

**Will small regions become immigrants' choices of residence in the
future?**

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Abstract

With Statistics Canada's 2011 National Household Survey (NHS) public use microdata (PUMF), this paper searches for the determinants of immigrants' location choices within Canada. The paper focuses particularly on the distinction between small regions and other regions. The small regions are defined in two ways: *small city* (regions other than the main metropolitan areas), and *small province* (provinces other than the main immigration destination provinces of Ontario, Quebec, British Columbia and Alberta). Many factors are taken into account, such as age, education, gender, and language. Some main conclusions are that older people tend to live in large areas, and that immigrants who cannot speak at least one official language are less likely to live in small regions. The paper also looks at economic performances by comparing wage gaps between immigrants and Canadian-born workers in small and large areas. Although immigrants are less likely to live in small regions, they tend to perform relatively better in those regions, compared to their Canadian-born counterparts. Therefore, small regions might be a better choice for immigrants in the future. This research may be useful for the policy planning of the small regions' governments.

1. Introduction

Nowadays, because of the phenomena of low fertility and population aging, many businesses in Canada are facing a shortage of labour. This problem is even more serious in the less populated provinces or regions, where there is also out-migration of part of the population. Furthermore, most international migrants have historically chosen the large provinces of Ontario, Quebec, British Columbia, and more recently Alberta, and the large metropolitan areas within those provinces, such as Toronto, Montreal and Vancouver. Policy makers have gradually realized that a shortage of labour can harm the economy, and that immigrants can help to make up for this shortage. Therefore, they have made efforts to ensure that there is a welcoming environment for all the immigrants in all the regions, including the smaller ones.

The Provincial Nominee Program (PNP) is an example of such a policy. It was first introduced by Manitoba in 1996, and other provinces followed. The program was implemented in order to redistribute geographically immigrants within Canada. The program allows provinces to make policies and to set goals separately from those of the federal government in order to select the kinds of immigrants that they need, therefore addressing the problem of labour shortages in some occupations. PNP also provides an incentive for immigrants to move to less-populous regions by establishing criteria that can more easily be met and by providing shorter processing time.

This paper tries to examine the factors that affect immigrants' choices to live in small regions and the effects of such choices on wages. In the first model, I search for the relationships between willingness to live in small regions and variables that may affect that choice, such as an immigrant's age, education level, place of birth, and years since immigration. I define small region in two ways: as provinces other than the major immigrant-receiving provinces (Ontario, Quebec, British Columbia and Alberta), and small cities as metropolitan areas with a small populations and regions which are not metropolitan areas. In the second model, I focus on the impact of

location on wages and look at the performance of immigrants in small and large regions by comparing the wage gap between immigrants and Canadian-born people.

With the Statistics Canada's 2011 National Household Survey (NHS) public use microdata file (PUMF), I get some of the following results: in the first model I find, among other things, that immigrants that are older, have higher education or have postsecondary education in Canada are less likely to stay in small regions. In the second model, I compare the wages of the immigrants and the Canadian-born people in small and large cities and provinces and find that immigrants can do better in small regions.

This paper is organized as follows. Section 2 surveys the literature that has examined immigrant settlement patterns within regions across Canada. In section 3, I provide some general information about the data and the samples that I use in my models. In section 4, two econometric models are presented: one for location in small regions, and one for wages. Section 5 presents the empirical results and I conclude by summarizing the major findings in section 6.

2. Literature review

This section provides some elements of the literature about immigrants' settlement patterns across Canada and a comparison of the personal characteristics of Canadian-born people and immigrants who live in small regions in Canada. In addition, I survey the literature that discusses the reasons why immigrants prefer to stay in the larger metropolitan areas and the actions taken by smaller regions to attract them. Researchers think that analyzing immigrants' performances in the new destinations is really important, since a redistribution of immigrants across regions could improve their economic performance. Researchers also looked at factors like age, knowledge of official languages, education, job opportunities, existence of co-ethnic group and workplace discrimination that determine where immigrants

choose to live. The purpose was to help governments implement the right policies to attract certain kinds of immigrants in the small regions. Bartel (1989) identifies three factors considered by immigrants in choosing where to live. First is the port of entry, which means that immigrants tend to live in place near airports or seaports. Second is the existence of co-ethnics groups such as family or friends. The last one is where the jobs are located. There are also studies that show that for people whose highest education is at the university level, there is a large wage gap between Canadian-born and immigrants. Immigrants in large cities earn less than their Canadian-born counterparts, while they can earn more in some small provinces like Newfoundland.

2.1 Studies on the location choices of immigrants

By analyzing data from the 2006 Statistics Canada Census of Population, Wong (2009) finds that only 5.3% of the immigrants chose to live in the rural areas of Canada in 2006. Even among those immigrants who want to live in the rural areas, most of them prefer to live in a rural area which is located in a large province instead of a small one. Asian-born new immigrants accounted for almost 58% of all the new immigrants to Canada in 2006, but immigrants in rural zones are mainly those born in the older traditional source regions of immigration, such as North America and Europe. Wong also finds that the reason why some rural regions have high shares of new immigrants is mainly because there are jobs there. British Columbia's rural areas have predominated over other provinces' rural areas with the highest share of immigrants, and that is mainly because it is one of the most popular retirement-destination regions. Two of Manitoba's predominantly rural regions have the highest share of immigrants because they have a lot of people with common Mennonite ethnic origin.

King (2009) uses the 2006 Statistics Canada Census of Population and notes that Ontario, British Columbia, Quebec and Alberta are the major provinces where immigrants chose to live in 2006. Among those provinces, Ontario is the most popular one. She says that immigrant concentration is due not only to the recently arrived, but also to some post-immigration internal migration patterns. She finds that

immigrants who arrived in the late 1970s and early 1980s have tended to migrate to larger cities, while some immigrants who arrived in the early 1990s would like to out-migrate from large cities like Toronto. In addition, she find that Ontario, British Columbia and Alberta have the largest proportions of university degree holders, while provinces like Newfoundland, Saskatchewan and New Brunswick have the lowest level of university-degree immigrants. She also mentions that settlement patterns vary across provinces, but that the areas with the lowest shares of well-educated immigrants are usually the smaller Census metropolitan areas (CMA).

By using the last six Canadian population censuses and annual immigrant inflow data from 1981 to 2009, Akbari (2011) made a regional analysis of immigrant's labour market performance in Atlantic Canada. In his paper, he says that governments will use several important predictors of an immigrant's performance in the labour market, such as age, education and knowledge of official languages when evaluating an applicant's intention to immigrate. He found that immigrants coming to Atlantic Canada are in general young, and that most of them are in the prime working ages. In addition, he found that immigrants in the small provinces are more likely to communicate in English or French, because they have fewer opportunities to work or communicate with their own communities in their native tongues. Because of the favourable immigration policies, such as the PNP program, immigrants no longer concentrate in a few large provinces. For example, Ontario receives the highest amount of immigrants each year among all provinces, but new immigrants have shifted from Ontario to other smaller regions recently, partly because of policies to attract them in the small provinces. In 1996, Ontario was home to about 11 newcomers per thousand residents, while in 2008 it received only 8.5 new immigrants per thousand residents. Therefore, more and more immigrants live in small provinces, where they can have optimal marginal product.

From a survey of Manitoba nominees' outcomes and experiences, Carter, Pandey and Townsend (2010) observe that the Manitoba PNP had a positive impact on labour market integration. Therefore, they argue that PNP can be used as a way for small

provinces to attract immigrants. By using data from Statistics Canada's Longitudinal Immigration Database (IMDB) and a special dataset directed by Tom Carter, they found that immigrants who want to leave Manitoba do so mostly because they think that there are fewer job opportunities and cultural offerings there; some leave because of the bad weather, or because they want to find opportunities to start their own businesses in a large city. Among all the factors that affect their decision to remain, job opportunity is the most important one. Other factors are the presence of people from the same ethnic group, language, family, cost of living, and safety.

