table 9 and examine the relationship between households' responses and two indicators of their choice of location: the distance of the estate from public transport, and whether or not the estate is in the same LGA as the household's previous home.

#### 4.4.1. Moving to a different LGA

About two-thirds of OH households (and three quarters of those buying their first home) moved to a different LGA (or city, state, or country) when they moved to the OH estate.

There seems to be little correlation between the importance that OH households place on proximity to their old home and whether they moved to a different LGA. Indeed, first-home buyers who *did* move between LGAs were slightly more likely to say that proximity to their old home was 'very important'.

Another counter-intuitive result is that first-home buyers who moved LGA were more likely to say that proximity to friends and relatives was 'very important' than those who stayed in the same LGA (see Table 10). This result is not due to first-home buyers who have been renting houses far from family and friends moving "back" to be near parents: even among first-home buyers who were living with parents before moving to the OH estate (Table 11), those who moved LGA were more likely to say that proximity to friends and relatives was 'very important'.

These results suggest that the wish to be near friends and family and the wish to stay close to one's previous home are both relatively unimportant factors in OH households' choice of new home. But another possible reading of these counter-intuitive relationships is that they reflect the methodological issue of what 'proximity' means to different people, something which is revisited in subsection 4.4.2, which considers 'proximity to public transport'.<sup>29</sup> Or perhaps OH households that were moving to another LGA gave more active consideration to how far they would be from family and friends (perhaps the question for them was, 'do we stay in Melbourne?'), whereas many of the households staying within the same LGA had never even considered moving to the other side of Melbourne and had therefore not considered the distances from family and friends because proximity could be taken for granted. In short, perhaps 'distance to X' is a more important factor in decision-making for households that are considering a longer-distance move.

**Table 10.** Stated importance of proximity to friends and relatives, by LGA migration (first-home buyers)

Percentage of first-home buying OH households	Importance of proximity to friends and relatives				
<b>Previous LGA of residence</b>	Very important	Important	Not very important	Not stated	Total
Same as LGA of new home	34%	41%	25%	1%	100%
Different LGA to that of new home	45%	35%	19%	0%	100%
All locations	42%	37%	20%	1%	100%

**Table 11.** As Table 10, but for first-home buyers that were living with parents

<sup>29</sup> The context-dependence of the word 'proximity' is illustrated by the 125 OH households who lived overseas or in other Australian states at the time of purchase. Their responses to the question on importance of proximity to their current home were split in the same proportions as those of OH households that lived in Victoria.

Percentage of OH first-home buyers that were living with parents	Importance of proximity to friends and relatives				
Previous LGA of residence	Very important	Important	Not very important	Not stated	Total
Same as LGA of new home	30%	44%	24%	1%	100%
Different LGA to that of new home	38%	38%	23%	0%	100%
All locations	35%	41%	24%	1%	100%

#### 4.4.2. Distance to public transport and importance placed on proximity to public transport

Although the stated importance of proximity to public transport is, with high statistical significance, correlated with the distance of estates from public transport (as shown in Table 12) the correlation is not consistent across the three values of stated importance. Households that rated proximity to public transport as 'very important' were more likely to have chosen estates closer to public transport than those that rated it 'important', but the correlation is "the wrong way around" for the small proportion (10 per cent) of households that said proximity was 'not very important'. This unexpected result could be an artefact of the crude measure of distance from public transport; it could mean that OH households interpret 'proximity' very differently to Department of Transport (after all, a disproportionate number of journeys to work by OH households that use public transport also use a car); or again it could reflect psychological-methodological issues (such as "what you don't have, you miss the most").

**Table 12.** Distance of OH households' estates from public transport, by stated importance of proximity to public transport

Stated importance of proximity to public transport	Distance of estate from public transport <sup>30</sup>				Total
	PT in estate	≤ 400m	> 400m	Unknown <sup>31</sup>	
Very important	27%	54%	17%	2%	100%
Important	18%	50%	29%	4%	100%
Not very important	34%	40%	23%	4%	100%
Total	24%	51%	23%	3%	100%

**Table 13.** Stated importance of proximity to public transport, by mode of journey to work

Mode of journey to work <sup>32</sup>	Stated importance of proximity to public transport				Total
	Very important	Important	Not very important	Not stated	
Car only	45%	43%	11%	1%	100%
Car and public transport	53%	42%	5%	1%	100%
Public transport only	57%	38%	4%	1%	100%
Grand Total	46%	43%	10%	1%	100%

The importance that OH households place on proximity to public transport is correlated with mode of journey to work — in the intuitive direction, as shown in Table 13 — but **not**

<sup>30</sup> This is the shortest distance from the edge of the estate to a public transport stop. See Section 3.

