

**2001 Immigrant Home Ownership Patterns in
Canada's Census Metropolitan Areas: A Comparison with Non-immigrants**

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Abstract

Using data retrieved from the 2001 Census of Population Public Use Microdata File, Households and Housing File, this paper analyzes immigrant and non-immigrant home ownership patterns in 19 of Canada's Census Metropolitan Areas (CMAs). In addition to a descriptive analysis, logit models of the probability of home ownership are estimated. Our findings show that the home ownership patterns of immigrants and non-immigrants with respect to characteristics such as age, marital status, household size, and income, are similar, but differ with respect to characteristics like sex, education, industry and CMA. This paper also finds that immigrants with different source countries have different home ownership patterns.

I. Introduction

Home ownership has always been essential to immigrant life. Not only does a home provide a living place for immigrants to raise children, develop neighborhood relationships, etc., but also it plays an important role in immigrant social integration into a whole new country. This paper is devoted to examining the homeownership patterns of immigrants to Canada. Studies of immigrant home ownership pattern have been conducted by numerous academics. Relationships between home ownership and a number of demographic, socioeconomic and cultural characteristics have been uncovered. For example, Balakrishnan and Wu (1992) use the 1986 Canadian Census and find that year of immigration has a positive effect on home ownership. Murdie and Teixeira (2003) find that immigrant ethnic groups have significantly different home ownership patterns. Haan (2007) uses data from the 1981-2001 Canadian Censuses and finds that age is positively related to immigrant home ownership, and married couples with children are the most likely to own a home. Hiebert (2009) uses data from the Longitudinal Survey of Immigrants to Canada (LSIC) and finds that immigrant household size and income are positively related to home ownership.

These studies provide a general view of immigrant home ownership patterns. However I notice that the immigrant population has increased in recent decades and its composition is changing. Have immigrant home ownership patterns changed as well? Do different groups of immigrants behave in the same manner? These questions remain unanswered. Therefore, in this paper, using more up-to-date data from the 2001 Canadian Census, I attempt to find home ownership patterns for immigrants.¹ Moreover, I sort immigrants by their source countries and compare their home ownership behaviours with those of non-immigrants. Following previous studies, I choose variables that describe immigrants' demographic, socioeconomic characteristics, and construct logit models to test

¹ For some reason, the 2006 Census was not yet available when work on this paper began.

which factors influence the immigrant home ownership decision and by how much. In addition, a large proportion of the variation in home ownership remains unexplained in the previous studies, leading me to explore some other factors that may have an effect on immigrant home ownership. In this paper, I add a new factor -- industry of employment-- which is seldom discussed in previous studies, because it is widely recognized that immigrants' success in the labour market is important to home ownership patterns and immigrants' integration in society. Industry is another good indicator of immigrants' labour market activities besides income.

This paper is organized as follows. Section II reviews the previous studies on immigrant home ownership patterns and the causes of differences between immigrant and non-immigrant home ownership patterns. Section III explains how the data and variables were chosen and how the model is constructed to characterize immigrant home ownership patterns. Section IV analyzes the descriptive and empirical results. Section V concludes the paper.

II. Literature Review

As Engeland and Lewis (2005) point out, because it serves as a foundation for people's daily life, housing plays a fundamental role in the quality of life. People's social and economic welfare can be partially reflected in home ownership (Rosenbaum 1996). For immigrants, housing means a lot more than a living place; it is a good investment that helps newcomers to integrate into the mainstream society in a new country (Alba and Logan, According to Jansen and Lam (2004), landed immigrants in the classes of independent immigrants and business (entrepreneur and investor) immigrants are those who usually bring considerable wealth with them, or are skilled enough to earn income. Carter (2005) further argues that immigrants in these two classes have more potential to buy a new house than the

other classes' immigrants such as immigrants under the Caregiver program, family class immigrants and humanitarian class immigrants. Haan (2005, p. 5) declares that: "[housing] can therefore be broadly conceived as a salient indicator of an immigrant family's life chances in their destination country, reflecting their ability to meet the economic requirements."

With the majority of immigrants settling into big cities in Canada, the housing market, especially local housing markets in global cities such as Toronto and Vancouver, is greatly affected.² According to Canada Mortgage and Housing Corporation (CMHC, 2004, p. 2), "In 2001, 86.1% of immigrant households lived in one of Canada's 27 census metropolitan areas (CMAs), compared to 58.0% of non-immigrant households". It is also reported that although recent immigrant households earn less than comparable non-immigrant households, they tend to have a greater desire to own a home and spend more on purchasing a home (CMHC 2004). As Carter (2005) mentions, in recent years, global cities in Canada have experienced a boost both in demand and price in the housing market in spite of the aging population and slowing growth of household size, both which have negative effects on housing demand and housing prices. He also argues that the arrival of immigrants is partly responsible for the increase in housing demand and prices, and even for some other housing market and neighborhood changes, such as the development of 'monster' homes, new architectural designs, ethnic businesses and household growth patterns. Thus social and economic diversity are modified. He pays attention to poor immigrants and refugees as well, since not all immigrants arrive with wealth, and noticed that the less fortunate, though they tend to be less influential in the housing market compared to the rich, act as another important factor that influences urban housing markets and policy.

² According to Carter (2005, p. 266), "Global cities are defined as those cities where there is an accumulation of financial, economic, political and cultural headquarters of global importance."

A. History of immigrant home ownership in Canada

Previous studies focusing on immigrant home ownership in Canada highlight three questions: 1) what is the current immigrant home ownership situation? 2) How does immigrant home ownership change over time? 3) What causes home ownership differences between immigrants and non-immigrants? With respect to the first and second questions, studies carried out in different time periods have produced various results using all kinds of data and methodologies.

Canada is a land of immigrants and immigration has always played an important role in its history. As Grant and Sweetman (2004) describe, about 500 years ago French and British settlers first came to Canada, followed by immigrants from the USA, Great Britain, Germany, Greece, and Italy. Later - around the 1900s - the majority of immigrants came from European countries and the USA, while more recent immigrants are from Asia, Africa and Latin America. Approximately 1.4 million immigrants were admitted both in the 1960s and 1970s, compared to 1.3 million in the 1980s and 2.2 million from 1991 to 2000 (Statistics Canada, 2008). By the 2006 Census, Chui et al. (2007) announced, there were 6,186,950 foreign-born people in Canada, which means one in five of the total population. Chui et al. (2007, p5) also found that “1,110,000 recent immigrants came to Canada between January 1, 2001 and May 16, 2006 and these newcomers made up 17.9% of the total foreign-born population and 3.6% of Canada’s 31.2 million total population.”

By focusing on the overall trends revealed by previous studies of immigrant home ownership, we can trace a history of immigrant home ownership with the following features. First of all, the past few decades have witnessed huge and rapid growth in immigrant home ownership, but the rate of growth decelerates around 2001. In Haan’s (2005) study of immigrant home ownership from 1981 to 2001 in Montreal, Toronto and Vancouver, he uses data from the 1981 to 2001 Canadian Censuses and an Ordinary Least Squares (OLS) model,

instead of the commonly used logit models, for the estimation of immigrants' home ownership. Haan (2005) first constructs a linear model with explanatory variables for Census year and immigrant status and the dependent variable for home ownership. Then, he adds explanatory variables that may have an effect on immigrant home ownership to the original model one at a time. Consequently, the second model has three explanatory variables; the third model has four explanatory variables, and so on. Tracking changes across models, he tries to explain the changes in immigrant home ownership rates. Haan (2005) observes that in 1981, the home ownership rates of all working-age immigrant families in Montreal, Toronto, and Vancouver were 52%, 65%, and 70% respectively. In each city, immigrant families were doing better than the Canadian-born (46%, 55%, 58%); however, by 2001, immigrants in Montreal and Toronto had lost their advantage over the Canadian-born with home ownership rates of 42% and 61% compared to 54% and 64%. Haan (2005) also finds that the immigrant home ownership advantage has diminished among 25-54 year olds over the twenty-year period.

Haan (2007) compares immigrant home ownership rates to those of native-born Canadians in seven CMAs from 1971 to 2001 by estimating probit models.³ Using data from the 1971-2001 Canadian Census, he observes that in 1971, 31.9% of the immigrants who landed during the 1965-1969 period owned their homes while native-born households had a home ownership rate of 50.1%; but by 1981, when the immigrants who had landed between 1965 and 1969 were 10 years older, they had a home ownership rate of 71% as compared to 63% for native-born household. For immigrants who landed from 1985 to 1989, the home ownership rate is 38.5% in 1991, which is 16.5 percentage points less than that of the native-born. By 2001, immigrants who landed between 1985 and 1989 had a home ownership rate of 61.9%, which is closer to the home ownership rate of the native-born (68.4%). The author

³ The CMAs considered were Edmonton, Calgary, Montreal, Ottawa/Hull, Toronto, Vancouver, and Winnipeg.

concludes that although the home ownership rate of immigrants begins well behind that of the native-born, a vast growth in the immigrant home ownership rate has taken place.

More recently, Hiebert (2009) uses the LSIC to investigate newcomers' home ownership status in Canada during their first four years after arrival, starting in 2000-2001. Analyzing descriptive results, he finds that the overall home ownership percentage of newcomers increases dramatically from 18.2% to 51.7% in four years. In other words, more recent immigrants may be investing in housing more quickly than earlier immigration

Second, several studies have examined how immigrant home ownership rates vary with demographic and socioeconomic characteristics. Balakrishnan and Wu (1992) examine home ownership patterns among ethnic groups in nine cities in Canada using 1986 Census data and logit models.⁴ They construct explanatory variables that describe demographic, socioeconomic, ethnic, and immigration characteristics to analyze home ownership patterns. They find that immigrants who have resided in Canada longer are more likely to own a home and immigrants have a higher home ownership rate than the native born.

Murdie and Teixeira (2003) also discuss the probability of immigrant home focusing on housing adequacy, suitability and affordability.⁵ They use data from the 1996 Canadian Census. Five major findings are highlighted in their paper. First, they find that immigrant and non-immigrant groups have almost the same dwelling conditions and home ownership rates (both around 60%) in 1996. Secondly, low-income immigrant families tend to need more major housing repairs. Third, a high average number of persons per room is more common among immigrants than among non-immigrants, especially for immigrants from Vietnam, the Philippines, India, west Central Asia, and other south Asian countries. Fourth, immigrants are willing to spend more on rent than non-immigrants. Finally,

⁴ They are Toronto, Montreal, Vancouver, Ottawa-Hull, Winnipeg, Regina, Saskatoon, Calgary, and Edmonton.

⁵ Adequacy, suitability and affordability are denoted the three components of decent housing by CMHC (1999), where adequacy refers to the state of repair of the house repairing condition, suitability is defined as enough bedrooms for the household, and affordability is the cost of housing.

immigrants from the early post-Second World War period have the best quality housing and have the highest home ownership rate among all immigrant groups, while immigrants arriving between 1991 and 1996 have the lowest rates.

Haan (2007) uses data from 1981-2001 Canadian Census and finds that age is positively related to immigrant home ownership, and that married couples with children are the most likely to own a home. Hiebert (2009) uses LSIC data starting from 2000-2001 and asserts that business and other economic immigrants have the highest home ownership rates among all four admission classes.⁶ Hiebert is also interested in immigrant housing suitability and uses the degree of crowding as a measure of suitability.⁷ He found that 23.4% of newcomers lived in crowded housing during the first six months after landing. The proportion of crowded people during the first six months after landing is highest for refugee class immigrants at 39.9%, but this percentage drops to 30.4% after four years.

Third, over the past 35-40 years, the composition of recent immigrants has changed so substantially in Canada that the immigrant population is more racially diverse than in the past. With the changing weight of immigrant components—source country, the home ownership rate changes as well, leading to significant inequality of home ownership rates between immigrant ethnic groups. According to the 1996 Census, Italian immigrants rank first in home ownership rates (Murdie and Teixeira, 2003).

Myles and Hou (2003) examine the immigrant home ownership patterns of Blacks, Chinese and South Asians in Toronto using data from the 1996 Census of Canada. They construct logit models similar to those of Balakrishnan and Wu (1992). They find that the “conventional spatial assimilation theory” applies to all three groups. This theory claims that minorities will try to move to a better neighbourhood after their social status rises. Myles and Hou (2003) also determines that White and Chinese families have higher median

⁶ The four admission classes are Family, Skilled worker, Business and other economic, and Refugee.