Using Canadian Census Master Files from 1996 and 2001, King and Newbold (2007) examine the internal migration flows of immigrants in Canada as well as their characteristics. They focus mainly on the migration dynamics in Toronto, and find that the current distribution of immigrants can affect the choices of the new arrivals as to where to live. People tend to settle in places where there already are immigrants. They say that when new arrivals nowadays choose where to live, they usually consider factors like population composition, the presence of amenities, and economic opportunity. Presence of the same ethnic people can work to retain immigrants, since immigrants can rely on their assistance. They also find that immigrants tend to move out from provinces like the Atlantic Provinces and the Prairies into large provinces such as British Columbia, Alberta and Ontario, and that their migration responds to the differences in the wage, the labour force size, and the unemployment rate

With data drawn from public use files of the Canadian Censuses of 1981, 1986, 1991 and 1996, Grenier (2008) compares the internal migration patterns of immigrants with those of Canadian-born people. He thinks that when potential migrants appraise their costs and benefits of migrating, they not only consider factors like changes in income or job opportunities, but also some less tangible factors, like whether they have friends or relatives in a potential destination. Their choices about the area where they live are based on both the economic opportunities and the presence of an ethnic network. By analyzing some factors that he thinks can affect people's location choice

like age, marital status, education, language, and place of birth, he finds that in provinces where there are few immigrants, the out-migration rate of immigrants tends to be higher than that of the Canadian-born, while in provinces where there are originally many immigrants, the proportion of foreign-born people tends to increase. He also finds that compared with Canadian-born people, immigrants tend to move more over shorter distances, that is, they are more mobile at the local level (across Census subdivisions) but at a decreased rate as immigration year increases.

Hyndman, Schuurman and Fiedler (2006) use Statistics Canada Longitudinal Survey of Immigrants to Canada (LSIC) of 2003 to construct an index that ranks British Columbia's five medium-size cities in order to see the characteristics of the places in which immigrants consider to live when they arrive. The five cities that they choose are Victoria, Kelowna, Prince George, Prince Rupert and Nanaimo, which have different ranges of population sizes, climate conditions, and economic opportunities. By using the Multi-Criteria Evaluation (MCE) method, which tries to associate a high level of relevance between independent and dependent variables with a higher weight, they test the sensitivity of factors like employment, the presence of family members, education, and climate to immigrants' location choices. Their research shows that immigrants are attracted by cities where their friends or families live. In addition, both the population and immigrant size (total number of immigrants) of the city matter, since size is highly related to the attractiveness of a city. They also find that other factors like climate, employment opportunities, and lifestyle are essential for immigrants' choices. Immigrants aim to live in regions with good quality of life, good education, and job opportunities, which typically exist to greater extents in larger cities. They conclude that governments in small cities can attract immigrants by providing some extraordinarily attractive prospects, such as offering tax credits or exemptions. One more enforcement-oriented way might be to admit immigrants to Canada conditional on their agreement to live in smaller regions.

2.2 Studies involving wages

With the 2006 Statistics Canada Census of Population data, King (2009) finds that there is a large wage gap between Canadian-born and immigrants in Canada by looking at the wages of people whose highest education is university level. Immigrants only earn about 70.9% of their Canadian-born counterparts in large provinces where the greatest numbers of immigrants live, but in small provinces like Newfoundland, immigrants earn more than Canadian-born people. Therefore, immigrants in the provinces with the largest immigrant populations also have the largest income differentials. In addition, she finds that immigrants with university degrees living in small cities like Sudbury earn the same as or more than Canadian-born people, while in larger cities like Toronto, they earn less. She also finds that immigrants who arrived Canada before 1980 earn more than their Canadian-born counterparts, while immigrants who came after earn less. She then concludes that the wage disparity between immigrants and Canadian born people can disappear as time goes by and that the large wage gap may be due to language, discrimination against visible minorities and lack of foreign credential recognition.

With the help of microdata obtained from the 1996 and 2000 censuses, Akbari and Aydede (2011) make a comparison between regional immigrants' economic performances in Canada by analyzing wage differentials between immigrants and Canadian-born people in different regions. They make the assumption that immigrants can perform better in provinces that have lower immigrant presence than is the case nationally. They find that the wage gap between immigrants and non-immigrants rose in almost all Canadian regions except for the Atlantic Provinces, in which case immigrants earn more in both periods. They say that the productivity characteristics of immigrants were more devalued in larger regions than in small ones. They also find that educational attainment plays a very important role in an immigrant's wage level, and that it is the characteristic that is the least devalued, while pre-arrival post schooling experience is the most devalued. The results show that an additional year in Canada is valued strongly in favour of immigrants. They

then conclude that immigrants perform better than their Canadian-born counterparts in small labour markets, because immigrants in small provinces have better productivity characteristics than immigrants in large provinces.

An analysis by RBC Economics (2011) searches for the factors that explain the large wage gap between immigrants and Canadian-born people by using the 2006 Census Public Use Microdata file. They found that immigrants working full time in 2005 earn about 2% less than the average Canadian-born workers. Immigrants of working ages are more likely to live in large cities where earnings tend to be higher, and immigrants are more likely to have a university degree than Canadian-born people. An interesting finding is that there seems to be a higher wage gap in large cities, where more immigrants locate. The study indicates that the large wage gap is possibly due to differences in education quality, language skills, discrimination, lack of credential recognition and mismatch in skills. In the end, they point out that there are still large opportunities to improve immigrants' performances in Canada, and that this can be achieved through integration initiatives, such as extensive language training and faster credential recognition.

With data from the Longitudinal Administrative Databank (LAD), Bernard (2008) looks at the characteristics of immigrants living in Canadian rural regions. By checking the initial income gap between Canadian-born people and immigrants, as well as the rate at which the income gap narrows, he finds that immigrants generally earn less than their Canadian-born counterparts in both large and small areas, but that the income gap is smaller in less-urbanized areas. He says that in large urban areas, the initial income gap between immigrants and Canadian-born people is about 37%, while in small urban areas, the initial gap is only 14%. In small towns and rural areas, immigrants' average income in their first year of permanent residence can even be 4% higher than the one of their Canadian-born counterparts. In addition, he finds that most immigrants in small areas, that is, areas with low population density, come from Europe and the United States, while immigrants in the large regions mostly come mainly from Asia. He also finds that in larger regions, immigrants who come from the

United States and Oceania integrate better. Furthermore, although it is difficult to clearly define factors that account for immigrants' better performances in small areas, factors like recognition of education obtained abroad, lack of job opportunities, and language ability do slow down economic integration, and other factors like reception by the community and discrimination seem to play a role too.

To summarize, more immigrants prefer to live in large areas than in small ones, which leads to a potential shortage of labour in many small regions. Therefore, researching factors that may affect an immigrant's location choice is useful for governments to make right policy decisions. According to the previous research, factors like age, education, years since immigration and language ability all play an important role in determining an immigrant's location choice. Furthermore, immigrants in small regions seem to perform better than those living in large regions. In some small provinces, immigrants can even do better than their Canadian-born counterparts. In the rest of this paper, I will analyze with recent data the factors that are related to an immigrant's location choice, and I will make wage comparisons between immigrants and Canadian born people in small and large regions.

3. Data, Sample and Descriptive statistics

3.1 Data

I use in this paper data drawn from Statistics Canada's 2011 National Household Survey (NHS) public use microdata file (PUMF) on individuals. The complete data includes 887,012 records, representing about 2.7% of the Canadian population. Among those records, there are 189,412 immigrants and 687,958 Canadian-born people. Immigrants are 21.4% of the population.

3.2 Sample

The first analysis of this paper focuses on the factors that affect immigrants' location choice, so I drop all the non-immigrants, the non-permanent residents, and immigrants who report that they were born in Canada (a very small number). In addition, I assume that people younger than 20 years old cannot make independent decisions as to where to live, and I also drop them from my sample. After I drop the missing values of the independent variables in the model, there are 151,835 immigrants left in my sample.

In the second analysis, I focus on the impact of location on wages, and look at the performance of immigrants in small and large regions by comparing the wage gap between immigrants and Canadian-born people. Therefore, I include both immigrants and Canadian-born people and exclude only the non-permanent residents. In addition, I drop those immigrants who report that they were born in Canada, as well as those Canadian-born individuals who report that they were born outside Canada (a small number). Furthermore, I choose people from 20 to 64 years old, which are considered to be the working-age population. I drop some extreme values of the wage variable that are below 500 dollars or more than 200,000 dollars per year, as well as the missing values of the variables that I use. With all of the restrictions above, there are total of 373,387 observations left in the second model, out of which immigrants account for 20.5%.