<sup>31</sup> Some of the estate names in the OH survey could not be matched to the Department of Transport's GIS data.

<sup>32</sup> This is the journey-to-work mode of the "primary income earner" (see Section 4.3).

correlated with whether households have children, suggesting that public transport is no more important to OH households for children's travel than it is for adults' travel to work. This would be unexpected, given that public transport is the main mode of transport for 23 per cent of journeys to and from education, but only 10 per cent of journeys to and from work, made by households in Outer Suburban Melbourne.<sup>33</sup>

One possible explanation for the lack of correlation between households having children and the importance they place on proximity to public transport is that OH households with children do not find *proximity* to public transport essential because they are willing to drive both themselves and children to and from public transport. The lack of correlation cannot be explained by a predominance among OH families of children of primary-school age (who are much less likely to travel to and from school by public transport than older children),<sup>34</sup> because OH households with children at secondary school are still no more likely to rate proximity to public transport as 'very important' than OH households without children.

A willingness to use a car to reach public transport (in other words, to "park-and-ride" or "kiss-and-ride") would also be consistent with the finding (see Section 4.3) that a large fraction of OH workers who use public transport to travel to work also use a car for that journey, and with the work of Inbakaran and Shin (2010), who found that working couples with children in the growth LGAs Casey, Whittlesea, and Wyndham spend more dollars on chauffeuring than households of the same composition in inner Melbourne despite organising their travel more efficiently.

A related, if unsurprising, result is that OH couple households with one car are more likely to rate proximity to public transport as 'very important' than those with two cars. This supports the idea that households that (choose to) have fewer cars than adults look for easy-to-reach public transport to meet their travel needs.

The most noteworthy observation, however, about the importance that OH households place on proximity to public transport is that it has increased dramatically since 2004, when the OH survey began. As shown in Table 14, the percentage of households rating proximity to public transport as 'very important' increased from 28 per cent in 2004 to more than 50 per cent in the years 2007, 2008, and 2009. It is not yet clear if this trend is continuing or if it reversed after 2008, perhaps in line with changes in fuel prices. But the proportion of OH households that consider proximity to public transport 'not very important' has remained small since 2006.<sup>35</sup>

**Table 14.** Stated importance of proximity to public transport, by calendar year

Stated importance of proximity to public transport	Year						
	2004	2005	2006	2007	2008	2009	All years
Very Important	28%	34%	42%	51%	61%	51%	46%
Important	41%	42%	52%	44%	35%	43%	43%
Not Very Important	31%	24%	5%	5%	4%	4%	10%

<sup>33</sup> Summary results of the Victorian Integrated Survey of Travel and Activity 2007–08 (VISTA 2007), available from <http://www5.transport.vic.gov.au/vista/>

<sup>34</sup> In metropolitan Melbourne, only 6 per cent of primary-school children travel to and from school mainly by public transport, compared to 44 per cent of secondary-school children and 52 per cent of university/TAFE students. (VISTA 2007)

<sup>35</sup> In the first two months of 2010 (the most recent OH Survey data available, comprising 163 records), only 7 per cent of OH buyers said proximity to public transport was 'not very important', but the proportion rating it 'very important' fell to 42 per cent.

N/A	0%	0%	1%	0%	0%	1%	1%
Total	100%	100%	100%	100%	100%	100%	100%
<b>Average price of unleaded petrol</b> in metropolitan Melbourne (c / L) <sup>36</sup>	97.2	110.4	125.3	125.4	142.6	121.2	

## 5. Discussion and conclusion

This paper is a reminder that the urban-fringe areas of Melbourne are heterogeneous, with new housing estates forming pockets of socio-economic advantage. Households on these estates do not suffer from socio-transport disadvantage, but would be more affected by increases in fuel prices than inner-Melbourne households.

Households on new estates have distinctive demographics. They are predominantly couples and families, in keeping with growth LGAs generally but not Melbourne as a whole. The proportion of OH households that were first-home buyers has increased substantially over the last six years, from 36 per cent in 2004 to 59 per cent in 2009. But while most single and couple households were first-home buyers, most family households were not. The median income of OH households, whatever their composition, was higher than that of growth-area households (and Melbourne households) overall.

Their high incomes mean that OH households, though more reliant on car travel — as indicated by car ownership and long journeys to work, mostly by car — do not suffer “forced car ownership” as often defined in the literature.