⁷ “Crowding is defined as more than one person per room in a dwelling excluding bathrooms, hallways and rooms used for business purposes” (Hiebert, 2009, p. 278).

neighbourhood income than South Asian and Black families, and Black and White families have an advantage in terms of speaking official languages since the home language of most Blacks and Whites is English or French. Overall, the Chinese have the highest home ownership rate (74.5%) and Blacks have the lowest home ownership rate (29.1%). Using the Gini, a measure of residential segregation, the authors rank the Chinese, South Asians and Blacks the first, second and third in terms of their degree of segregation from Whites.⁸

From an ethnic-cultural perspective, Haan (2007), using data from the 1971-2001 Canadian Census, indicates that for 1975-1979 immigrants, Chinese and Whites are the exceptions in that they have high ratios of home ownership immediately after landing compared to other immigrant ethnic groups. In 1991, four ethnic sub-groups (Chinese, Filipinos, South Asians and Whites) landing between 1975 and 1979 had a higher home ownership rate than the native-born. Among 1985-1989 immigrants, the Chinese turn out to be the only group that surpasses the home ownership rate of the native-born by both 1991 and 2001.

Hiebert (2009) also observes huge discrepancies among different cultural groups: southeast Asians and Whites have the highest home ownership rates (24.2% and 21.9%) in the first six months after landing while Arabs and Blacks have the lowest ones (5.4% and 11.4%). Further investigation revealed that after four years, Filipinos and south Asians are the groups with the highest home ownership rates (58.7% and 58.6%), while Arabs and Blacks remain at the bottom (23.4% and 35.9%), though both groups experience considerable growth in home ownership rates after four years as compared to the first six months. Interestingly, west Asians are the most likely to spend 30% of their income or more on their housing, both during their first six months in Canada and after four years of residence. Whites are the least likely to spend 30% or more of their income on housing after four years of residence, while

⁸ Unfortunately Myles and Hou do not explain how the spatial Gini index is constructed. Dawkins (2004, p. 833) indicates that "the spatial Gini index of segregation can be used to quantify the degree of overall segregation that is due to racial clustering among adjacent neighborhoods."

south Asians are the least likely to spend 30% or more of their income on housing during their first six months in Canada.

Fourth, the immigrant home ownership rate differs across cities/areas. Among all the cities of Canada, Toronto attracts the most interest due to its large proportion of immigrants and diverse composition. Therefore, many researchers choose to investigate immigrant home ownership in Toronto. For example, Ray's (1994) descriptive analysis reveals that postwar immigration policy diversified the immigrant composition of Toronto and thus the geographic distribution of housing changed, using data from the 1986 Canadian Census. Ray (1994) takes Italian and Afro-Caribbean groups as examples: by 1986, 39.6% of Italian immigrants preferred to live in North York as compared to 25.8% in the city of Toronto, whereas "prewar Italian immigrants created 'little Italies' in the old, inner city neighborhoods throughout North America" (Ray, 1994, p262). Murdie and Teixeira (2003) observe that, in the past century, a changed social landscape in Toronto has resulted from the segregated resettlement of immigrants.

B. Differences between immigrants and non-immigrants

At least five possible explanations for differences in home ownership rates between immigrants and non-immigrants in Canada have been proposed in the literature. The principal factors highlighted by these studies are discussed in this subsection. The first factor is differences in the demographic structure (age, marital status, household composition, etc.) of the immigrant and native-born populations. Immigrant age and education are positive factors that tend to increase home ownership rates. The older the immigrant or the longer the immigrant stays, and the higher education level attained, the more likely it is that he/she will purchase a home (Balakrishnan and Wu 1992, Haan 2007, Carter 2005). Married couples with children are the most likely to purchase a home, while single people are the least likely.

The fact that immigrant families tend to be large has helped to offset some of the decline in immigrant home ownership that has been observed in recent years (Haan 2005). Most newcomers definitely experience improvements in their housing circumstances and are more anxious to own a home than the Canadian-born, given the same budget (Hiebert 2009). Hiebert (2009) observes that on average, every immigrant household has 3.6 persons, and household size and composition have positive effects on the housing demand of immigrants (except refugees). Almost half of the LSIC respondents were married couples with children, and this share further increases to 61.3% four years after landing, whereas the percentage of one-person households falls from 8.8% at the beginning to 6.4% after four years.

The second factor is experience in the labour market, which is considered a determinant of home ownership especially for skilled workers. Hiebert (2009) discovers that as income and employment rates rose quickly over the 2000-2005 survey period, higher home ownership rates appear contemporaneously. The average family employment earnings of respondents to the survey jumped from \$15,880 six months after landing to \$48,979 four years after landing. All classes of immigrants experience an increase in their family income over the survey period. However, a large discrepancy still exists between admission classes: 51.3% of skilled workers are employed in the first six months after landing, while only 22.1% of refugees and 28.7% of the business/other economic immigrants get jobs within the same time. After four years, the employment rate more than doubles to 56.3% and 61.9% for refugees and business/other economic immigrants, although skilled workers remain in first place with an employment rate of 75.9%. Similarly, Haan (2007) found that the decline in immigrant employment in 2001 led to a decrease in immigrant home ownership. Even in other housing markets outside Canada, success in the labour market has been found to be the key to immigrant home ownership. Painter et al. (2001) verify the importance of the effect of “endowment difference (income, education, and immigrant status)” on the home ownership

gap between Latinos and whites in the Los Angeles metropolitan area.

The third factor that contributes to differences in home ownership rates between immigrants and non-immigrants is race and cultural dissimilarity. Disparities in socioeconomic and cultural characteristics among immigrant groups are emphasized by Ray (1994). Balakrishnan and Wu (1992), who also support the idea that home ownership is essential to the development of “social identity and financial and psychological security,” found an important effect of ethnic group size leading to diverse home ownership patterns across ethnic groups. They also suggest the possibility of the existence of discrimination in the Canadian housing market. Darden and Kamel (2000) examine the home ownership rates of black Canadian citizens in the Toronto CMA using data from the 1996 Census.

Haan (2007) points to skin color difference as one of the major reasons for the decrease in immigrant home ownership rates observed over time. He further classifies three patterns through which immigrants with different skin colors complete their local residential integration: 1) straight-line assimilation into the mainstream society which refers to “a gradual progression toward the home ownership rates of the native-born” (Haan, 2007, p438); 2) an underclass assimilation which refers to lower home ownership rates over time, and 3) ethnic-community-supported assimilation which decreases the time of adjustment for immigrants. Most European groups prefer the first pattern and converge to the native-born rapidly; African-Americans in the United States generally follow the second pattern, and the Chinese and some South Asian groups are more willing to adopt the third pattern.

The fourth factor is different CMAs’ housing markets, which are described as a less important factor by Haan (2005). Immigrant home ownership rates fluctuate in different CMAs due to diversified local housing market characteristics such as housing age, cost, quality, and attitudes toward ownership. Haan (2005) find that there is some evidence that the choice of settlement area leads to changes in immigrants’ home ownership rates over time;

and the fact that immigrants are widely distributed across CMAs would probably prevent them from lowering the home ownership rate due to the peculiarity of each housing market.

The fifth factor is changes in immigration flows. Haan (2005) argues that since immigrants usually experience initial difficulties in inhabiting a new country, an increase in immigration leads to a larger proportion of newcomers and thus decreases the home ownership rate of immigrants as a whole. For example, in 2001, 36.5% of immigrants in Canada's three CMAs had been in Canada for ten years or less. This figure is larger than those in 1991 and 1981. However, the home ownership rate of immigrants in Canada's three CMAs in 2001 (57.9%) is lower than those in 1991 and 1981 (61.4% and 62.9% respectively). Therefore, an increase in immigration flows may partly explain the decrease in immigrant home ownership rate in 2001.

In sum, reviewing previous studies, I find that the home ownership rates of immigrants in Canada have greatly increased in the past few decades, but the rate of growth slows down around 2001. Some demographic and socioeconomic characteristics of immigrant home ownership in Canada have been revealed. For example, age and years of immigration are generally positively related to home ownership; married couples with children are the most likely to own a home; education and income have positive effects on home ownership. Also, I have learned that immigrant ethnic groups vary widely in home ownership behaviors and immigrant home ownership rates differ across CMAs.

Moreover, some explanations of home ownership differences between immigrants and non-immigrants are provided by previous studies. The reasons include differences in the demographic structures of immigrants and non-immigrants, labour market experience, cultural dissimilarity, different housing markets, and changes in immigration flows.

However, there are still a lot of phenomena that remain unexplained (Haan (2005) confirms that almost 67% of the 1981-2001 immigrant home ownership decline remains

unexplained. This raises the question of what other factors drive immigrants' home ownership decisions due to the potentially important effect of immigrant home ownership on housing markets. What I will do in the next section is use more up-to-date data to construct explanatory variables and logit models to estimate how those factors affect immigrant home ownership, and I will add a new factor -- industry of employment -- to test whether it has an effect on immigrant home ownership decisions.

III. Data and Method

In many previous studies, the logit model,

$$P_i = \frac{e^{x_i'\beta}}{1 + e^{x_i'\beta}}$$

is widely used (Greene, 2008). In the equation, P_i is the conditional probability of a positive response for a household with characteristic x_i , and the set of parameter β reflects the impact of a change in x_i on the probability (Li, 1977). A set of factors, such as age, marital status, and education, will be selected as independent variables to be included in the vector x to explain the home ownership outcome. Although some other types of economic models such as linear regression models and probit models have been used for estimation in some previous studies, in this paper, I choose a logit model because it is more appropriate to deal with the dichotomous nature of the dependent variable as compared to a linear regression models. As for the probit model, it produces similar results to logit models, especially when the sample size is large. Since logit models have been widely used to estimate home ownership in a lot of previous studies, I choose logit models for this paper.

The estimated logit models are used to test the following hypotheses, most of which are drawn from the review of previous literature, all *ceteris paribus*:

- 1) Age and years since immigration to Canada are positively related to immigrant home ownership.

- 2) Male immigrants are more likely to own a home than female immigrants.
- 3) Family size is positively related to immigrant home ownership.
- 4) Married couples are the most likely to purchase a home.
- 5) The higher the education level, the higher probability of home ownership for immigrants.
- 6) Immigrant home ownership is positively related to income.
- 7) Industry of employment is important to home ownership, and certain industries have higher rates of owning a home.
- 8) Big cities are more attractive to immigrants.
- 9) Home ownership differences exist between different immigrant source country groups.

As previous studies leave a large proportion of what affects the immigrant home ownership unexplained, I tried to find some other factor that has an important impact on immigrant home ownership that was not included in previous studies. Here, I add a new factor – Industry of employment -- because immigrants' experience in the labour market is widely accepted as an important factor affecting the immigrant home ownership rate and industry of employment is another indicator of immigrants' labour market activities other than income. For this reason I include hypothesis 7 in the list. Hypotheses 1-8 will be tested by estimating logit models that include the relevant characteristics, and comparisons will be carried out between immigrants and non-immigrants. To test hypothesis 9, I will sort immigrants by their source countries and construct logit models for each source country group. Then I will compare the results among immigrant source country groups and non-immigrants. In the next subsections, the sample will be described, and the choice of independent and dependent variables for the logit models will be discussed.

A. Data

The sample data were retrieved from the 2001 Canadian Census of Population Public Use Microdata File (PUMF) on Households and Housing. The file contains 2.7% of the population enumerated in the census, about 310,000 observations, and provides demographic and socioeconomic information on households (Statistics Canada, 2008). Since the 2006 Census PUMF was not released until the middle of March 2010, it could not be used for this paper.

To better serve our research objectives, the sample was modified according to the following guidelines. First, since the 2001 Census includes all private households consisting of Canadian citizens, landed immigrants and non-permanent residents living in a private dwelling, the sample was limited to a combination of immigrants and non-immigrants only, i.e., non-permanent residents are excluded.⁹ Second, the data are restricted to respondents from the following 19 CMAs: Halifax, Quebec, Montreal, Sherbrooke and Trois-Rivieres, Ottawa-Hull, Oshawa, Toronto, Hamilton, St. Catharines-Niagara, Kitchener, London, Windsor, Sudbury and Thunder Bay, Winnipeg, Regina and Saskatoon, Calgary, Edmonton, Vancouver, and Victoria.¹⁰ Because most immigrants who landed between 1996 and 2006 lived in a metropolitan area (Chui et al. 2007), individuals living outside CMAs are excluded. This is also the reason why previous studies chose immigrants in CMAs for the investigation of immigrant home ownership patterns (Haan, 2007; Carter, 2005). Third, all observations with missing data for at least one variable are excluded. After the imposition of these restrictions, there are 190,908 observations left for analysis. In the next section, an immigrant home ownership model and the construction of new explanatory variables using the retrieved Census variables will be discussed.