3.3 Some descriptive statistics

3.3.1 Location Choice Model

This paper defines small regions in two ways: *small city* and *small province*. I define

the small cities as the regions not in metropolitan areas as defined by the Census (code 999 for the variable CMA in the codebook) as well as the smaller metropolitan areas of Moncton, Saint John, Sherbrooke, Trois-Rivières, Kingston, Peterborough, Greater Sudbury, Thunder Bay, Kelowna and Abbotsford. The larger metropolitan areas that are not in the small city group are Halifax, Quebec, Montreal, Ottawa, Gatineau, Oshawa, Toronto, Hamilton, St. Catherines, Niagara, Kitchener, Cambridge, Waterloo, London, Windsor, Brantford, Guelph, Barrie, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver and Victoria. All the provinces except Ontario, British Columbia, Quebec and Alberta are defined as the small provinces. In order to verify the robustness of my results, I also tested small changes in the definition of small city by first adding Kitchener-Cambridge-Waterloo and Brantford, and then further adding Windsor and Oshawa in the definition of the small cities. The main results of the analysis are robust to that change in definition. In addition, I made some changes to the definition of small province too. After I exclude Alberta from the definition, I obtain results that are almost the same as those for which Alberta is included. Therefore my results are robust.

Table 1 presents some summary statistics for the number and proportion of immigrants and Canadian-born people over 20 years old living in small and other cities. The numbers presented in this table and the following ones are those in the sample, but not for the whole population (the sample accounts for about 2.7% of the population).

Table 1: Number and Proportion of Immigrants and Canadian-born People in Small and Other Cities

| Metropolitan area (2011) | Immigrant | | Canadian-born | |
|---------------------------------|-----------|------------|---------------|------------|
| | Freq. | Percentage | Freq. | Percentage |
| A. Small Cities | 12,316 | 8.1% | 212,162 | 43.6% |
| B. Other Cities | | | | |
| Montreal | 20,715 | 13.6% | 57,539 | 11.8% |
| Toronto | 64,163 | 42.3% | 48,086 | 9.9% |
| Vancouver | 22,543 | 14.9% | 24,423 | 5.0% |
| Other CMAs | 32,098 | 21.1% | 145,044 | 29.7% |
| Subtotal (Other cities): | 139,519 | 91.9% | 275,092 | 56.4% |
| Number of Observations | 151,835 | 100.0% | 487,254 | 100.0% |

In 2011, out of 151,835 immigrants in the sample, only 8.1% lived in small cities, while 43.6 percent of the Canadian-born people lived there.

Most immigrants live in the large metropolitan areas. For example, 13.6% live in Montreal, 14.9% live in Vancouver, and a large percentage of 42.3% live in Toronto. The percentages of Canadian-born people who live in the two kinds of cities, however, are very different. For instance, 11.8% live in Montreal, 5% live in Vancouver and 9.9% live in Toronto.

Table 2 shows the numbers and proportions of immigrants and Canadian-born people over 20 years old living in small and large provinces.

Table 2. Number and Proportion of Immigrants in Small and Large Provinces

| Province | Immigrant | | Canadian-born | |
|-------------------------------|-----------|------------|---------------|------------|
| | Freq | Percentage | Freq | Percentage |
| A. Small Provinces | 4,839 | 3.2% | 75,767 | 15.6% |
| B. Large Province | | | | |
| Quebec | 21,865 | 14.4% | 137,504 | 28.2% |
| Ontario | 84,456 | 55.6% | 162,565 | 33.4% |
| Alberta | 13,162 | 8.7% | 52,935 | 10.9% |
| British Columbia | 27,513 | 18.1% | 58,483 | 12.0% |
| Subtotal: | 146,996 | 96.8% | 411,487 | 84.5% |
| Number of Observations | 151,835 | 100.0% | 487,254 | 100.0% |

Again, most of the immigrants live in the large provinces of Quebec, Ontario, Alberta and British Columbia. The table shows that 8.7% of immigrants lived in Alberta and 14.4% lived in Quebec in 2011. Immigrants who live in British Columbia account for about 18.1% of the whole immigrant pool in Canada, and Ontario accounts for an even higher percentage of 55.6%.

Compared with the number of immigrants, more Canadian-born people live in small provinces. For instance, 15.6% of Canadian-born people live in small provinces. In addition, 28.2% live in Quebec, 10.9% live in Alberta, 12% live in British Columbia, and 33.4% live in Ontario.

In summary, table 2 shows that the very large majority of immigrants live in the large

provinces; 96.8% to be exact, while only 3.2% of immigrants live in small provinces. Compared with those immigrants, more Canadian-born people live in small provinces, while fewer people live in large provinces like Ontario and British Columbia. Therefore, whether I define a small region as a small city or a small province, few immigrants live in those regions, in spite of the fact the governments of those regions often strive to devise policies to attract newcomers in order to meet labour demand.

The following tables show some characteristics of immigrants living in small and other regions. Table 3 presents the number and percentage of immigrants born in different countries in small and other cities, and table 4 shows the same figures in small and large provinces.

Table 3. Place Of Birth for Immigrants in Small versus Other Cities

| Place of Birth | Small Cities | | Other Cities | |
|--------------------------------------|---------------------|-------------------|---------------------|-------------------|
| | Freq. | Percentage | Freq. | Percentage |
| US | 1,396 | 11.3% | 3,126 | 2.2% |
| Central & North America | 576 | 4.7% | 10,161 | 7.3% |
| South America | 233 | 1.9% | 6,097 | 4.4% |
| UK | 3,398 | 27.6% | 9,419 | 6.8% |
| Northern & Western Europe | 3,106 | 25.2% | 7,155 | 5.1% |
| Eastern Europe | 725 | 5.9% | 10,617 | 7.6% |
| Southern Europe | 979 | 7.9% | 14,059 | 10.1% |
| Africa | 209 | 1.7% | 9,579 | 6.9% |
| Western Asia | 109 | 0.9% | 9,485 | 6.8% |
| China | 127 | 1.0% | 12,877 | 9.2% |
| HK | 29 | 0.2% | 5,504 | 3.9% |
| Other Eastern Asia | 112 | 0.9% | 4,488 | 3.2% |
| Philippines | 296 | 2.4% | 9,755 | 7.0% |
| India | 725 | 5.9% | 12,289 | 8.8% |
| Other Southern Asia | 175 | 1.4% | 13,978 | 10.0% |
| Oceania | 121 | 1.0% | 930 | 0.7% |
| Number of Observations | 12,316 | 100.0% | 139,519 | 100.0% |

In 2011, among the immigrants who lived in small cities, those from the United Kingdom, the United States and Northern and Western Europe constituted the largest proportions. About 11.3% of immigrants in small cities come from the United States, and around a quarter come respectively from Northern and Western Europe and from the United Kingdom. In the other cities, immigrants from the United States comprise

only 2.2% of all the immigrants, and immigrants from South America, Northern and Western Europe take a relatively smaller proportion compared with immigrants from Africa and from most of Asia. Immigrants from Southern Europe take the largest proportion, which is about 10.1% and those from China, India and other Southern Asia also account for large proportions, which are 9.2%, 8.8% and 10.0%.

Table 4. Place Of Birth for Immigrants in Small versus Large Provinces

| | Small Provinces | | Large Provinces | |
|--------------------------------------|-----------------|------------|-----------------|------------|
| | Number | Percentage | Number | Percentage |
| US | 391 | 8.1% | 4,131 | 2.8% |
| Central & North America | 227 | 4.7% | 10,510 | 7.1% |
| South America | 145 | 3.0% | 6,185 | 4.2% |
| UK | 656 | 13.6% | 12,161 | 8.3% |
| Northern & Western Europe | 420 | 8.7% | 9,841 | 6.7% |
| Eastern Europe | 407 | 8.4% | 10,935 | 7.4% |
| Southern Europe | 299 | 6.2% | 14,739 | 10.0% |
| Africa | 200 | 4.1% | 9,588 | 6.5% |
| Western Asia | 159 | 3.3% | 9,435 | 6.4% |
| China | 228 | 4.7% | 12,776 | 8.7% |
| HK | 34 | 0.7% | 5,499 | 3.7% |
| Other Eastern Asia | 55 | 1.1% | 4,545 | 3.1% |
| Philippines | 1,086 | 22.4% | 8,965 | 6.1% |
| India | 280 | 5.8% | 12,734 | 8.7% |
| Other Southern Asia | 248 | 5.1% | 13,905 | 9.5% |
| Oceania | 4 | 0.1% | 1,047 | 0.7% |
| Number of Observations | 4,839 | 100.0% | 146,996 | 100.0% |

At the provincial level, there are a total of 4,839 immigrants in the sample who live in small provinces. Among those, 13.6% come from the United Kingdom, and 22.4% come from the Philippines. Immigrants from Hong Kong account for only 0.7% of the total, and immigrants from other Eastern Asia account for about 1.1%. In large provinces, immigrants from Southern Europe take the largest proportion, which is about 10.0%, while immigrants from the United States account for only 2.8%, which is lower than the percentage of immigrants from most of the developing countries.