It is clear, however, that households have made trade-offs in their choice of residential location. One of these is the level of public transport service, which is lower on the urban fringe than in inner Melbourne. Nonetheless, in a substantial proportion of new estate households (13 per cent), the reference person used public transport to travel to work. However, of those who used public transport, a much higher proportion used a car as well (42 per cent, whereas only about 14 per cent of employed Melburnians did), suggestive of extra effort to reach less accessible public transport. Since 2007 more than half of OH households have said that proximity to public transport was ‘very important’ to them, and OH households that previously did not live in growth LGAs had fewer cars than households that already lived in growth LGAs.

These results suggest that OH households feel that poorer public transport and greater distances from work are outweighed by the benefits of urban-fringe housing estates, and that there is strong, if latent, demand for public transport from these households.

While this is encouraging for transport policy-makers who seek to increase public transport's mode share in outer Melbourne, they should bear in mind that the ways in which they seek to change travel behaviour need to be informed by both people's attitudes and circumstances (such as their travel needs and finances). This research clearly shows that the *circumstances*, at least, of households on new housing estates are very different to those of the households elsewhere in the growth areas. Any strategy that did not recognise the heterogeneity of the urban fringe would be simplistic.

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<sup>36</sup> These are yearly averages calculated from the monthly average prices published by the Australian Automobile Association at <http://www.aaa.asn.au/issues/petrol.htm>.

In particular, the fact that many OH households were not first-home buyers shows that greenfield housing estates are not merely a choice of last resort for households desperate to enter the home-ownership market in a city of declining housing affordability. This clearly has implications for policy-makers who seek to influence the future shape of Melbourne, since urban form is the result of both urban planning and the urban property market.

### Broader context and future research

This paper has touched on the weighty question of the importance of different factors in a household's choice of home, and how this is entangled with choice of transport mode. Modelling such decision-making has long been, and continues to be, an active area of research<sup>37</sup> and one to which policy-makers should give attention. This paper makes no attempt to make any substantial contribution to this field — though it does highlight, at least in the case of urban-fringe estate households in Melbourne, how complicated the trade-offs are that households make, with the OH Survey suggesting unexpected relationships between stated and revealed preferences.

A key theme of this paper is the heterogeneity of Melbourne's growth areas: substantial differences in households' circumstances (such as demographics, finances and transport circumstances) over small distances. Transport-policy makers might benefit from further research into small-scale spatial variation in both households' circumstances and their attitudes to travel, and how these relate to travel behaviour.<sup>38</sup> In Australia, the five-yearly Census collects a wealth of data at fine spatial resolution, but data on travel<sup>39</sup> or attitudes to transport<sup>40</sup> are rarely available on fine spatial scales.

Relatively straightforward extensions to the research presented here include using 2011 Census data at a detailed geographical level to examine trends in car ownership and journey-to-work on new housing estates, or mining other databases on growth-area buyers to verify that patterns seen among Oliver Hume buyers are truly representative of new residents on growth-area estates.<sup>41</sup> Specifically, it would be interesting to examine households' expectations of present and future public transport in the growth areas, and how accurate they are. Other matters raised by the results in this paper include: whether households that are new to the growth areas buy additional cars after their move, if they correctly anticipated the need for extra cars or changes in travel patterns, and, if they do buy extra cars, whether they do so *because of* their new location.

New and further research to gain a deeper understanding of households' preferences in housing, location, and travel would help governments manage the balance between

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<sup>37</sup> Weisbrod et al. (1980) is an early example, and see the book *Residential Location Choice*, Pagliara et al (Eds), for a recent overview.

<sup>38</sup> Such knowledge might inform not only strategic policy development but also "on the ground" transport planning. Consider this hypothetical example. Of those who go to work by catching the bus and then the train, some (call them Segment A) prefer a very frequent but circuitous shuttle bus service to the train station, while others (Segment B) prefer a less frequent bus that runs more directly and quickly to the station. If residents of new housing estates were primarily Segment B, and those living elsewhere in the growth areas were primarily Segment A, then running different kinds of bus services on a local scale would increase passenger satisfaction.

<sup>39</sup> e.g. the Victorian Integrated Survey of Travel and Activity, <http://www5.transport.vic.gov.au/vista/>

<sup>40</sup> see e.g. Gaymer (2010)

<sup>41</sup> Sources of such data could include the Victorian Urban Development Authority or private-sector property developers such as Stockland.

population growth in Melbourne's established and urban-fringe areas, spatial variation in demography, and implications for transport.



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## Appendix

Map showing Melbourne's six growth local government areas (growth LGAs). This paper studies residents on new housing estates in Casey, Whittlesea, Melton and Wyndham (highlighted green).