⁹ According to Statistics Canada (2003, p. 22), "the non-immigrant population are Canadian citizens by birth," and "the non-permanent resident population are people from another country who have an employment authorization, a student authorization, or a Minister's permit, or who were refugee claimants at the time of the census, and family members living here with them."

¹⁰ "A CMA is formed by one or more adjacent municipalities centered on a large urban area (known as the urban core) and by at least 100,000 populations." (Statistics Canada, 2008)

B. Model and Variables

The primary household maintainer rather than the spouse or common-law partner is selected as the representative of the household for the purpose of defining demographic and socioeconomic information such as age, sex, marital status, place of birth, education, immigrant status, and industry of employment.¹¹ Only household maintainers older than 15 years of age are included in the analysis. To investigate home ownership patterns, I have to check whether the primary household maintainer owns or does not own a home and further explore what and how various factors affect home ownership. Therefore, the dependent variable should be a dummy variable describing whether or not the primary household maintainer owns a home. To accomplish this, first we retrieve the numeric variable TENURH from the 2001 Census, whose value is 1 if the household owns the dwelling with or without a mortgage, and 2 if the household rents the dwelling or whether the dwelling is Band Housing.¹² Second, we construct a new dichotomous variable called TENURH1 as the dependent variable, whose value is 1 if the household owns the dwelling, and 0 if not.

Small changes in many factors can affect immigrant home ownership patterns greatly. As was demonstrated in section II, in the literature there is broad agreement that three categories of variables are the key to understanding home ownership: demographic, socioeconomic and source country variables. The model of immigrant home ownership here can thus be built within the above framework. The included characteristics comprise age, sex, marital status, education level, household size and income level, immigrant status, year of immigration (not applicable to non-immigrants), industry of employment, city of residence (CMAs: a set of dummy variables for the different cities), and source country of the primary

¹¹ "Household maintainers refer to the persons who pay the rent or mortgage, or the taxes, or the electricity bills, and so on, for the dwelling. If no person in the household is responsible for such payments, Person 1 is the only household maintainer." (Statistics Canada, 2008)

¹² "Band Housing on an Indian reserve or settlement" (Statistics Canada, 2008)

household maintainer. The specific variables included in the model are discussed in detail in the remainder of this section.

First, we choose the age of the primary household maintainer as one of the household demographic characteristics. The numeric variable HMAGE is retrieved from the 2001 Census. Its values range from 1 to 8 referring to the age groups 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-79, and 80 years of age and over respectively. Then, I construct the dummy variables HMAGE2, HMAGE3, HMAGE4, HMAGE5, and HMAGE6 to represent the age groups 25-34, 35-44, 45-54, 55-64, and over 65 years old respectively. I combine the 65-74, 75-79, and 80 years of age or over because 65 is a common retirement age, and people over 65 years old are less likely to consider purchasing a home (Balakrishnan and Wu, 1992). These dummy variables are coded 1 if the primary household maintainer is in the age group, and 0 if not. As discussed above, age is expected to be positively correlated with immigrant home ownership.

Second, the numeric variable HMSEX is retrieved from the 2001 Census, denoting the sex of the primary household maintainer. Its value is 1 or 2 depending on whether the primary household maintainer is male or female. Then, I construct a dichotomous variable -- HMSEX1 -- to indicate whether the primary household maintainer is a man or not. The variable is coded 1 if male, 0 if female. Male immigrants are expected to be more likely to own a home than female immigrants.

Third, HMMARST, representing the legal marital status of primary maintainer, is retrieved. Its values range from 1 to 5 denoting divorced, legally married (and not separated), separated (but still legally married), never married (single) and widowed. Then, I construct a dummy variable HMMARST1 to refer to a legally married (and not separated) primary household maintainer and a dummy variable HMMARST2 to refer to a primary household maintainer with other marital status (including divorced, widowed, and separated but still

legally married). The dummy variables are coded 1 if the primary maintainer is in the status group, and coded 0 if not. My hypothesis is that married couples are the most likely to purchase a home.

Fourth, the numeric variable HHSIZE is retrieved to represent the number of persons in the household. Its value ranges from 1 to 8, denoting household sizes of one person, two persons, three persons, four persons, five persons, six persons, seven persons and eight or more persons respectively. Then I construct the following dummy variables: HHSIZE2, HHSIZE3, HHSIZE4, HHSIZE5 for households with two, three, four, or five or more persons respectively. I include households with six persons, seven persons and 8 or more persons in the five or more persons group because the frequencies of these three groups are fairly low - 2.2%, 0.5% and 0.4% respectively. These dummy variables are coded 1 if the household size belongs to the group, 0 if not. Household size is expected to be positively correlated with immigrant home ownership.

Fifth, I choose the highest level of schooling attained to represent the education level of the primary maintainer. The highest level of education is widely used in analyzing home ownership (Balakrishnan and Wu, 1992; Haan 2007, Carter 2005), and it best describes the education level of economic immigrants. The corresponding variable in the 2001 Census is HMLHLOS. Its value ranges from 1 to 8, representing the following eight levels of schooling: Less than Grade 9, Grades 9 to 13 without high school graduation certificate, Grades 9 to 13 with high school graduation certificate, Trades certificate or diploma, College without certificate or diploma, College with certificate or diploma, University without bachelor's degree or higher, University with bachelor's degree or higher. Then I construct four dummy variables: HMLHLOS0 identifies individuals whose highest level of schooling is less than Grade 13 without a high school graduation certificate; HMLHLOS1 identifies individuals whose highest level of schooling is High school diploma or equivalent (including Grades 9-

13 with high school graduation certificate and Trades certificate or diploma); HMLHOS2 represents a College education (with or without certificate or diploma); and HMLHOS3 represents a University education (with or without a bachelor's degree). These dummy variables are coded 1 if the primary household maintainer is in the group and 0 if not. As my hypothesis indicates, immigrants with a higher education level are expected to have a higher probability of home ownership.

Sixth, I choose total household income to measure the household income level since it contains "total money income received by all individuals 15 years of age and over in the household" (Statistics Canada, 2008). The corresponding numeric variable is TOTINCH. I construct six dummy variables: TOTINCH1 represents the income level of \$20,000-\$29,999; TOTINCH2 represents the income level of \$30,000-\$39,999; TOTINCH3 represents the income level of \$40,000-\$49,999; TOTINCH4 represents the income level of \$50,000-\$59,999; TOTINCH5 represents to the income level of \$60,000-\$69,999; and TOTINCH6 represents an income level of more than \$70,000. These variables are coded 1 if the household is in the income group and 0 if not. Income is expected to be positively correlated with home ownership.

Seventh, the immigrant status of the primary maintainer is chosen to describe whether the primary maintainer is an immigrant or not. The corresponding variable in the 2001 Census is HMIMMST, whose value is 1 for non-immigrants and 2 for immigrants. One dichotomous variable - IMMST1 - is constructed. It is coded 1 if the primary household maintainer is an immigrant and 0 if not.

Eighth, birthplace of the primary household maintainer, instead of ethnic origin of the primary household maintainer, is chosen as an indicator of the person's source country. In the 2001 Census of Population PUMF: Household and Housing File, ethnic origin is divided into only five sub-groups: British Isles, French, Canadian, Aboriginal, and other. This

categorization focuses more on European culture and does not describe the current composition of Canadian immigrants, of whom a large proportion is Asian. By way of contrast, for birthplace there are four sub-groups reflecting a greater range of source United States, Europe, Asia, and other. Since neither of the two variables perfectly reflects cultural root status, birthplace is chosen because it better reflects diversity. The corresponding variable in the 2001 Census is HMPOB. Its value ranges from 1 to 6 representing the following six birthplaces respectively: Born in Canada in province or territory of residence; Born in Canada outside province or territory of residence; Born outside Canada, United States; Born outside Canada, Europe; Born outside Canada, Asia; and Born outside Canada, Other countries and regions. Then, I construct five dummy variables: HMPOB2 represents born in Canada (including in or outside province or territory of residence); HMPOB3 represents born in the United States; HMPOB4 represents born in Europe; HMPOB5 represents born in Asia; and HMPOB6 represents born in other countries and regions. These dummy variables are coded 1 if the primary household maintainer is in the particular source country group, 0 if not. I expect that home ownership disparities exist between different source country groups.

Ninth, I retrieve the numeric variable HMIMMIG, representing the year of immigration of the primary household maintainer. Its value ranges from 1 to 6, referring to the following six periods respectively: Before 1961, 1961-1970, 1971-1980, 1981-1990, 1991-1995, and 1996-2001. Using HMIMMIG, I construct five dummy variables: HMIMMIG2, which denotes the period 1961-1970; HMIMMIG3, which denotes the period 1971-1980; HMIMMIG4, which denotes the period 1981-1990; HMIMMIG5, which denotes the period 1991-1995; and HMIMMIG6, which denotes the period 1996-2001. These variables are coded 1 if the primary household maintainer immigrated in the period, 0 if not. Years since immigration to Canada are expected to be positively correlated with home

ownership.

Tenth, based on the variable describing industry – HMNAICS -- I construct 19 dummy variables to find out whether industry of employment has an important effect on home ownership. Dummy variables are created for all industries except public administration. They are called HMNAIC1-HMNAIC19.¹³ These dummy variables are coded 1 if the primary household maintainer works in the industry, 0 if not. Industry is expected to have an important effect on home ownership, and certain industries may have higher home ownership rates.

Eleventh, for the reason discussed in the Data section, I choose the variable indicating the CMA of residence. The variable CMAH retrieved from the 2001 Census identifies 19 CMAs. The variables CMAH1-CMAH18 were created.¹⁴ These variables are coded 1 if the primary household maintainer is living in the area and 0 if not. The nineteenth CMA is Victoria.

For convenience, all the variables included in the models are listed in Table 1. In the next section, immigrant home ownership characteristics will be compared to those of non-immigrants, and the implications of the logit estimation results will be explored.

IV. Findings

This section is divided into two parts. In part A, the home ownership rates of immigrants and non-immigrants with different characteristics will be compared without holding other characteristics constant. In part B, two comparisons will be carried out based on

¹³ HMNAIC1-HMNAIC19 refer to the following industries respectively: Agriculture, forestry, fishing and hunting; Mining and oil and gas extraction; Utilities; Construction; Manufacturing; Wholesale trade; Retail trade; Transportation and warehousing; Information and cultural industries; Finance and insurance; Real estate and rental and leasing; Professional scientific and technical services; Management of companies and enterprises; Administrative and support, waste management and remediation; Educational services; Health care and social assistance; Arts, entertainment and recreation; Accommodation and food services; and Other services.

¹⁴ CMAH1-CMAH18 represent the following CMAs respectively: Halifax, Quebec, Montreal, Sherbrooke and Trois-Rivieres, Ottawa-Hull, Oshawa, Toronto, Hamilton, St. Catharines-Niagara, Kitchener, London, Windsor, Sudbury and Thunder Bay, Winnipeg, Regina and Saskatoon, Calgary, Edmonton, and Vancouver.

logit model estimation results. In this section the first comparison is between immigrants and non-immigrants. The other comparison is the between different immigrant source country groups and non-immigrants.

A. Univariate descriptive analysis

According to the 2001 Canadian Census, the immigrant home ownership rate turns out to be almost the same as that of non-immigrants (66.0% and 66.1% respectively), and Table 2 shows that in the sample selected for this analysis, immigrants do follow similar home ownership patterns as their native-born counterparts, especially with respect to age, marital status and income.¹⁵ However, disparities, some enormous, between immigrants and non-immigrants are also apparent in most demographic, socioeconomic and source country groups.