Compared with table 3, in large regions, immigrants from Southern Europe and Other Southern Asia account for relatively larger proportions, while immigrants from Oceania and the United States account for a smaller proportion. In small regions, immigrants from the United States, the United Kingdom and Northern and Western Europe account for a larger proportion than immigrants from most of the developing countries.

A puzzling fact is that immigrants from the Philippines account for a large proportion in small provinces, while that was not the case in the small cities. From the table 3 and 4, there are a total of 10,051 immigrants from the Philippines in my sample in 2011. Among those immigrants, 10.8% live in small provinces, while only 2.9% live in small cities. This is mostly because a large proportion of them live in a region that does not belong to a small city but belongs to a small province. Specifically, Winnipeg, which is located in Manitoba, has the third largest Filipino community in Canada.

Table 5 presents the age distribution of immigrants living in small and other cities.

Table 5. Distribution of Immigrants by age group in Small and Other Cities

| Age group | Small Cities | | Other Cities | |
|---------------------|--------------|------------|--------------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| 20-24 | 234 | 1.9% | 7,319 | 5.3% |
| 25-29 | 315 | 2.6% | 9,292 | 6.7% |
| 30-34 | 455 | 3.7% | 10,925 | 7.8% |
| 35-39 | 597 | 4.9% | 13,097 | 9.4% |
| 40-44 | 793 | 6.4% | 15,170 | 10.9% |
| 45-49 | 907 | 7.4% | 16,061 | 11.5% |
| 50-54 | 927 | 7.5% | 14,042 | 10.1% |
| 55-59 | 1,113 | 9.0% | 12,581 | 9.0% |
| 60-64 | 1,633 | 13.3% | 12,166 | 8.7% |
| 65-69 | 1,599 | 13.0% | 8,977 | 6.4% |
| 70-74 | 1,225 | 10.0% | 7,278 | 5.2% |
| 75-79 | 1,066 | 8.7% | 5,636 | 4.0% |
| 80-84 | 826 | 6.7% | 4,101 | 2.9% |
| Over 85 | 626 | 5.1% | 2,874 | 2.1% |
| Mean | 59.88 | | 50.03 | |
| Observations | 12,316 | 100.0% | 139,519 | 100.0% |

In small cities, about 13.3% of immigrants are aged from 60 to 64 years old, and 13.0% are aged from 65 to 69 years old, while in other cities, immigrants aged from 45 to 49 years old account for the largest proportion, at 11.5%. The average age of immigrants living in small cities is around 60 years old, while it is 50 years old for immigrants living in larger cities.

Table 6. Distribution of immigrants by age in Small and Large Provinces

| Age group | Small Provinces | | Large Provinces | |
|---------------------|-----------------|------------|-----------------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| 20-24 | 241 | 5.0% | 7,312 | 5.0% |
| 25-29 | 322 | 6.7% | 9,285 | 6.3% |
| 30-34 | 417 | 8.6% | 10,963 | 7.5% |
| 35-39 | 425 | 8.8% | 13,269 | 9.0% |
| 40-44 | 440 | 9.1% | 15,523 | 10.6% |
| 45-49 | 509 | 10.5% | 16,459 | 11.2% |
| 50-54 | 419 | 8.7% | 14,550 | 9.9% |
| 55-59 | 397 | 8.2% | 13,297 | 9.1% |
| 60-64 | 430 | 8.9% | 13,369 | 9.1% |
| 65-69 | 372 | 7.7% | 10,204 | 6.9% |
| 70-74 | 265 | 5.5% | 8,238 | 5.6% |
| 75-79 | 227 | 4.7% | 6,475 | 4.4% |
| 80-84 | 183 | 3.8% | 4,744 | 3.2% |
| Over 85 | 192 | 4.0% | 3,308 | 2.3% |
| Mean age | 51.5 | | 50.8 | |
| Observations | 4,839 | 100.0% | 146,996 | 100.0% |

From table 6, immigrants aged from 45 to 49 account for the largest proportion in small provinces, accounting for 10.5% of all immigrants there. Unlike in the previous table, there are no large differences in the distributions between small and large provinces. In large provinces, immigrants aged from 45 to 49 still account for the largest proportion, followed by immigrants aged from 40 to 44. On average, the mean ages of immigrants living in small and large province are almost the same.

Table 7: Other characteristics of Immigrants Living in Small versus Other Cities

| | Small City | | Other Cities | |
|--------------------------------|------------|------------|--------------|------------|
| | Freq. | Percentage | Freq. | Percentage |
| Female | 6,474 | 52.6% | 73,622 | 52.8% |
| Couple | 9,457 | 76.8% | 97,699 | 70.0% |
| Single | 628 | 5.1% | 21,197 | 15.2% |
| Kids | 3,875 | 39.8% | 81,100 | 58.1% |
| Postsecondary in Canada | 3,487 | 28.3% | 39,886 | 28.6% |
| Speak English/French | 12,002 | 97.5% | 128,631 | 92.2% |
| Number of observations | 12,316 | 100.0% | 139,519 | 100.0% |

Table 7 shows other characteristics of immigrants cross-tabulated by city size. In small cities, 52.6% of immigrants in the sample are females, and this percentage is almost the same in the other cities. In addition, 76.8% of immigrants living in small cities live in couples, while only 5.1% are single. In larger cities, 70.0% live in couples and 15.2% are single. Furthermore, most immigrants living in small cities do not have kids and do not have a postsecondary education in Canada, while in larger cities, most immigrants have at least one kid. Finally, the percentage of immigrants living in small cities who can speak at least one official language is 97.5%, compared to only 92.2% in other cities.

Table 8: Some Other Variables of Immigrants Living in Small versus Large Province

| | Small Provinces | | Large Provinces | |
|--------------------------------|-----------------|------------|-----------------|------------|
| | Freq. | Percentage | Freq. | Percentage |
| Female | 2,509 | 51.9% | 77,587 | 52.8% |
| Couple | 3,492 | 72.2% | 103,664 | 70.5% |
| Single | 651 | 13.5% | 21,174 | 14.4% |
| Kids | 2,432 | 63.4% | 82,543 | 56.2% |
| Postsecondary in Canada | 1,227 | 25.4% | 42,146 | 28.7% |
| Speak English/French | 4,644 | 96.0% | 135,989 | 92.5% |
| Number of observations | 4,839 | | 146,996 | |

The same characteristics are presented in Table 8 cross-tabulated by province. In small and large provinces, females and males account for almost the same proportions. Most immigrants living in small provinces live as couples, while only 13.5% are single. The share of couples living in large provinces is about 1.6 percentage points lower than the share of those living in small provinces. Furthermore, most immigrants in small provinces have at least one kid, and this percentage is 56.2% in the large provinces. Finally, only 25.4% immigrants received their postsecondary education in Canada but almost all of them can speak at least one official language. Compared with immigrants living in small provinces, those living in large provinces have a higher percentage that has postsecondary education in Canada. However, the proportion of immigrants who can speak at least one official language is lower in the large provinces.

3.3.2 Wage Model

In the second part of my paper, I include Canadian-born people in my sample, and after all of the restrictions have been applied, there are 373,387 observations left. Among them there are 76,390 immigrants and 296,997 Canadian-born individuals, accounting for 20.5% and 79.5% of the population, respectively. Among the immigrants, only a small part live in small regions. Table 9 shows the proportions of immigrants and Canadian-born workers from 20 to 64 years old who live in small regions.

Table 9. Number and Percentage of working-age People Living in Small Regions

| | Immigrants | | Canadian-born | | Total | |
|-----------------------|------------|---------|---------------|---------|---------|---------|
| | Freq | Percent | Freq | Percent | Freq | Percent |
| Small city | 4,179 | 5.5% | 120,299 | 40.5% | 124,478 | 33.3% |
| Small province | 2,470 | 3.2% | 45,076 | 15.2% | 47,546 | 12.7% |
| Total | 76,390 | | 296,997 | | 373,387 | |

There are 124,478 people in the sample who lived in small cities in 2011. Among those records, there are 4,179 immigrants, accounting for 5.5% of all the immigrants, while 120,299 Canadian-born people live in small cities, accounting for 40.5% of all of the Canadian-born people. As for the provinces, out of 76,390 immigrants in the sample, only 3.0% live in a small province, compared to 15.2% for the Canadian-born people. Canadian-born workers are clearly more likely to choose a small region as a place to live. I create two more tables in order to make a specific comparison of the characteristics of immigrants and Canadian-born workers living in small cities and small provinces. Table 10 compares some characteristics of immigrants and Canadian-born people living in small cities, while Table 11 compares the same characteristics in small provinces.

Table 10: Some Characteristics of working-age Immigrants and Canadian-born People Living in Small City

| | Immigrant | | Canadian-born | |
|--------------------------------|-----------|------------|---------------|------------|
| | Number | Percentage | Number | Percentage |
| Female | 2,037 | 48.7% | 58,432 | 48.6% |
| Couples | 3,585 | 85.8% | 82,352 | 68.5% |
| Single | 302 | 7.2% | 26,779 | 22.3% |
| Kids | 2,251 | 53.9% | 67,593 | 56.2% |
| Postsecondary education | | | | |
| in Canada | 1,532 | 36.7% | 72,890 | 60.6% |
| Full time work in 2010 | 3,425 | 82.0% | 100,361 | 83.4% |
| Part time work in 2010 | 754 | 18.0% | 19,938 | 16.6% |
| Number of observations | 4,179 | | 120,299 | |

There are a total of 124,478 observations in small cities, 3.4% of them being immigrants, and 96.6% of them being Canadian-born people. About 48.7% of the immigrants in small cities are female, compared with 48.6% of Canadian-born people. From table 10, one can see that 85.8% of immigrants live in couples, and only 7.2% of immigrants there are single. As for the Canadian-born people living in small cities, 68.5% live as a couple, while 22.3% are single. About 56% of the Canadian-born workers there have at least one child, and this proportion is 53.9% for immigrants in small cities. Around 36.7% of immigrants living in a small city received postsecondary education in Canada, while for Canadian-born people this percentage is 60.6%. The percentage of immigrants and Canadian-born people working full time in 2010 are 82.0% and 83.4%, respectively.

Table 11. Some characteristics of working-age Immigrants versus Canadian-born people living in Small Provinces

| | Immigrant | | Canadian-born | |
|--------------------------------|-----------|------------|---------------|------------|
| | Freq. | Percentage | Freq. | Percentage |
| Female | 1,145 | 50.5% | 22,460 | 51.4% |
| Couple | 1,881 | 75.5% | 30,182 | 66.1% |
| Single | 410 | 16.8% | 10,833 | 23.9% |
| Kids | 1,586 | 62.8% | 25,050 | 53.8% |
| Postsecondary in Canada | 755 | 27.7% | 27,288 | 56.0% |
| Full time work in 2010 | 2,044 | 64.5% | 38,115 | 69.3% |
| Part time work in 2010 | 426 | 14.1% | 6,961 | 13.4% |
| Number of observations | 2,470 | | 45,076 | |
| Total: | 47,546 | | | |

Out of 47,546 people living in a small province, 5.2% are immigrants, and 94.8% are Canadian-born people. Females and males living there account for almost the same proportions. Around 75.5% of immigrants living there live as couples. The percentage of immigrants and Canadian-born people working full time or part time in 2010 are almost the same too.

Table 12 presents the mean wages of 20 to 64 year-old immigrants and Canadian-born peoples in small cities and other regions in 2010.

Table 12. Mean Wage of Immigrants versus Canadians in Small Cities and Other Areas in 2010

| | Immigrant | Canadian |
|-------------------------------|-----------|----------|
| Small city | 45,870 | 41,575 |
| Other areas | 43,170 | 47,604 |
| Number of observations | 76,390 | 296,997 |

In 2010, Immigrants' mean wage in small cities is 45,870 dollars a year, while Canadian-born peoples' mean wage is 41,575 dollars a year, which is less than for immigrants. In larger cities, immigrants earn an average of 43,170 dollars per year, while Canadian-born people earn 47,604 dollars, which is higher than it is for immigrants. Furthermore, compared with the larger cities, the immigrants' average wage in small cities is higher, and this is possibly the result of provincial nominee programs, which help employers to fast-track skilled immigrants. All in all, immigrants can do better in small cities.

Table 13. Mean Wage of Immigrants and Canadian-born People in Small and Large Provinces in**2010**

| | Immigrant | Canadian |
|-------------------------------|-----------|----------|
| Small province | 39,332 | 41,622 |
| Large province | 43,451 | 45,796 |
| Number of observations | 76,390 | 296,997 |

In 2010, both immigrants and Canadian-born people earned more in large provinces than in small provinces, and Canadian-born people earned more than immigrants. Immigrants' average wage is 39,333 dollars per year in small provinces and 43,451

dollars in large provinces, while the average wage is 41,622 and 45,796 dollars respectively for Canadian-born people. The wage gap between immigrants and Canadian born people is around 2,290 dollars in small provinces, while in large provinces, the wage gap reaches 2,345 dollars.

To sum up, the wage gap between immigrants and Canadian-born people is smaller in small regions. Therefore, immigrants can do better in small regions.

4. Econometric Models

4.1 Location choice Model

I estimate two models in my paper. The first one deals with the factors that affect an immigrant's location choice, and I focus my attention on the decision to locate in small cities and small provinces, as opposed to the larger cities and provinces. I use the linear probability model since the dependent variable is a dummy variable, which I estimate with the ordinary least squares technique. Therefore my first econometric model takes the form:

$$\text{Dependent Variable}_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \varepsilon_i \quad (1)$$

where ε_i is the error term for person i , which includes all the other factors that affect people's location choice. *Dependent Variable* refers to two outcomes: 1) Small city; 2) Small province. In addition, since the dependent variable takes the values of zero and one, I also use a probit model to carry out the regression analyses.

4.1.1 Dependent Variable:

In the paper, I use Census Metropolitan area of Current Residence and Province or

territory of current residence as the dependent variable. The small cities are those already defined (Moncton, Saint John, Sherbrooke, Trois-Rivières, Kingston, Peterborough, Greater Sudbury, Thunder Bay, Kelowna Abbotsford and regions not in selected metropolitan areas), and the small provinces are the ones other than Ontario, British Columbia, Quebec and Alberta, which are those with the largest populations. Both small city and small province are dummy variables which are equal to 1 if immigrant i lives there and equal to 0 otherwise.

4.1.2 Independent Variables:

I divide the independent variables into five categories: demographic, education, immigration and citizenship, family, and language. X_{1i} refers to demographic variables for person i . X_{2i} refers to education variables for person i . X_{3i} refers to the Immigration and citizenship variables. X_{4i} and X_{5i} refer to family variables and the language variable respectively.

Demographic Variables:

The demographic variables include age, marital status, and sex. In the codebook, age is defined in categories, so I set each five-year age group starting from and ranging up to 20 to immigrants older than 85 years old as a dummy variable which is equal to 1 if person i is in that group and equal to 0 otherwise. I divide marital status into four categories: *SINGLE* refers to people never legally married; *COUPLE* refers to people legally married or living common law; *SEPARATED* is defined as people separated or divorced and not living common law; and *WIDOWED* means widowed people that are not living common law. All of these variables are dummy variables which are equal to 1 if person i belongs to that category and equal to 0 otherwise. Here I use immigrants who are single as the reference group. Sex is also a dummy variable,

which is equal to 1 if person i is female and equal to 0 if that person is male.

Education Variables:

The education variables include the number of years of education, the number of years of education squared, the major field of study (based on the CIP Canada 2011), and the location of study. I calculate the number of years of education based on people's highest degree. For example, I define people with no certificate or degree as receiving 8 years of education, and people whose highest education level is college or other non-university certificate from a program over 1 year as receiving 14 years of education. Appendix A1 provides people's highest degree level and the corresponding number of years. I also include education squared as a regressor in order to see how the impact of the quadratic years of education on immigrant's location choice changes with the education level.

Major field of study is regarded as a proxy of an immigrant's occupation. Since many people older than 64 years old retire and do not have an occupation at all, it is reported as missing value in those cases. I aggregate the major field of study into four categories: Arts (people major in education, visual and performing arts, communications technologies and humanities); Social Science and business (which includes Social and behavioural sciences, law, business, management and public administration); Technology (which includes Physical and life sciences, technologies, Mathematics, computer, information sciences, Architecture, engineering and related technologies); Health and other fields of study (which includes Agriculture, natural resources, conservation, health and related fields, personal, protective and transportation services and other). I use immigrants with no postsecondary certificate, diploma or degree as the reference group.

The location of study is defined as the territory (in Canada) or country (outside Canada) of the institution from which the highest postsecondary degree was obtained. In this paper, I define it as a dummy variable, which is equal to 1 if people obtained the highest degree in Canada, and equal to 0 if people did not obtain their highest postsecondary degree in Canada.