Generally, aging is associated with rising home ownership rates for both immigrants and non-immigrants, despite an approximately 6 percentage point drop among those over 65 years old. This distinct drop may be attributable to the adult's retirement and children's departure from the family home (Murdie and Teixeira, 2003). The immigrant home ownership rate is lower than that of non-immigrants in the 25-34 and 35-44 age groups. The biggest gap (12 percentage points) is observed in the 35-44 group. The reason why immigrants have fairly low home ownership rates during their younger years might be the adjustment period needed for immigrants, most of whom arrive in Canada in their 30s or 40s, especially skilled worker class and business class immigrants. For many immigrants, it takes five years after landing to overcome language and cultural differences, get accustomed to the living and working environment, and accumulate wealth for housing (Hiebert, 2009; Haan, 2005; CMHC, 2004). Accordingly, among those 45-54 years old, there is a jump in the

¹⁵ The values 66.0% and 66.1% were retrieved using the ODESI tabulation function and do not correspond to the sample used for estimation.

immigrant home ownership rate to 71.2% (which is just as high as that of non-immigrants). The immigrant home ownership rate finally surpasses that of non-immigrants by 7 percentage points for the 55-64 age group. Despite a decline of 6.4 percentage points in the group aged over 65, immigrants still have a higher home ownership rate (71.2%) than non-immigrants (63.4%). However, it is hard to explain the interesting phenomenon that 15-24 year old immigrants have a higher homeownership rate than their Canadian-born counterparts (18.9% compared to 12.4%), since few studies are interested in this age range and researchers claim that people under 25 are less likely to consider purchasing a home by themselves (Balakrishnan and Wu, 1992; Skaburskis, 1996).

Male immigrants have a slightly lower home-ownership rate than male non-immigrants (68.5% and 68.8% respectively), while female immigrants have a higher home ownership rate than female non-immigrants (52.9% and 49.4% respectively). In the Canadian population as a whole, males have a much higher home ownership rate than females. Since a wage gap between men and women, which indicates that men earn more than women if both were full-time, full-year employees, exists in the labour market (Statistics Canada, 2008), it is reasonable for men to take the lead in owning a home as long as they earn more than women.

Among the marital status groups, legally married couples are the most likely to own a home, although immigrants lag behind non-immigrants by 10 percentage points (74.1% versus 84.5%). Single individuals have the lowest home ownership rates for both immigrants and non-immigrants, but the difference between them is not large (0.3%). Married couples also had higher home ownership rates than single persons in 1971-2001 according to Haan (2007), who investigates immigrants in seven Canadian CMAs using the 1971-2001 Census.

For immigrants, a larger household size is associated with a higher home ownership rate. Similarly, non-immigrant home ownership rates are larger for larger households although a little decline is observed in the "5 or more persons" group. Compared to non-

immigrants, the immigrant home ownership rate is a bit higher when the household size is one person or two persons (roughly 4 percentage points), yet a lot lower (around 7 percentage points) if there are three or more persons in the household. Therefore, it seems that immigrants with smaller families may be more willing to own a home than non-immigrants; but if the family size gets bigger, their willingness to buy appears to be lower than that of non-immigrants. This hypothesis needs further confirmation through the estimation of logit models.

Education level is expected to be positively related to home ownership. However, in Table 2 neither immigrants nor non-immigrants perfectly follow this rule. Among immigrants, the college-educated (with or without a college diploma) have the highest home ownership rate (65.4%), and the university-educated (with or without Bachelor's degree) have the lowest rate (60.7%), even lower than those below the Grade 13 level (65.2%). For non-immigrants, the university-educated have the highest home ownership rate (66.1%) as expected, but the home ownership rate at the college level is lower than that at the high school level by almost 2 percentage points.

Income exhibits a strongly positive correlation with home ownership. As income increases we observe a straightforward increase in home ownership rates both for immigrants and non-immigrants. Moreover, within the same income level, immigrants have a higher home ownership rate, which suggests, to some extent, that immigrants are willing to spend more on purchasing a home than the Canadian-born (CMHC, 2004).

Since there are few immigrants born in Canada, and few non-immigrants born outside Canada, it is more interesting to focus on the homeownership comparison between immigrants born outside Canada and non-immigrants born in Canada.¹⁶ Obviously, immigrants born in the United States and Europe have higher homeownership rates (64.9%

¹⁶According to Statistics Canada (2003, p. 21-22), "most immigrants are born outside Canada, but a small number were born in Canada", and "most [non-immigrants] were born in Canada, a small number of them were born outside Canada to Canadian parents."

and 72.9% respectively) than non-immigrants; Asian immigrants show a relatively low but close homeownership rate (60.4% versus 61.0%), and immigrants from other regions have a much lower (45.7% versus 61.0%) homeownership rate compared to non-immigrants. Therefore, differences in homeownership rates related to source countries appear to be very large when other factors are not held constant.

The relationship between immigrant home ownership rates and year of immigration is highly consistent with that between home ownership and age. It shows that home ownership rates are higher among immigrants who have been in Canada longer. It also shows that the biggest difference in home ownership rates is between those who have been in Canada no more than 5 years and those who have spent 6-10 years in Canada (approximately 20 percentage points higher in the 1991-1995 group than in the 1996-2001 group). The home ownership rate then increases steadily with years since immigration for those who have been in Canada for more than ten years. For immigrants who landed 40 years ago, i.e., landed before 1961, the home ownership rate is 79.2%, much higher than that of the 55-64 year-old Canadian-born group who would be comparable to these immigrants if one supposed that those immigrants landed in their twenties.

The relationship between industry and home ownership seems to be quite similar for immigrants and non-immigrants. Table 3 shows that when an industry has a higher rate of home ownership for immigrants, the same is the case for non-immigrants. However, within the same industry, some differences between immigrants and non-immigrants are great. For example, there is a 24.5 percentage point gap in home ownership rates between immigrants and non-immigrants employed in the Accommodation and food services industry (55.6% versus 31.1%). Also, in the Construction industry and the Arts, entertainment and recreation industry, the immigrant home ownership rates are 7 and 9 percentage points respectively higher than those of non-immigrants. On the other hand, there are industries exhibiting

almost the same homeownership rates for immigrants and non-immigrants, like Educational services and Public administration. Seven other industries -- Mining and oil and gas extraction, Utilities, Retail trade, Real estate and rental and leasing, Administrative and support, waste management and remediation, Health care and social assistance, and Other services -- show a higher home ownership rate for immigrants. Another eight industries including Agriculture, forestry, fishing and hunting; Manufacturing; Transportation and warehousing; Wholesale trade; Information and cultural industries; Finance and insurance; Professional, scientific and technical services; and Management of companies and enterprises display a higher homeownership rate for non-immigrants. These differences suggest that further exploration of the relationship between home ownership and industry of employment is warranted.

Table 4 compares the home ownership rates of immigrants and non-immigrants in the nineteen CMAs included in the sample. First, CMAs in Quebec tend to have lower homeownership rates for immigrants. Taking Quebec, Montreal, and Sherbrooke and Trois-Rivieres as examples, we find that the homeownership rates of immigrants are lower than those of non-immigrants, and the differences are large. More immigrants of African origin landing in Quebec might well explain this phenomenon, given Darden and Kamel's (2000) study that found blacks to be at a strong disadvantage in the housing market. Second, the home ownership rates contradict the view that bigger cities have higher homeownership rates. For example, global cities like Toronto and Vancouver rank in the lower half of the 19 CMAs in terms of homeownership rates. Carter's (2005) argument that larger cities have higher housing prices may partly explain this result. On the contrary, higher homeownership rates appear in relatively small CMAs such as Oshawa, St. Catharines-Niagara, and the Sudbury and Thunder Bay area. Third, immigrants appear to have some advantage in homeownership rates in most CMAs. Over half of the CMAs - actually thirteen CMAs - display higher

homeownership rates for immigrants. Among these thirteen CMAs, the difference between immigrants and non-immigrants varies a lot: the Sudbury and Thunder Bay area, Victoria and Oshawa have larger gaps (14.4 percentage points, 12 percentage points and 9.5 percentage points respectively) while Kitchener has almost the same rates for both (67.5% and 66.8%). Finally, non-immigrants appear to have a homeownership advantage in Francophone-dominated areas such as Quebec, Montreal, Sherbrooke and Trois-Rivieres, and Ottawa-Hull. Quebec shows the biggest gap at 12.2 percentage points. Compared to Quebec, Toronto displays roughly the same rates for both groups (63.5% and 63.9%).

The univariate descriptive results show similarities and differences with those of previous studies, when all the factors react together. To explore which factor has the most important effect on home ownership patterns and by how much, we need to carry out an analysis in a multivariate framework that holds other variables constant. In the next subsection, logit model estimation will be conducted, and further analysis will be based on the estimation results.

B. Logit model estimation results

1. Overall Significance, Goodness of Fit and Multicollinearity

In total, six logit models are estimated: one for immigrants, one for non-immigrants, and four for subsamples of immigrants from different source country groups. As shown in the tables that follow, each model yields a zero p-value for the likelihood ratio test, which implies that the null hypothesis that all slope coefficients are zero can be rejected even at a 1% significance level. In other words, the included demographic, socioeconomic and source country characteristics do help to explain home ownership. To measure goodness fit, the Estrella R-square is used. For all the models, the R-square ranges from 0.29 to 0.43. Such low values are common in a logit model or for just about any application involving micro data,

although the relatively low figures imply that some other important factors are not included. Finally, multicollinearity is examined using correlation coefficients and condition indexes. The correlation coefficients between any two independent variables are all less than 0.8 and thus suggest that multicollinearity is not a problem for these models. However, condition indexes suggest that there may exist a linear relationship, but not a strong one, between the explanatory variables, since the largest condition indexes are greater than 15 and smaller than 30 for all the models.

2. Immigrant and non-immigrant home ownership comparison

As is well known, a home ownership logit model, estimated using the method of maximum likelihood, estimates the “propensity or ability” to attain home ownership (Maddala, 1992). But while the estimated coefficients of the model do provide insight into the direction of the effect of each explanatory variable, they do not accurately reflect the magnitude of the changes in the explanatory variables. Instead, one must turn to marginal effects to gain a clearer picture of the importance of each factor. The marginal effect for a dummy independent variable measures the difference between the probabilities of owning a home when the explanatory variable is zero and when the explanatory variable is one, holding all else constant. The estimated coefficients (Tables 5 and 7) and marginal effects (Tables 6 and 8) thus offer a means of determining which factors (explanatory variables) affect home ownership and by how much. Consequently, the home ownership patterns of immigrants and non-immigrants can be compared.

In Table 5, the reference individual is a single female aged 15-24 with a household size of one person and an education level of less than Grade 13, who earns less than \$20,000, works in the public administration industry, and lives in Victoria. If an immigrant rather than a non-immigrant, she was born in "other countries/regions" and landed before 1961. The

reference individual for the purposes of calculating marginal effects is slightly different, however; in the case of immigrants, the reference individual is a married male rather than a single female, while for non-immigrants the reference individual is a single male born in Canada.¹⁷ ¹⁸ Due to the slightly different definitions of reference persons for immigrants and non-immigrants, we will be very careful in comparing the marginal effects between immigrants and non-immigrants.

Table 5 shows that, of all the age groups for immigrants, the 25-34 year old group is the only one with a negative estimated coefficient, which means this group might be the most unlikely to buy a home. However, the observed *t*-ratio for the 25-34 age group is -0.147, the absolute value of which is much smaller than the critical value of *t* at the 5% significance level (1.96). This suggests that the null hypothesis that the estimated coefficient for the 25-34 age group is equal to zero cannot be rejected at the 5 percent significance level and thus there is no difference between the 25-34 age group and the reference 15-24 age group. However, the same 25-34 age group for non-immigrants has a large enough *t*-ratio to reject the null hypothesis that the estimated coefficient is equal to zero. By way of contrast, the estimated coefficient (0.892) shows that this age group for non-immigrants is the more likely to own a home than the 15-24 age group, other things equal. Despite this difference, for both immigrants and non-immigrants, the probability of purchasing a home generally increases with age. The gradually rising marginal effects for age groups (Table 5) for both immigrants and non-immigrants reveal that people are more likely to own a home when they are older, given that other variables are constant. This finding is a little different from that of the previous study by Carter (2005), who investigated the economic immigrant home ownership influence in Canada's three CMAs based on 1996 Census data. He finds that the group aged

¹⁷ SHAZAM selects the most frequent value of each explanatory variable to define a reference person for marginal effects. This is why the reference person for marginal effects is different from that for the estimated model.

¹⁸ Married persons with a household size of one person may refer to those who are married but the couple lives apart in two cities.

25-44 years old is the most likely to own a home. Checking the magnitudes of the marginal effects, I find age has an important effect on home ownership for both immigrants and non-immigrants, especially for the age range of over 55 years old (the marginal effects are all greater than 0.20).