Immigration and Citizenship Variables:

The immigration and citizenship variables include years since immigration, years since immigration squared, and place of birth. Years since immigration is regarded as a continuous variable in this paper and can be calculated by using 2011 minus the year immigrants first obtained his or her landed immigrant or permanent resident status. The year of immigration is recorded as a period instead of a specific year when an immigrant comes before 1989. In such circumstances, I calculate years since immigration by using 2011 minus the midpoint of the period corresponding. I also include years since immigration squared in the model to see how the effect of this variable changes over time.

I combine people's place of birth into 16 categories in order to capture the effect of source country. All the 16 variables are dummies that are equal to 1 if a person is born in that country and equal to 0 otherwise. Those 16 variables are: United States; Central America and Caribbean (which includes Central America, Jamaica, Other Caribbean and Bermuda); South America; United Kingdom; Northern and Western Europe (which includes Germany and Other Northern and Western Europe); Eastern Europe (which includes Poland and Other Eastern Europe); Southern Europe (which includes Italy, Portugal and other Southern Europe); Africa (which includes Eastern Africa, Northern Africa and other Africa); West Asia (which includes West Central Asia and the Middle East); China; Hong Kong; Other Eastern Asia; Philippines; India;

Other Southern Asia (which includes Other Southeast Asia, Pakistan and Other Southern Asia); Oceania (which includes Oceania and others). Here I drop those people who were born in Canada, since I only focus on immigrants in my first model, and I use people born in the United States as the reference group.

Family Variable:

The family variable refers to whether any children are present in a census family. It is a dummy variable that is equal to one if people have at least one child and to zero otherwise. Families with children tend to choose a larger region like Toronto and Vancouver where their children are expected to get better education.

Language Variable:

The language variable refers to the ability of a person to conduct a conversation in at least one official language. This is a dummy variable that is equal to 1 if people can speak at least one official language and equal to 0 otherwise.

4.2 Wage Model

In the second regression model, I consider factors that affect wages and look at the wage gap between immigrants and Canadian born people living in small and in other regions. In addition, I look at the extent to which each factor affect wages and make a comparison of the impact of those factors between immigrants and Canadian-born people living in small regions. Instead of just using data for immigrants in my sample, I also keep data of Canadian-born people and exclude individuals over 64 years old. In addition, I add some new exogenous variables in this model. The second econometric model takes the form:

$$\begin{aligned}
LWAGES_i = & \alpha_0 + \alpha_1 smallregions_{1i} + \alpha_2 demographic\ Variables_{2i} + \\
& \alpha_3 education\ variables_{3i} + \alpha_4 Immigration\ variables_{4i} + \\
& \alpha_5 Family\ variable_{5i} + \alpha_6 Language\ variable_{6i} + \alpha_7 X_{7i} + (\alpha_8 X_{8i}) + \mu_i \quad (2)
\end{aligned}$$

where $LWAGES_i$ refers to the log wage of person i , X_{7i} refers to labour market variables, and X_{8i} refers to geographic variables (included in the model only when the *smallregions* variable represents small cities). μ_i is the term error for this model, and it includes the influence of all the other variables that affect wage levels.

4.2.1 Dependent Variable

I use log wage and exclude some extreme values (wage less than 500 dollars and wage more than 200,000 dollars annually).

4.2.2 Independent variables

Most of the variables I use in this model are the same as or just a little bit different from the ones included in the first model. Apart from these changes, I add some new explanatory variables.

Labour Market Variables:

The labour market variables are the number of full or part time weeks worked in 2010 and the log of the number of weeks worked in 2010. I define two dummy variables as people who worked full time and people who worked part time in 2010. Weeks worked is treated as a continuous variable in this paper. In the codebook, it is reported as intervals, while I simply use the midpoint of each interval as people's working weeks in 2010. Instead of using weeks worked, I use log value of it in order to get the elasticity of the wage with respect to the length of the working week in 2010.

Geographic Variable

The geographic variable refers to the province in which people live and wages can surely be affected by the province of residence. This variable is used only when the *smallregion* variable in the model represents small city since small city in different provinces can have different wages. But when the *smallregion* variable represents small province, geography variable cannot be used since I cannot include separate regressors for provinces and small regions, as there would be a problem of collinearity in the model. I divide the provinces into five groups and specify them all as dummy variables: Atlantic Canada (which includes Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick); Quebec; Ontario; Prairies (which includes Manitoba, Saskatchewan and Alberta); British Columbia. I use people living in Ontario as the reference group.

Other Exogenous Variables:

Smallregions refers to two outcomes: 1) small city. 2) small province. I include this variable to compare wage of immigrants and Canadian-born people between small regions and other areas. It is a dummy variable that is equal to 1 if people live in a small region.

5. Empirical results

5.1 Results for location choice model

The first model aims to discern factors that have an impact on an immigrant's location choice. The first part uses small city as dependent variable, while in the second part, small province is the dependent variable.

5.1.1 Results for City choice

Table 14 presents results of the independent variables' effects on immigrant's location choice. I first use a linear specification and, in order to account for heteroscedasticity, all the regression results are presented with robust standard errors. As mentioned earlier, a probit model is also estimated.

Table 14. Regression Results for an Immigrant's Choice to Live in a Small City

| | Dependent Variables: SMALLCITY | | | | | |
|------------------------------|--------------------------------|--------|------|-----------------------|--------|------|
| | OLS | | | Probit | | |
| | Coefficient estimates | s.e. | Sig. | Coefficient estimates | s.e. | Sig. |
| Independent Variables | | | | | | |
| Demographic variables | | | | | | |
| Age | | | | | | |
| <i>Reference: age20-24</i> | | | | | | |
| Age 25-29 | -0.0181 | 0.0028 | *** | -0.2334 | 0.0442 | *** |
| Age 30-34 | -0.0239 | 0.0030 | *** | -0.2267 | 0.0427 | *** |
| Age 35-39 | -0.0257 | 0.0031 | *** | -0.2421 | 0.0417 | *** |
| Age 40-44 | -0.0266 | 0.0031 | *** | -0.2480 | 0.0412 | *** |
| Age 45-49 | -0.0318 | 0.0032 | *** | -0.3117 | 0.0415 | *** |
| Age 50-54 | -0.0326 | 0.0033 | *** | -0.3256 | 0.0420 | *** |
| Age 55-59 | -0.0365 | 0.0036 | *** | -0.3530 | 0.0426 | *** |
| Age 60-64 | -0.0369 | 0.0039 | *** | -0.3598 | 0.0427 | *** |
| Age 65-69 | -0.0295 | 0.0046 | *** | -0.3422 | 0.0439 | *** |

| | | | | | | |
|---------------------------------|---------|--------|-----|---------|--------|-----|
| Age 70-74 | -0.0404 | 0.0049 | *** | -0.4020 | 0.0456 | *** |
| Age 75-79 | -0.0400 | 0.0055 | *** | -0.4272 | 0.0471 | *** |
| Age 80-84 | -0.0461 | 0.0064 | *** | -0.4718 | 0.0495 | *** |
| Age over 85 | -0.0420 | 0.0074 | *** | -0.4590 | 0.0522 | *** |
| Marital Status | | | | | | |
| <i>Reference: Single</i> | | | | | | |
| Couple | 0.0451 | 0.0019 | *** | 0.5078 | 0.0239 | *** |
| Separated | 0.0030 | 0.0027 | | 0.1482 | 0.0301 | *** |
| Widowed | 0.0277 | 0.0041 | *** | 0.3853 | 0.0314 | *** |
| Sex | | | | | | |
| <i>Reference: Male</i> | | | | | | |
| Female | -0.0009 | 0.0014 | | -0.0231 | 0.0116 | ** |
| Education | | | | | | |
| Variables | | | | | | |
| Education year | | | | | | |
| Years of education | -0.0101 | 0.0015 | *** | -0.0856 | 0.0119 | *** |
| Years of education ² | 0.0001 | 0.0001 | ** | 0.0011 | 0.0004 | *** |
| Major field of study | | | | | | |
| <i>Reference:</i> | | | | | | |
| <i>Non-postsecondary degree</i> | | | | | | |
| Arts | 0.0084 | 0.0033 | ** | 0.0829 | 0.0270 | *** |
| Social Science & business | -0.0006 | 0.0028 | | -0.0458 | 0.0239 | * |
| Technology | 0.0127 | 0.0029 | *** | 0.0640 | 0.0227 | *** |
| Health & Other fields | 0.0342 | 0.0033 | *** | 0.2441 | 0.0239 | *** |

| | | | | | | |
|---|---------|--------|-----|---------|--------|-----|
| Location of Study | | | | | | |
| <i>Reference:</i> | | | | | | |
| <i>Immigrants have postsecondary education outside Canada</i> | | | | | | |
| Postsecondary in Canada | -0.0091 | 0.0019 | *** | -0.0710 | 0.0160 | *** |
| Immigration variables | | | | | | |
| <i>Reference:</i> | | | | | | |
| <i>Non-immigrants</i> | | | | | | |
| Years since immigration | -0.0017 | 0.0002 | *** | -0.0034 | 0.0015 | ** |
| Years since immigration² | 0.0001 | 0.0000 | *** | 0.0002 | 0.0000 | *** |
| Place of Birth | | | | | | |
| <i>Reference: Born in US</i> | | | | | | |
| Central &North America | -0.2396 | 0.0071 | *** | -1.0785 | 0.0284 | *** |
| South America | -0.2529 | 0.0072 | *** | -1.2276 | 0.0364 | *** |
| UK | -0.0710 | 0.0078 | *** | -0.2903 | 0.0238 | *** |
| Northern &Western EU | -0.0459 | 0.0081 | *** | -0.2496 | 0.0248 | *** |
| Eastern Europe | -0.2359 | 0.0071 | *** | -1.0481 | 0.0277 | *** |
| Southern Europe | -0.2816 | 0.0071 | *** | -1.3223 | 0.0275 | *** |

| | | | | | | |
|--|---------|--------|-------------------------|---------|--------|-----|
| Africa | -0.2614 | 0.0069 | *** | -1.3963 | 0.0359 | *** |
| West Asia | -0.2681 | 0.0069 | *** | -1.6484 | 0.0433 | *** |
| China | -0.2721 | 0.0069 | *** | -1.7298 | 0.0416 | *** |
| HK | -0.2725 | 0.0069 | *** | -1.9427 | 0.0697 | *** |
| Other Eastern Asia | -0.2488 | 0.0072 | *** | -1.2697 | 0.0458 | *** |
| Philippines | -0.2545 | 0.0070 | *** | -1.2562 | 0.0330 | *** |
| India | -0.2333 | 0.0071 | *** | -1.0190 | 0.0280 | *** |
| Other Southern Asia | -0.2725 | 0.0069 | *** | -1.6600 | 0.0370 | *** |
| Oceania | -0.1896 | 0.0118 | *** | -0.7236 | 0.0553 | *** |
| Family Variable | | | | | | |
| Presence of children | | | | | | |
| <i>Reference: no children</i> | | | | | | |
| At least one children | -0.0257 | 0.0014 | *** | -0.2381 | 0.0126 | *** |
| Language Variable | | | | | | |
| Knowledge of official language | | | | | | |
| <i>Reference: Neither English Nor French</i> | | | | | | |
| English or French | 0.0217 | 0.0022 | *** | 0.1742 | 0.0298 | *** |
| F(43,151791) = 298.49 | | | Wald chi2(43)= 16218.94 | | | |
| R-Squared=0.1538 | | | Pseudo R-squared=0.2298 | | | |
| Number of obs=151835 | | | Number of obs=151835 | | | |

Note: All the standard errors reported in the table are robust standard errors. * stands for significant at 10%; ** stands for significant at 5%; *** stands for significant at 1%; No star stands for not significant.

The probit model can be used when the dependent variable is a dummy variable, and it avoids a potential problem caused by using the linear probability model. It might be a preferred method since it has assumptions that are less restrictive than the OLS assumptions, which are based on a continuous dependent variable. The probit model avoids the unboundness problem inherent to the OLS technique since it constrains predicted values to fall within the 0-1 interval. However, according to Hugo (2009), linear probability models have certain advantages over the probit model in spite of the unboundedness problem. OLS estimates might be more robust than probit model to specification errors since probit estimates are inconsistent unless the error term in the latent variable equation is truly normal. In this paper, I use the probit method to compare my results to the OLS ones. Although the coefficients of the two models are not comparable, the statistical significant levels are in most cases almost the same. Both the F-test and the Wald test show that the result is statistically significant, and all the variables that are significant using OLS method are also significant when I use Probit model. Furthermore, the signs of all the coefficients are the same no matter which method is used. Therefore, I will analyze the OLS results in my paper, which are much easier to interpret.

From Table 14, compared with the reference group of immigrants aged 20 to 24 years old, almost all the other age groups are less likely to live in a small city. For example, immigrants who are 35 to 39 years old are 2.6 percentage points less likely to live in a small city, while immigrants aged 70 to 74 years old are 4 percentage points less likely choose a small city in which to live. People in working ages tend to find a city where they have more opportunities. Older people may prefer to live in larger regions because they have relatives working there, and maybe they require extra care as they are getting older. Furthermore, larger cities usually have more welcoming environments to immigrants so they can find more old immigrants at those places

with whom they can establish ties. They can enjoy better access to recreation and services and attend more retirement community events in larger cities. In addition, mobility is an important factor that attracts old immigrants to larger cities since people aged over 65 years old are less likely to have vehicles and driver's licenses. They have to walk far to buy food and are more likely to suffer from social isolation.

Compared to those who are single, immigrants who are legally married or living common law are 4.5 percentage points more likely to choose a small city, and widows are 2.8 percentage points more likely to do the same. The coefficients of couples and widows are both statistically and economically significant, while the coefficient of separated people are not statistically significant. Couples are more likely to live in a small city perhaps because the cost of living is lower than in cities like Toronto or Vancouver.

The coefficient of female is not statistically significant, and I cannot reject the null hypothesis that gender has no effect on immigrant's location choice. The coefficient of years of education is -0.01, and coefficient of education squared is 0.0001. Both of them are statistically significant. One more year of education leads to a 1 percentage point decrease in the probability of living in a small city. Well-educated immigrants are usually ambitious and therefore are more likely to choose larger cities where they can obtain more opportunities. Besides, wages are lower in small cities, as will be shown in the second model in this paper, and it is certain that improvement of economic well-beings is a major motivation to migrate.

I use major field of study as a proxy for occupation, and use immigrants with no postsecondary education certificate as reference category. The regression results show that immigrants who were trained in fields related to Arts, technology, health and

Other fields like Agriculture, are more likely to live in small cities, while immigrants whose field is related to social sciences, business and public administration are not significantly different from people who have no postsecondary education in choosing where to live. According to the table, immigrants trained in Arts are 0.8 percentage points more likely to choose a small city, and immigrants trained in technology are 1.3 percentage points more likely. Those working in health and other fields like Agriculture and natural resources are 3.4 percentage points more likely to live in a small city. All of these might be a result of a highly competitive labour market in larger cities.

Whether or not an immigrant has his or her postsecondary education in Canada also has an impact on the location decision. Compared with those who do not have postsecondary education in Canada, immigrants who have their postsecondary education in Canada are less likely to live in small city, and this difference is around 0.9 percentage points. Immigrants who have their postsecondary education in Canada are more familiar with this country and they know where they should go to further their studies or obtain greater opportunities. If an immigrant has his or her postsecondary education in a large city with which he or she has already familiar, he or she tends to stay in that city where there are family or social ties. If an immigrant has a postsecondary education in a very small city, then after several years of study, he or she may want to relocate to larger cities in order to broaden horizons.

As the number of years since immigration increases, immigrants are less likely to live in a small city. One more year since immigration leads to a 0.2 percentage points decrease in the probability of living in a small city, and this effect increases by 0.01 percentage points per year as time goes by. These two coefficients are not economically significant.

Immigrants from different countries behave differently when choosing where to live. Compared with immigrants from the United States, immigrants from the rest of world are less likely to choose a small city. Immigrants from Central and North America are 23 percentage points less likely to live in small city and immigrants from South America are 25.3 percentage points less likely. Immigrants from mainland China and Hong Kong are about 27 percentage points less likely to live in small city. In contrast, immigrants born in the United Kingdom, in Northern and Western Europe are only 7.1 percentage points and 4.6 percentage points respectively less likely. Immigrants from America and the United Kingdom are very similar to Canadian-born people. As a former British colony, Canada was familiar and appealing. The primary language is English in these three countries, and the lifestyles and cultures are very similar. Therefore, immigrants from the United States and the United Kingdom can be accustomed to the new environment more quickly and therefore are more suitable to live in small cities than immigrants from other countries.