Male immigrants and male non-immigrants seem to behave differently with respect to home ownership. Checking the t -ratios in Table 5 first, we notice that the observed t -ratio for the coefficient of the dummy variable for male immigrants is smaller than the 5% critical value, which means that the null hypothesis that the estimated coefficient is equal to zero cannot be rejected. Thus male immigrants may behave in the same fashion as female immigrants with respect to home ownership. For non-immigrants, the observed t -ratio is larger than the 5% critical value; the positive estimated coefficient shows that men are more likely to buy a home than women. These conflicting results are also reflected in the marginal effects in Table 6: men are slightly more likely to own a home than women for non-immigrants, but the reverse is true for immigrants, with other factors held constant. Overall, for both immigrant and non-immigrants, the differences in home ownership rates between men and women are not large. Furthermore, the small magnitudes of the marginal effects reveal that sex has a relatively small effect on home ownership.

Table 5 also shows that the coefficients of all the Marital Status and Household Size groups are statistically significant. The empirical results for immigrants and non-immigrants are both consistent with the descriptive findings: legally married couples are the most likely to own a home, whereas single people are the least likely to own a home, other variables held constant; generally, the larger the household size, the more likely it is that the household will purchase a home, although the probability drops a little for the 5 or more persons sub-group. These results are similar to the results of previous studies which find that married couples were the most likely to own a home in 1996 (Carter, 2005), and that immigrant household

size is positively related to home ownership (Hiebert, 2009). The larger magnitude of immigrants' marginal effects for marital status and household size may be caused by the different definitions of reference person.

Concerning education, it acts as an effective factor influencing the home ownership choice for non-immigrants. Not only are the coefficients of all the sub-groups statistically significant (Table 5), but also the estimated coefficients and marginal effects (Table 6) show a positive relationship between the level of educational attainment and home ownership. That is to say, non-immigrants with a higher education level are more likely to own a home, other conditions equal. However, for immigrants, education does not have a statistically significant effect at the 5% significance level (Table 5) in two cases: High school diploma or equivalent, and University or higher. College is the only sub-group with a statistically significant coefficient at the 5% significance level, and the marginal effect of college for immigrants is large. These results imply that immigrants with this level of education are the most likely to purchase a home, holding all else equal. But the education levels of Less than Grade 13, High School diploma or equivalent, and University or higher do not have different effects on immigrant home ownership decisions. Therefore, the effect of education on immigrant home ownership is not as evident as in the previous studies, which found that education level is positively related to immigrant home ownership (Haan, 2007; Carter, 2005). The small magnitudes of the marginal effects show that education has a small effect on home ownership decisions for both immigrants and non-immigrants.

The coefficients of all the income sub-groups are statistically significant at the 5% or even the 1% significance level. Both the estimated coefficients (Table 5) and the marginal effects (Table 6) confirm that the higher the income of households, the more likely both immigrants and non-immigrants will be to own a home, *ceteris paribus*. This result is also identical to those of previous studies (Haan, 2007; Hiebert 2009). The large magnitudes of

the marginal effects of income over \$50,000 show that higher income is very important to immigrant home ownership, even more important than larger household sizes and older ages. The magnitudes of the marginal effects for non-immigrants are much smaller, which may be due to the different definitions of the reference person. For non-immigrants, higher incomes have a less important effect on home ownership than older ages and larger household size, while the reverse is true for immigrants.

In examining the effect of source country on home ownership, I find that the estimated coefficients of all three sub-groups (U.S.A, Europe, and Asia) are statistically significant at the 5% significance level (Table 5), which implies that source country factors may have an effect on home ownership. The magnitudes of the marginal effects of the source country groups also confirm that source country may be an important factor. Focusing on the marginal effects of each sub-group, we observe that immigrants from Europe and Asia are more likely to purchase a home, while immigrants from the United States and other areas are less likely to purchase a home. This finding coincides with the descriptive result that immigrants from Europe and Asia have higher home ownership rates. In the next subsection, the effect of source country will be explored further through comparisons of the results for different immigrant source country groups.

Year of immigration proves to have a statistically significant effect at even the 1% significance level, and is positively correlated with home ownership (Table 5). The magnitude of the marginal effects shows that year of immigration is of the same importance as age for immigrants to influence home ownership decisions. These estimation results are in line with the descriptive results, which imply that the longer the immigrant stays in Canada, the more likely he or she will buy a home, other factors held constant. Balakrishnan and Wu (1992) also find that immigrants who stay longer in Canada are more likely to own a home, using 1986 Census data. However, we notice that Table 2 shows a 50 percentage point

difference in home ownership rates between immigrants landing before 1961 and the immigrants landing between 1996 and 2001, while Table 5 shows a 26 percentage points difference in home ownership rates between them. In other words, the gap in home ownership rates between those who immigrated in different years is smaller after controlling for age.

Previous studies showed little interest in the relationship between industry of employment and immigrant home ownership. Here, I attempt to find whether industry has an effect on home ownership. Checking the *t*-ratios of the estimated coefficients of the industry dummies, I find that just four industries – Utilities; Construction; Finance and insurance; and Administrative and support, waste management and remediation -- have statistically significant coefficients at the 5% significance level for both immigrants and non-immigrants. I next try a Wald test of the null hypothesis that the coefficients of all the industries are jointly zero. The observed Wald Chi-square Statistic is 60.89 with a P-value of 0.000, which implies that the above null hypothesis can be rejected at the 1% significance level. Therefore, there is evidence that industry has an effect on home ownership decisions, although the nature of that effect is not that clear. For immigrants, the marginal effects of the utilities, mining and oil and gas extraction, and management of companies and enterprises industries are higher than those of other industries (Table 6), which implies that immigrants working in these four industries are more likely to own a home. The marginal effects for the agriculture, forestry, fishing and hunting, real estate and rental and leasing, and administrative and support, waste management and remediation industries are lower than those of other industries, which imply that immigrants working in these three industries are less likely to own a home.

For non-immigrants, the marginal effects in Table 6 show that people working in agriculture, forestry, fishing and hunting, utilities, and management of companies and enterprises industries are more likely to own a home, while people working in the accommodation and food services, administrative and support, waste management and

remediation, and real estate and rental and leasing, industries are less likely to own a home. Immigrants and non-immigrants working in the administrative and support, waste management and remediation, and real estate and rental and leasing industry are both less likely to own a home compared to those in public administration industry. A lack of benefits and more frequent job turnover may explain this phenomenon. Surprisingly, the agriculture, forestry, fishing and hunting industry has opposite results for immigrants and non-immigrants. There may be policies encouraging non-immigrants to work in this industry, but this needs to be confirmed and other reasons for this result remain to be explored in the future.

I notice that both for immigrants and non-immigrants, people working in the utilities industry and the management of companies and enterprises industry are more likely to own a home. This interesting phenomenon might result from the stability of employment or some housing-related policies in these industries (like banks offering lower mortgage rates to their permanent employees). Although the utilities and management of companies and enterprises industries have higher marginal effects for both immigrants and non-immigrants, the magnitudes of the marginal effects for immigrants are larger than those for non-immigrants. Does this mean that industry affects home ownership more for immigrants than for non-immigrants? I should be cautious in drawing this conclusion due to the different definitions of the reference person for marginal effects. Taking age as a reference, immigrants and non-immigrants have marginal effects with almost the same weight. Since age is not related to marital status, different definitions of reference categories for marginal effects do not affect the conclusion that age affects immigrant home ownership by the same weight as non-immigrant home ownership. Similarly, if industry of employment is unrelated to a person's marital status, I can draw the conclusion that industry affects immigrant home ownership more than non-immigrant home ownership.

For immigrants and non-immigrants, people who live in CMAs such as Oshawa, St.

Catharines-Niagara, and Calgary (Table 5 shows that all of these have statistically significant coefficients at the 5% significance level) do appear to be more likely to own a home, while people living in CMAs such as Montreal, Ottawa-Hull, and Toronto appear to be less likely to buy a home, compared to the reference CMA, Victoria (Table 5). Carter's (2005) argument that smaller cities have lower housing prices might explain the above results. Other CMAs do not have significant coefficients at the 5% significance level either for immigrants or for non-immigrants. Checking the marginal effects in Table 6, I find that immigrants are less likely to own a home in Quebec CMAs such as Quebec City, Montreal, Sherbrooke and Trois-Rivières. The magnitudes of these negative marginal effects are relatively large, which means these three CMAs have bigger effects on immigrant home ownership than other CMAs. But the magnitudes of these marginal effects are very small for non-immigrants, although they are negative as well. This may result from the language barriers facing immigrants, since French is the dominant language in these CMAs. Immigrants are more likely to own a home in Oshawa, Calgary and the Sudbury and Thunder Bay area. New labour markets developed in these CMAs might attract immigrants and contribute to this phenomenon. For non-immigrants, Windsor and the Regina and Saskatoon have higher marginal effects, while Montreal and Toronto have lower marginal effects. For Windsor and Regina and Saskatoon, the marginal effects are larger for non-immigrants than for immigrants, which imply that these two CMAs have larger effects on non-immigrant home ownership.

3. Comparisons of home ownership patterns among immigrant source country groups and non-immigrants.

As discussed above, source country may significantly affect home ownership. Thus, if the model is estimated separately for immigrants from each source country group, the home ownership features of each group can be revealed, and I can trace the impact of each source country on immigrant home ownership. To this end, logit estimates for four different

subsamples of immigrants are included in Table 7. To facilitate comparisons with non-immigrants, the estimated coefficients for non-immigrants from Table 5 are included in the last column.

Before analyzing the comparisons, the sample size of each source country group should be mentioned. The sample sizes of immigrants from USA, Europe, Asia, and other regions are 1800, 26142, 18614 and 10616 respectively. USA immigrants have the smallest sample size, which may have a negative effect on the explanatory power of the model. This observation reminds us to be cautious when analyzing home ownership patterns for USA immigrants.

For the purposes of calculating marginal effects, the reference person for USA immigrants is a single male aged 15-24 years with a household size of one person and an education level of university or higher, who earns less than \$20,000, works in public administration, and lives in Victoria. The reference person for immigrants from Europe, Asia and other regions is a married male aged 15-24 years with a household size of one person and an education level of less than Grade 13, who earns less than \$20,000, works in public administration, and lives in Victoria. The reference non-immigrant is a single Canadian-born male aged 15-24 years with the household size of one person and education level of less than Grade 13, who earns less than \$20,000, works in public administration, and lives in Victoria. Since the reference person definitions of European, Asian and other regions immigrants are the same, it is straightforward to compare the home ownership patterns between these source country groups. But I will be cautious in comparing the home ownership patterns between USA immigrants, non-immigrants and these three groups.

As indicated in Table 8, generally the effect of age is similar for different immigrant source country groups; i.e., the older the immigrant, the more likely he or she will purchase a home, holding other variables constant, which is identical to the behavior of non-immigrants.

The only exception is that the marginal effect for Asian immigrants decreases when they are over 65 years old. In addition, for Asian immigrants, the coefficients of the age groups 25-34 and 35-44 are not statistically significant, which means that these age groups are no different than the reference age group of 15-24 year-olds. But the marginal effect for Asian immigrants aged 25-34 years is negative, which means they are the least likely to own a home, even less likely than the 15-24 year-old immigrants. Immigrants from the USA, Europe, and other regions behave in the same way as their non-immigrant counterparts, i.e., these immigrants are more likely to own a home when they are older. However, the magnitudes of the marginal effects for the four source country groups are different. European immigrants have the highest marginal effects throughout the whole age range despite the fact that the USA has a different reference person for marginal effects. Asian immigrants have the lowest marginal effects in the age range of over 25 years old. These results imply that age may have more effect on home ownership for European immigrants than for Asian immigrants.

Male immigrants of European origin might have some disadvantages relative to females in home ownership since their marginal effect is negative (Table 8), and this factor has a statistically significant coefficient only for this source country group (Table 7). However, the small magnitude of the marginal effect implies that the disadvantage of men over women is not big. Likewise, this factor does not have a statistically significant effect for non-immigrants at the 5% significance level. Interestingly, among non-immigrants, males are more likely to own a home than females, but among European immigrants, they are less likely to own a home than females, holding all else constant (Table 8). The higher home ownership rates of males may be due to the higher incomes of males as discussed in subsection A. However, this result for European male immigrants is not consistent with the descriptive tables, which suggested that male immigrants are more likely to own a home than female immigrants. Overall, for both immigrants and non-immigrants, the small magnitudes

of the marginal effects suggest that sex may not be an important factor in home ownership decisions.

As for marital status, Table 8 shows that legally married couples are the most likely to own a home for all four immigrant source country groups and non-immigrants. Single people are the least likely to own a home for three immigrant source country groups -- USA, Europe, and Others -- and non-immigrants. Among Asian immigrants, those who are single are not the least likely to own a home. Instead, Asian immigrants in the other marital status category are the least likely to own a home. Among all the immigrant source country groups, American immigrants behave the most like non-immigrants. Comparing the magnitudes of the marginal effects, we find that the marginal effect of being legally married is higher for European immigrants than for other source country groups.

Household size is positively correlated with home ownership for European immigrants. Other source country groups are less likely to own a home when their household size is five or more persons (Table 8). However, when a household size is below five persons, the probability of owning a home increases with household size for other immigrants. The magnitude of the marginal effects appears to be larger for European immigrants, which implies that larger household sizes have a greater effect on home ownership for European immigrants than for other source country groups. American immigrants and non-immigrants have marginal effects of similar magnitude, which implies that household size has similar effects on their probabilities of home ownership.

Education does not have a significant effect on home ownership for all immigrant source country groups (Table 7), especially for immigrants from the USA. For American immigrants, none of the education variables have a statistically significant coefficient even at the 10% significance level, which suggests that education may not be relevant to this particular home ownership model. For the other source country groups, at least two education

variables have statistically significant coefficients at the 5% significance level. Those with a university education are the most likely to own a home for immigrants from other regions, and it plays the same role for non-immigrants. Asian immigrants with a College education are the most likely to own a home. Surprisingly, among immigrants of European origin, those with an education level of less than grade 13 are the most likely to own a home, and those with a university education are the least likely to own a home. Therefore, the relationship between home ownership and education is different for each immigrant source country group.

Income is a factor that has an identical effect on home ownership decisions for different immigrant source country groups as well as for non-immigrants. The result (Table 7 and 8) that income is positively related to home ownership is in accordance with the descriptive results and the results of previous studies (Haan, 2007; Hiebert 2009). The magnitudes of the marginal effects show that income affects home ownership to a relatively high degree for European and other regions immigrants, and to a relatively low degree for USA immigrants and non-immigrants.

The results with respect to year of immigration are a little different from those of Balakrishnan and Wu (1992) for 1986. While immigrants from Europe, Asia, and other regions are inclined to be more likely to own a home the longer they have been in Canada, it is not evident that immigrants from the USA follow this trend. Despite the fact that most year of immigration coefficients are not statistically significant for immigrants from the USA (Table 7), the finding that those who landed in 1981-1990 are the most likely to own a home is unique for U.S. immigrants (Table 8). The magnitudes of the marginal effect for Asian immigrant shows that year of immigration is an important factor affecting their home ownership -- even more important than age and income.

It is difficult to identify one industry that has the same effect on home ownership decisions for all immigrant source country groups. Each source country group has its own

statistically significant industries which might help to change home ownership choices (Table 7). Checking marginal effects (Table 8), I find that USA, European and other regions' immigrants working in the utilities industry are the most likely to own a home compared to other industries; Asian immigrants working in the management of companies and enterprises industry are the most likely to own a home while those working in the agriculture, forestry, fishing and hunting industry are the least likely to own a home. By way of contrast, non-immigrants working in the agriculture, forestry, fishing and hunting industry are the most likely to own a home, while those working in the accommodation and food services industry are the least likely to own a home. Due to the lack of previous studies that examine the relationship between industry and home ownership, I can only say that there is no consistent pattern in the effect of industries on the home ownership decisions of immigrants with different source countries. Overall, the small magnitudes of the marginal effects reveal that industry as a whole has small effects on home ownership for immigrants and non-immigrant, but certain industries play an important role in affecting home ownership decisions for certain immigrant source country groups.

The coefficients of the CMA dummies, even for global cities like Toronto and Vancouver, are not always statistically significant in the home ownership models for different immigrant source country groups (Table 7). This suggests that different source country groups in the same CMA might have different propensities to buy a home. Taking European immigrants as an example, I find that those living in St. Catharines-Niagara are the most likely to own a home, while those living in Sherbrooke and Trois-Rivieres are the least likely to own a home, holding all else constant. Among American immigrants, those living in Kitchener are the most likely to own a home. Among Asians, those living in Montreal are the least likely to own a home. Among other immigrants, those living in Oshawa are the most likely to own a home. Haan (2005) also found that the effects of CMAs on immigrant home

ownership were different for each source country group. Therefore, CMA is considered a less important factor since little evidence shows that living in different places causes changes in immigrants' home ownership over time (Haan, 2005). However, I observe here that certain CMAs have really important effects on home ownership. For example, the magnitudes of the marginal effects for CMAs in Quebec province are largest for Asian immigrants, which imply that these CMA are important factors for them, even more important than age, household size and income factors. But for non-immigrants, the magnitudes of the marginal effects of all CMAs are much smaller (which may result from the different definitions of reference persons). Other reasons for these differences need to be explored in future research.

V. Conclusion

In this paper, home ownership patterns of immigrants living in 19 CMAs in Canada are examined using a sample of 190,908 observations retrieved from the 2001 Census. The sample is restricted to immigrants and citizens by birth only. Demographic, socioeconomic and source country information on the primary household maintainer is collected from the 2001 Census of Population Households and Housing PUMF. I use logit models to analyze the propensity of attaining home ownership and the factors that might or might not influence the home ownership decision. I first carry out a comparison of home ownership patterns between immigrants and non-immigrants. Then, immigrant source country groups are compared to further analyze how source country affects immigrant home ownership. Based on descriptive and estimation results, our findings show some similarities to previous studies and also some differences.

First of all, age, marital status, household size, and income influence the home ownership decisions of immigrants and non-immigrants in a similar fashion. People are more likely to buy a home if they are older, except that their propensity to do so will drop a little

when they are over 65 years old. Legally married persons are the most likely to own a home, while single persons (never married) are the least likely to own a home. Generally, the probability of home ownership increases with household size, except when the household size is five or more persons. Income is positively related to home ownership. These results are similar to those of the previous studies by Hiebert (2009) and Haan (2007).

Second, immigrant and non-immigrant home ownership patterns differ with respect to sex, education, industry and CMA. Male immigrants are less likely to buy a home than female immigrants, while male non-immigrants are more likely to buy a home than female non-immigrants. Non-immigrants whose highest educational level is “university or higher” are the most likely to own a home. On the contrary, immigrants who have the same highest education level are the least likely to own a home. As for industry, whether immigrant or non-immigrant, higher marginal effects are detected in the Management of companies and enterprises industry and the Utilities industry, which implies that people working in these two industries are more likely to own a home. There is some evidence that CMA is an important factor affecting home ownership because some CMAs have similar effects on immigrant home ownership patterns (like CMAs in Quebec that have lower home ownership rates for immigrants). However, other CMAs differ in their effects on home ownership.

Third, immigrant source country groups do behave differently with respect to owning a home, which suggests that source country may influence immigrant home ownership decisions. This finding is consistent with that in previous studies (Hiebert, 2009). Although some similar tendencies can be observed with respect to the effects of age, marital status, household size, and income characteristics, we cannot deny that there are exceptions, and that other factors affect different source country groups in different ways, especially education, industry and CMA. Generally, age, household size, income, and year of immigration are positively related to home ownership for all source countries. Legally married immigrants are

the most likely to purchase a home for all source countries.

There are some limitations of this paper that should be mentioned. Firstly, the data used in this paper are not the most up-to-date and a comparison between the two most recent Canadian Census files is not carried out since the 2006 Census data did not become available until March 2010. Secondly, this paper uses “place of birth” as an indicator for immigrant, which is not the most accurate way to describe immigrant cultural roots, since people with different cultures can be born in the same country/region. The limited number of categories in the “place of birth” variable of the Census is also a barrier to relating home ownership patterns to different source countries. Thirdly, the reasons why immigrant source country groups behave differently in home ownership decisions are not discussed due to the absence of further data and previous research. Fourthly, some other factors that have an important effect on immigrant home ownership are apparently not included in the model, since the explanatory power of this model is not large. Future research should attempt to find other characteristics that significantly affect immigrant home ownership and investigate the changes in immigrant home ownership over time.

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Table 1: Definitions of dependent and explanatory variables

Variable	Definition
TENURE1	Status of owning a home
HMAGE2	25-34 years old
HMAGE3	35-44 years old
HMAGE4	45-54 years old
HMAGE5	55-64 years old
HMAGE6	Older than 64 years
HMSEX1	Male
HMMARST1	Legally Married
HMMARST2	Other marital status (widowed, separated and divorced)
HHSIZE2	2 persons in a household
HHSIZE3	3 persons in a household
HHSIZE4	4 persons in a household
HHSIZE5	5 or more persons in a household
HMHLOS0	Less than Grade 13
HMHLOS1	High School diploma or equivalent
HMHLOS2	College
HMHLOS3	University or higher
TOTINCH1	\$20,000-\$29,999
TOTINCH2	\$30,000-\$39,999
TOTINCH3	\$40,000-\$49,999
TOTINCH4	\$50,000-\$59,999
TOTINCH5	\$60,000-\$69,999
TOTINCH6	\$70,000 or more
IMMST1	Immigrant status
HMPOB2	Born in Canada (reference)
HMPOB3	Born outside Canada: United States
HMPOB4	Born outside Canada: Europe
HMPOB5	Born outside Canada: Asia
HMPOB6	Born outside Canada: Other countries and regions
HMIMMIG2	Immigrants landed in 1961-1970
HMIMMIG3	Immigrants landed in 1971-1980
HMIMMIG4	Immigrants landed in 1981-1990
HMIMMIG5	Immigrants landed in 1991-1995
HMIMMIG6	Immigrants landed in 1996-2001
HMNAIC1	Agriculture, forestry, fishing and hunting
HMNAIC2	Mining and oil and gas extraction
HMNAIC3	Utilities
HMNAIC4	Construction
HMNAIC5	Manufacturing
HMNAIC6	Wholesale trade
HMNAIC7	Retail trade
HMNAIC8	Transportation and warehousing
HMNAIC9	Information and cultural industries
HMNAIC10	Finance and insurance
HMNAIC11	Real estate and rental and leasing
HMNAIC12	Professional, scientific and technical services
HMNAIC13	Management of companies and enterprises
HMNAIC14	Administrative and support, waste management and remediation
HMNAIC15	Educational services
HMNAIC16	Health care and social assistance

HMNAIC17	Arts, entertainment and recreation
HMNAIC18	Accommodation and food services
HMNAIC19	Other services
CMA1	Halifax
CMA2	Quebec
CMA3	Montreal
CMA4	Sherbrooke and Trois-Rivieres
CMA5	Ottawa-Hull
CMA6	Oshawa
CMA7	Toronto
CMA8	Hamilton
CMA9	St. Catharines-Niagara
CMA10	Kitchener
CMA11	London
CMA12	Windsor
CMA13	Sudbury and Thunder Bay
CMA14	Winnipeg
CMA15	Regina and Saskatoon
CMA16	Calgary
CMA17	Edmonton
CMA18	Vancouver

Note: Variables above are all dummy variables, and reflect the information of primary household maintainer, coded 1 for yes and 0 for no.

Table 2: Home ownership rate of immigrants and non-immigrants by Age, Sex Marital Status, Household size, Education, Income, Source Country and Immigration Year

Characteristics	Immigrant Home ownership rate (%)	Non-immigrant Home ownership rate (%)
Age		
15-24	18.9	12.4
25-34	36.6	44.2
35-44	55.3	67.0
45-54	71.2	71.2
55-64	77.6	70.6
>65	71.2	63.4
Sex		
Male	68.5	68.8
Female	52.9	49.4
Marital Status		
Single (never married)	34.1	34.4
Legally Married	74.1	84.5
Others	52.6	51.7
Household Size		
1 person	41.3	37.2
2 persons	66.2	62.6
3 persons	64.8	70.4
4 persons	73.2	83.7
5 or more persons	74.0	82.4
Education		
Less than Grade 13	65.2	51.8
High School diploma or equivalent	64.6	63.0
College	65.4	61.4
University or higher	60.7	66.1
Income		
Less than \$20,000	33.0	26.1
\$20,000-\$29,999	50.0	40.1
\$30,000-\$39,999	53.3	47.7
\$40,000-\$49,999	61.2	57.9
\$50,000-\$59,999	68.1	65.9
\$60,000-\$69,999	73.4	72.5
\$70,000 or more	86.7	85.7
Source Country		
Born in Canada	54.1*	61.0**
Born outside Canada: United States	64.9	56.2
Born outside Canada: Europe	72.9	62.2
Born outside Canada: Asia	60.4	44.4
Born outside Canada: Other	45.7	54.7
Year of Immigration		
Before 1961	79.2	-
1961-1970	78.6	-
1971-1980	70.7	-
1981-1990	59.0	-
1991-1995	48.8	-
1996-2001	29.1	-

Notes:

- Numbers in Table 2 is retrieved by SHAZAM.

* Since the raw numbers of immigrants born in Canada are very rare, their homeownership rate might not as meaningful as other immigrant homeownership rates.

**Since the raw numbers of non-immigrants born outside Canada are very rare, the homeownership rate of the non-immigrant born in Canada is more meaningful.

Table 3: Home ownership rate of immigrants and non-immigrants by Industry

Industry	Immigrant Home ownership rate (%)	Non-immigrant Home ownership rate (%)
Agriculture, forestry, fishing and hunting	69.9	74.8
Mining and oil and gas extraction	82.4	78.8
Utilities	83.3	81.5
Construction	75.8	68.6
Manufacturing	64.9	67.1
Wholesale trade	64.6	69.1
Retail trade	61.6	55.5
Transportation and warehousing	66.2	67.9
Information and cultural industries	58.9	60.1
Finance and insurance	67.1	68.8
Real estate and rental and leasing	68.6	63.3
Professional, scientific and technical services	63.6	65.1
Management of companies and enterprises	74.6	80.0
Administrative and support, waste management and remediation	50.1	47.8
Educational services	67.0	66.9
Health care and social assistance	60.7	58.1
Arts, entertainment and recreation	59.4	50.5
Accommodation and food services	55.6	31.1
Other services	60.3	56.8
Public administration	72.1	71.6

Table 4: Home ownership rate of immigrants and non-immigrants by CMA

CMA	Immigrant Home ownership rate (%)	Non-immigrant Home ownership rate (%)
Halifax	65.2	61.5
Quebec	43.7	55.9
Montreal	47.1	51.6
Sherbrooke and Trois-Rivieres	44.8	54.8
Ottawa-Hull	58.3	63.0
Oshawa	82.9	73.4
Toronto	63.5	63.9
Hamilton	71.9	67.3
St. Catharines-Niagara	80.1	71.2
Kitchener	67.5	66.8
London	67.5	61.9
Windsor	70.8	72.7
Sudbury and Thunder Bay	81.3	66.9
Winnipeg	71.2	64.2
Regina and Saskatoon	70.2	66.5
Calgary	75.1	69.4
Edmonton	71.6	65.2
Vancouver	66.0	58.4
Victoria	72.6	60.6

Table 5: Estimated coefficients of logit models for immigrants and non-immigrants home ownership

Characteristics	Immigrants		Non-immigrants	
	Coefficient	t-ratio	Coefficient	t-ratio
Age				
15-24	Ref.	Ref.	Ref.	Ref.
25-34	-0.042	-0.417	0.892	20.174
35-44	0.311	3.125	1.689	38.057
45-54	0.677	6.734	1.924	42.004
55-64	1.027	9.924	2.351	48.168
>65	1.100	10.343	2.625	52.279
Sex				
Male	-0.034	-1.249	0.037	2.345
Female	Ref.	Ref.	Ref.	Ref.
Marital Status				
Single	Ref.	Ref.	Ref.	Ref.
Legally Married	0.830	21.142	1.108	52.075
Others	0.170	4.500	0.234	12.023
Household Size				
1 person	Ref.	Ref.	Ref.	Ref.
2 persons	0.384	10.651	0.146	7.522
3 persons	0.622	14.559	0.445	17.771
4 persons	0.975	21.121	0.884	29.939
5 or more persons	0.904	18.328	0.624	16.832
Education				
Less than Grade 13	Ref.	Ref.	Ref.	Ref.
High School diploma or equivalent	-0.001	-0.015	0.343	15.393
College	0.094	2.922	0.437	21.277
University or higher	-0.005	-0.150	0.478	21.869
Income				
Less than \$20,000	Ref.	Ref.	Ref.	Ref.
\$20,000-\$29,999	0.315	8.366	0.414	16.101
\$30,000-\$39,999	0.571	14.727	0.748	29.021
\$40,000-\$49,999	0.846	20.529	1.116	41.434
\$50,000-\$59,999	1.108	25.068	1.384	48.264
\$60,000-\$69,999	1.312	27.044	1.602	51.766
\$70,000 or more	1.983	50.979	2.155	81.194
Source Country				
Born in Canada	0.413	1.030	0.203	1.721
Born outside Canada: United States	0.381	5.855	-	-
Born outside Canada: Europe	0.673	20.618	-	-
Born outside Canada: Asia	0.663	20.659	-	-
Born outside Canada: Other	Ref.	Ref.	-	-
Immigration Year				
Before 1961	Ref.	Ref.	-	-
1961-1970	-0.159	-3.905	-	-
1971-1980	-0.499	-11.801	-	-
1981-1990	-0.948	-21.117	-	-
1991-1995	-1.346	-27.816	-	-
1996-2001	-2.075	-39.630	-	-
Industry				
Agriculture, forestry, fishing and hunting	-0.128	-0.771	0.528	5.502
Mining and oil and gas extraction	0.251	1.017	0.124	1.261
Utilities	0.586	2.592	0.487	5.215
Construction	0.210	3.172	0.246	6.331
Manufacturing	0.015	0.361	0.124	4.171
Wholesale trade	0.084	1.300	0.160	4.005
Retail trade	0.092	1.711	0.046	1.399
Transportation and warehousing	0.009	0.151	0.078	2.072
Information and cultural industries	0.034	0.425	-0.055	-1.221
Finance and insurance	0.174	2.523	0.223	5.315

Real estate and rental and leasing	-0.118	-1.266	-0.148	-2.559
Professional, scientific and technical services	0.111	2.057	0.003	0.091
Management of companies and enterprises	0.632	1.846	0.443	1.688
Administrative and support, waste management and remediation	-0.261	-3.995	-0.286	-6.617
Educational services	0.083	1.250	0.114	3.096
Health care and social assistance	0.037	0.667	-0.031	-0.963
Arts, entertainment and recreation	0.085	0.710	-0.050	-0.829
Accommodation and food services	0.004	0.076	-0.400	-8.357
Other services	0.013	0.208	-0.014	-0.333
Public administration	Ref.	Ref.	Ref.	Ref.
CMA				
Halifax	-0.172	-1.049	0.014	0.217
Quebec	-0.670	-3.576	-0.090	-1.615
Montreal	-0.823	-8.588	-0.370	-7.376
Sherbrooke and Trois-Rivieres	-0.624	-2.258	-0.014	-0.215
Ottawa-Hull	-0.551	-5.180	-0.130	-2.360
Oshawa	0.353	2.322	0.256	3.392
Toronto	-0.324	-3.470	-0.257	-5.003
Hamilton	-0.157	-1.450	0.114	1.856
St. Catharines-Niagara	0.402	3.096	0.497	7.331
Kitchener	-0.276	-2.307	0.061	0.908
London	-0.238	-1.970	0.025	0.386
Windsor	0.028	0.217	0.530	7.107
Sudbury and Thunder Bay	0.253	1.411	0.286	4.109
Winnipeg	0.064	0.564	0.267	4.557
Regina and Saskatoon	-0.031	-0.192	0.414	6.528
Calgary	0.406	3.751	0.293	5.106
Edmonton	-0.056	0.517	0.169	2.977
Vancouver	-0.037	-0.388	-0.222	-4.181
Victoria	Ref.	Ref.	Ref.	Ref.
Constant	-1.559	-10.777	-3.720	-27.424

Notes:

- For the logit model of immigrant home ownership:
The total number of observations is 57,209.
Likelihood Ratio Test = 21377.7 with 67 D.F. P-value= 0.00000
Estrella $R^2 = 0.3558$
- For the logit model of non-immigrant home ownership:
The total number of observations is 133,699.
Likelihood Ratio Test = 50592.6 with 59 D.F. P-value= 0.00000
Estrella $R^2 = 0.3590$

Table 6: Marginal effects of logit models for immigrants and non-immigrants home ownership

Characteristics	Immigrants	Non-immigrants
Age		
25-34	-0.009	0.040
35-44	0.071	0.113
45-54	0.160	0.144
55-64	0.248	0.214
>65	0.266	0.268
Sex		
Male	-0.007	0.001
Marital Status		
Legally Married	0.149	0.055
Others	0.038	0.008
Household Size		
2 persons	0.088	0.005
3 persons	0.147	0.016
4 persons	0.235	0.040
5 or more persons	0.217	0.024
Education		
High School diploma or equivalent	-0.000	0.012
College	0.021	0.016
University or higher	-0.001	0.017
Income		
\$20,000-\$29,999	0.072	0.015
\$30,000-\$39,999	0.134	0.031
\$40,000-\$49,999	0.203	0.056
\$50,000-\$59,999	0.267	0.080
\$60,000-\$69,999	0.316	0.103
\$70,000 or more	0.454	0.180
Source Country		
Born in Canada	0.095	0.005
Born outside Canada: United States	0.088	-
Born outside Canada: Europe	0.159	-
Born outside Canada: Asia	0.157	-
Immigration Year		
1961-1970	-0.033	-
1971-1980	-0.097	-
1981-1990	-0.165	-
1991-1995	-0.210	-
1996-2001	-0.263	-
Industry		
Agriculture, forestry, fishing and hunting	-0.027	0.020
Mining and oil and gas extraction	0.057	0.004
Utilities	0.138	0.018
Construction	0.047	0.008
Manufacturing	0.003	0.004
Wholesale trade	0.018	0.005
Retail trade	0.020	0.001
Transportation and warehousing	0.002	0.002
Information and cultural industries	0.007	-0.002
Finance and insurance	0.039	0.007
Real estate and rental and leasing	-0.025	-0.004
Professional, scientific and technical services	0.024	0.000
Management of companies and enterprises	0.149	0.016
Administrative and support, waste management and remediation	-0.054	-0.007
Educational services	0.018	0.003
Health care and social assistance	0.008	-0.001
Arts, entertainment and recreation	0.019	-0.001
Accommodation and food services	0.001	-0.010

Other services	0.003	-0.000
CMA		
Halifax	-0.036	0.000
Quebec	-0.125	-0.002
Montreal	-0.148	-0.009
Sherbrooke and Trois-Rivieres	-0.118	-0.000
Ottawa-Hull	-0.106	-0.004
Oshawa	0.081	0.008
Toronto	-0.066	-0.007
Hamilton	-0.033	0.003
St. Catharines-Niagara	0.093	0.018
Kitchener	-0.057	0.002
London	-0.049	0.001
Windsor	0.006	0.020
Sudbury and Thunder Bay	0.057	0.010
Winnipeg	0.014	0.009
Regina and Saskatoon	-0.007	0.015
Calgary	0.094	0.010
Edmonton	0.012	0.005
Vancouver	-0.008	-0.006
Estimated Probability of Reference Person	0.318 ¹	0.030 ²

Note:

1: The reference person of immigrants for calculating marginal effects refers to a married male aged 15-24 with the household size of one person and education level of less than Grade 13, who earns less than \$20,000, was born outside Canada in other regions, landed before 1961, works in Public Administration, and lives in Victoria.

2: The reference person of non-immigrants for calculating marginal effects refers to a single Canadian-born male aged 15-24 with the household size of one person and education level of less than Grade 13, who earns less than \$20,000, works in Public Administration, and lives in Victoria.

Table 7: Estimated coefficients of logit models for home ownership of four immigrant source country groups and non-immigrants

Characteristics	Immigrant				Non-immigrants
	USA	Europe	Asia	Others	
Age					
15-24	Ref.	Ref.	Ref.	Ref.	Ref.
25-34	0.637	0.357**	-0.211	0.089	0.892*
35-44	1.374*	0.666*	0.137	0.522*	1.689*
45-54	1.836*	0.949*	0.644*	0.746*	1.924*
55-64	2.009*	1.408*	0.844*	1.228*	2.351*
>65	2.678*	1.546*	0.601*	1.197*	2.625*
Sex					
Male	-0.150	-0.082*	0.035	-0.030	0.037*
Female	Ref.	Ref.	Ref.	Ref.	Ref.
Marital Status					
Single	Ref.	Ref.	Ref.	Ref.	Ref.
Legally Married	1.124*	1.065*	0.454*	0.908*	1.108*
Others	0.220	0.269*	-0.048	0.326*	0.234*
Household Size					
1 person	Ref.	Ref.	Ref.	Ref.	Ref.
2 persons	0.115	0.345*	0.422*	0.302*	0.146*
3 persons	0.371	0.557*	0.729*	0.511*	0.445*
4 persons	1.008*	0.927*	1.057*	0.828*	0.885*
5 or more persons	0.935*	0.971*	0.998*	0.758*	0.625*
Education					
Less than Grade 13	Ref.	Ref.	Ref.	Ref.	Ref.
High School diploma or equivalent	0.346	-0.170*	0.161*	0.238*	0.343*
College	0.090	-0.071	0.306*	0.343*	0.437*
University or higher	0.311	-0.247*	0.082	0.460*	0.478*
Income					
Less than \$20,000	Ref.	Ref.	Ref.	Ref.	Ref.
\$20,000-\$29,999	0.660*	0.379*	0.256*	0.195**	0.414*
\$30,000-\$39,999	1.033*	0.653*	0.440*	0.624*	0.748*
\$40,000-\$49,999	1.118*	0.865*	0.718*	1.073*	1.116*
\$50,000-\$59,999	1.380*	1.135*	1.000*	1.339*	1.383*
\$60,000-\$69,999	1.729*	1.221*	1.192*	1.724*	1.603*
\$70,000 or more	2.253*	1.975*	1.816*	2.337*	2.155*
Immigration Year					
Before 1961	Ref.	Ref.	Ref.	Ref.	-
1961-1970	-0.142	-0.094*	-0.307**	-0.090	-
1971-1980	-0.113	-0.366*	-0.787*	-0.414*	-
1981-1990	0.101	-0.795*	-1.080*	-1.090*	-
1991-1995	-0.213	-1.328*	-1.445*	-1.607*	-
1996-2001	-0.884*	-2.071*	-2.269*	-2.126*	-
Industry					
Agriculture, forestry, fishing and hunting	0.418	0.328	-0.533*	-1.166	0.528*
Mining and oil and gas extraction	1.450	0.328	0.115	0.425	0.123
Utilities	1.491	0.650**	0.155	1.233*	0.486*
Construction	0.011	0.238*	0.201	0.296**	0.246*
Manufacturing	0.346	0.072	0.020	0.096	0.124*
Wholesale trade	0.258	0.100	0.071	0.153	0.160*
Retail trade	-0.024	0.073	0.060	0.321*	0.046
Transportation and warehousing	0.842**	-0.051	0.006	0.174	0.078*
Information and cultural industries	0.197	0.020	0.024	0.151	-0.054
Finance and insurance	0.962*	-0.174	0.320*	0.227	0.223*
Real estate and rental and leasing	0.770	-0.440*	0.322**	-0.121	-0.149*
Professional, scientific and technical services	0.073	0.041	0.183*	0.257*	0.003
Management of companies and enterprises	-0.064	0.521	0.588	1.036	0.443**

Administrative and support, waste management and remediation	-0.604	-0.236*	-0.310*	-0.130	-0.286*
Educational services	-0.019	0.096	0.096	0.259**	0.114*
Health care and social assistance	0.511**	-0.020	0.016	0.100	-0.032
Arts, entertainment and recreation	0.767**	0.158	-0.011	-0.063	-0.051
Accommodation and food services	-1.065*	-0.023	0.089	-0.204	-0.399*
Other services	0.155	-0.004	-0.149	0.404*	-0.014
Public administration	Ref.	Ref.	Ref.	Ref.	Ref.
CMA					
Halifax	0.024	0.003	-0.680**	-0.602	0.013
Quebec	-0.573	-0.525*	-1.494*	-0.440	-0.090
Montreal	-0.384	-0.654*	-1.527*	-0.647*	-0.370*
Sherbrooke and Trois-Rivieres	0.474	-0.788**	-1.471*	-1.277**	-0.014
Ottawa-Hull	-0.141	-0.297*	-1.077*	-0.520	-0.131*
Oshawa	0.940	0.205	0.054	0.933*	0.256*
Toronto	-0.294	-0.284*	-0.659*	-0.207	-0.257*
Hamilton	0.255	-0.133	-0.971*	0.289	0.114**
St. Catharines-Niagara	0.548	0.416*	-0.395	0.602	0.497*
Kitchener	0.957**	-0.290**	-1.016*	0.195	0.061
London	0.030	-0.221	-1.035*	0.530	0.025
Windsor	0.353	0.218	-0.736*	0.256	0.530*
Sudbury and Thunder Bay	0.130	0.279	0.170	-0.488	0.286*
Winnipeg	0.168	-0.117	-0.142	0.527	0.266*
Regina and Saskatoon	0.115	-0.036	-0.366	0.185	0.414*
Calgary	0.196	0.283**	0.231	0.613**	0.293*
Edmonton	-0.005	-0.008	-0.207	0.308	0.169*
Vancouver	-0.483	-0.360*	-0.060	-0.117	-0.222*
Victoria	Ref.	Ref.	Ref.	Ref.	Ref.
Constant	-3.315*	-1.300*	-0.069	-2.309*	-3.720*

Notes:

* The coefficient is statistically significant at the 5% significant level.

**The coefficient is statistically significant at the 10% significant level.

1. For the logit model of the home ownership for USA immigrants:

The total number of observations is 1800.

Likelihood Ratio Test = 639.4 with 63 D.F. P-value= 0.00000

Estrella $R^2 = 0.3398$

2. For the logit model of the home ownership for European immigrants:

The total number of observations is 26,142.

Likelihood Ratio Test = 7760.6 with 63 D.F. P-value= 0.00000

Estrella $R^2 = 0.2900$

3. For the logit model of the home ownership for Asian immigrants:

The total number of observations is 18,614.

Likelihood Ratio Test = 6407.4 with 63 D.F. P-value= 0.00000

Estrella $R^2 = 0.3281$

4. For the logit model of the home ownership for immigrants from other regions:

The total number of observations is 10,616.

Likelihood Ratio Test = 4937.8 with 63 D.F. P-value= 0.00000

Estrella $R^2 = 0.4330$

Table 8: Marginal effects of logit models for home ownership of four immigrant source country groups and non-immigrants.

Characteristics	Immigrant				Non-immigrants
	USA	Europe	Asia	Others	
Age					
25-34	0.034	0.089	-0.051	0.014	0.040
35-44	0.103	0.165	0.032	0.094	0.113
45-54	0.170	0.232	0.140	0.142	0.144
55-64	0.200	0.327	0.176	0.256	0.214
>65	0.342	0.352	0.132	0.249	0.268
Sex					
Male	-0.006	-0.020	0.008	-0.005	0.001
Marital Status					
Legally Married	0.075	0.221	0.112	0.105	0.055
Others	0.010	0.067	-0.012	0.056	0.008
Household Size					
2 persons	0.005	0.086	0.096	0.051	0.005
3 persons	0.017	0.138	0.156	0.092	0.016
4 persons	0.064	0.226	0.211	0.161	0.040
5 or more persons	0.057	0.237	0.202	0.145	0.025
Education					
High School diploma or equivalent	0.016	-0.041	0.038	0.040	0.012
College	0.004	-0.017	0.070	0.059	0.016
University or higher	0.011	-0.059	0.020	0.082	0.017
Income					
\$20,000-\$29,999	0.035	0.094	0.059	0.032	0.015
\$30,000-\$39,999	0.066	0.162	0.099	0.116	0.031
\$40,000-\$49,999	0.075	0.212	0.154	0.219	0.056
\$50,000-\$59,999	0.104	0.272	0.202	0.284	0.080
\$60,000-\$69,999	0.153	0.290	0.230	0.380	0.103
\$70,000 or more	0.248	0.419	0.300	0.519	0.180
Immigration Year					
1961-1970	-0.005	-0.023	-0.075	-0.014	-
1971-1980	-0.004	-0.086	-0.194	-0.056	-
1981-1990	0.004	-0.174	-0.263	-0.118	-
1991-1995	-0.008	-0.260	-0.339	-0.147	-
1996-2001	-0.024	-0.337	-0.467	-0.165	-
Industry					
Agriculture, forestry, fishing and hunting	0.020	0.081	-0.132	-0.124	0.020
Mining and oil and gas extraction	0.113	0.081	0.027	0.075	0.004
Utilities	0.118	0.161	0.036	0.258	0.018
Construction	0.000	0.059	0.047	0.050	0.008
Manufacturing	0.016	0.018	0.005	0.015	0.004
Wholesale trade	0.011	0.025	0.017	0.025	0.005
Retail trade	-0.001	0.018	0.014	0.055	0.001
Transportation and warehousing	0.049	-0.012	0.001	0.029	0.002
Information and cultural industries	0.008	0.005	0.006	0.025	-0.002
Finance and insurance	0.060	-0.042	0.074	0.038	0.007
Real estate and rental and leasing	0.043	-0.102	0.074	-0.018	-0.004
Professional, scientific and technical services	0.003	0.010	0.043	0.043	0.000
Management of companies and enterprises	-0.002	0.129	0.129	0.209	0.016
Administrative and support, waste management and remediation	-0.018	-0.056	-0.076	-0.019	-0.007
Educational services	-0.001	0.023	0.023	0.044	0.003
Health care and social assistance	0.026	-0.005	0.004	0.016	-0.001
Arts, entertainment and recreation	0.043	0.039	-0.003	-0.010	-0.001
Accommodation and food services	-0.026	-0.006	0.021	-0.030	-0.010
Other services	0.007	-0.001	-0.036	0.071	-0.000
CMA					
Halifax	0.001	0.001	-0.168	-0.077	0.000

Quebec	-0.017	-0.120	-0.349	-0.060	-0.002
Montreal	-0.013	-0.147	-0.355	-0.082	-0.009
Sherbrooke and Trois-Rivieres	0.023	-0.173	-0.344	-0.130	-0.000
Ottawa-Hull	-0.005	-0.070	-0.262	-0.685	-0.004
Oshawa	0.058	0.051	0.013	0.185	0.008
Toronto	-0.010	-0.067	-0.163	-0.030	-0.007
Hamilton	0.011	-0.032	-0.238	0.049	0.003
St. Catharines-Niagara	0.028	0.103	-0.097	0.111	0.018
Kitchener	0.059	-0.069	-0.248	0.032	0.002
London	0.001	-0.053	-0.252	0.096	0.001
Windsor	0.016	0.054	-0.182	0.043	0.020
Sudbury and Thunder Bay	0.005	0.069	0.040	-0.065	0.010
Winnipeg	0.007	-0.028	-0.035	0.095	0.009
Regina and Saskatoon	0.005	-0.009	-0.090	0.030	0.015
Calgary	0.008	0.070	0.054	0.113	0.010
Edmonton	-0.000	-0.002	-0.051	0.052	0.005
Vancouver	-0.015	-0.085	-0.014	-0.018	-0.006
Estimated probabilities of reference person	0.041 ¹	0.421 ²	0.603 ³	0.193 ⁴	0.030 ⁵

Notes:

1. The reference person of USA immigrants for calculating marginal effects refers to a single male aged 15-24 with the household size of one person and education level of University or higher, who earns less than \$20,000, works in Public Administration, and lives in Victoria.
2. The reference person of European immigrants for calculating marginal effects refers to a married male aged 15-24 with the household size of one person and education level of less than Grade 13, who earns less than \$20,000, works in Public Administration, and lives in Victoria.
3. The reference person of Asian immigrants for calculating marginal effects refers to a married male aged 15-24 with the household size of one person and education level of less than Grade 13, who earns less than \$20,000, works in Public Administration, and lives in Victoria.
4. The reference person of other region immigrants for calculating marginal effects refers to a married male aged 15-24 with the household size of one person and education level of less than Grade 13, who earns less than \$20,000, works in Public Administration, and lives in Victoria.
5. The reference person of non-immigrants for calculating marginal effects refers to a single Canadian-born male aged 15-24 with the household size of one person and education level of less than Grade 13, who earns less than \$20,000, works in Public Administration, and lives in Victoria.