Whether or not an immigrant has children also matters in deciding in what kind of city to live. According to table 14, immigrants who have at least one child are 2.6 percentage points less likely to choose a small city. Combined with the result that I obtained above, which indicates that married immigrants prefer to live in small cities, I conclude that married immigrants prefer to live in small city before they have a child because they have to save money for children. Once they have a child, they tend to leave small cities and find larger cities in order to give their children a better life and academic environment.

The last variable that I analyze is language. The reason why immigrants may prefer to live in large cities like Toronto and Vancouver is mostly because of the preexistence of many immigrants from their own communities. Immigrants tend to choose a place

where there is a relatively high concentration of people from the same ethnic group because it is easier to live and to communicate. Language barriers are one of the most serious obstacles that are suffered by immigrants. That explains why the coefficients are positive for those who can communicate in English or French.

In summary, as immigrants get older, they are less likely to live in a small city because of family ties or inadequate facilities. Couples are more likely to stay in a small city, but after they have children, they will choose a larger region to live. Highly educated immigrants leave small cities partly because they are more ambitious and want to earn more. Immigrants whose occupation are related to Arts, technology, health or agriculture prefer to live in a small city, and among immigrants from all over the world, those from the United Kingdom and the United States prefer to live in small cities partly because of the similarity in language and lifestyle.

5.1.2 Results for Province Choice

Table 15 presents the results when the dependent variable is residing in a small province instead of in small city. I include the results of both the OLS and probit models.

Table 15. Regression results for an immigrant's choice to live in a small province

| | Dependent Variables: SMALLPROVINCE | | | | | |
|------------------------------|------------------------------------|--------|------|-----------------------|--------|------|
| | OLS | | | Probit | | |
| | Coefficient estimates | s.e. | Sig. | Coefficient estimates | s.e. | Sig. |
| Independent Variables | | | | | | |
| Demographic variables | | | | | | |
| Age | | | | | | |
| <i>Reference: age20-24</i> | | | | | | |
| Age 25-29 | 0.0007 | 0.0027 | | 0.0045 | 0.0404 | |
| Age 30-34 | 0.0013 | 0.0028 | | 0.0037 | 0.0404 | |
| Age 35-39 | -0.0041 | 0.0027 | | -0.0726 | 0.0409 | * |
| Age 40-44 | -0.0077 | 0.0027 | *** | -0.1196 | 0.0413 | *** |
| Age 45-49 | -0.0052 | 0.0027 | * | -0.0811 | 0.0409 | ** |
| Age 50-54 | -0.0076 | 0.0028 | *** | -0.1170 | 0.0425 | *** |
| Age 55-59 | -0.0084 | 0.0028 | *** | -0.1287 | 0.0437 | *** |
| Age 60-64 | -0.0117 | 0.0030 | *** | -0.1812 | 0.0452 | *** |
| Age 65-69 | -0.0112 | 0.0032 | *** | -0.1781 | 0.0476 | *** |
| Age 70-74 | -0.0168 | 0.0034 | *** | -0.2516 | 0.0508 | *** |
| Age 75-79 | -0.0177 | 0.0037 | *** | -0.2625 | 0.0539 | *** |
| Age 80-84 | -0.0195 | 0.0040 | *** | -0.3031 | 0.0575 | *** |
| Age over 85 | -0.0058 | 0.0049 | | -0.1760 | 0.0599 | *** |
| Marital Status | | | | | | |
| <i>Reference: Single</i> | | | | | | |
| Couple | 0.0062 | 0.0015 | *** | 0.0925 | 0.0233 | *** |
| Separated | -0.0013 | 0.0020 | | -0.0296 | 0.0336 | |

| | | | | | | |
|--|---------|--------|-----|---------|--------|-----|
| Widowed | 0.0057 | 0.0026 | ** | 0.0864 | 0.0369 | ** |
| Sex | | | | | | |
| <i>Reference: Male</i> | | | | | | |
| Female | -0.0031 | 0.0009 | *** | -0.0449 | 0.0141 | *** |
| Education Variables | | | | | | |
| Education year | | | | | | |
| Years of education | -0.0062 | 0.0011 | *** | -0.0923 | 0.0142 | *** |
| Years of education ² | 0.0002 | 0.0000 | *** | 0.0032 | 0.0005 | *** |
| Major field of study | | | | | | |
| <i>Reference:</i> | | | | | | |
| <i>Non-postsecondary degree</i> | | | | | | |
| Arts | -0.0082 | 0.0022 | *** | -0.1218 | 0.0338 | *** |
| Social Science & business | -0.0118 | 0.0019 | *** | -0.1840 | 0.0295 | *** |
| Technology | -0.0043 | 0.0020 | ** | -0.0678 | 0.0281 | ** |
| Health & Other fields | -0.0008 | 0.0023 | | -0.0121 | 0.0307 | |
| Location of Study | | | | | | |
| <i>Reference: Immigrants</i> | | | | | | |
| <i>have postsecondary</i> | | | | | | |
| <i>education outside Canada</i> | | | | | | |
| Postsecondary in Canada | 0.0011 | 0.0013 | | 0.0153 | 0.0198 | |
| Immigration variables | | | | | | |
| <i>Reference:</i> | | | | | | |
| <i>Non-immigrants</i> | | | | | | |
| Years since immigration | -0.0018 | 0.0001 | *** | -0.0233 | 0.0017 | *** |
| Years since immigration² | 0.0000 | 0.0000 | *** | 0.0005 | 0.0000 | *** |
| Place of Birth | | | | | | |

| | | | | | | |
|--|---------|--------|-----|---------|--------|-----|
| <i>Reference: Born in US</i> | | | | | | |
| Central & North America | -0.0624 | 0.0044 | *** | -0.6450 | 0.0396 | *** |
| South America | -0.0613 | 0.0046 | *** | -0.6204 | 0.0448 | *** |
| UK | -0.0409 | 0.0046 | *** | -0.3497 | 0.0337 | *** |
| Northern & Western EU | -0.0562 | 0.0046 | *** | -0.5295 | 0.0365 | *** |
| Eastern Europe | -0.0515 | 0.0045 | *** | -0.4750 | 0.0353 | *** |
| Southern Europe | -0.0758 | 0.0044 | *** | -0.8231 | 0.0380 | *** |
| Africa | -0.0650 | 0.0044 | *** | -0.6880 | 0.0402 | *** |
| West Asia | -0.0684 | 0.0044 | *** | -0.7685 | 0.0424 | *** |
| China | -0.0673 | 0.0044 | *** | -0.7380 | 0.0397 | *** |
| HK | -0.0728 | 0.0043 | *** | -1.0483 | 0.0672 | *** |
| Other Eastern Asia | -0.0693 | 0.0045 | *** | -0.8412 | 0.0583 | *** |
| Philippines | 0.0243 | 0.0052 | *** | 0.1534 | 0.0330 | *** |
| India | -0.0642 | 0.0044 | *** | -0.6659 | 0.0379 | *** |
| Other Southern Asia | -0.0662 | 0.0043 | *** | -0.7245 | 0.0383 | *** |
| Oceania | -0.0814 | 0.0046 | *** | -1.3047 | 0.1718 | *** |
| Family Variable | | | | | | |
| Presence of children | | | | | | |
| <i>Reference: no children</i> | | | | | | |
| At least one children | -0.0024 | 0.0010 | ** | -0.0460 | 0.0156 | *** |
| Language Variable | | | | | | |
| Knowledge of official language | | | | | | |
| <i>Reference: Neither English Nor French</i> | | | | | | |

| | | | | | | |
|-------------------|-----------------------|--------|-----|-------------------------|--------|----|
| English or French | 0.0043 | 0.0017 | *** | 0.0725 | 0.0345 | ** |
| | F(43,151791) = 49.87 | | | Wald chi2(43)= 3169.17 | | |
| | R-Squared=0.0259 | | | Pseudo R-squared=0.0741 | | |
| | Number of obs=151835 | | | Number of obs=151835 | | |

Note: All the standard errors in the table are robust standard errors. * stands for significant at 10%; ** stands for significant at 5%; *** stands for significant at 1%; No star stands for not significant.

Both the F-test for the OLS model and the Wald test for the probit model show that the regression is statistically significant, and all the signs for the variables that I use are the same no matter which method is used.

The results from table 15 are mostly similar to those of table 14, which means that factors that affect an immigrant’s decision to live in a small city and small province are the same. However, a few results are different.

As immigrants get older, they are less likely to live in small provinces, which is the same finding that I obtained in the small city regression. In addition, compared with single immigrants, both couples and widows prefer to live in small provinces, while separated immigrants’ choices have an unknown relationship with immigrants who are single. Although it is not economically significant at provincial level, the result is the same as at city level.

Gender seems to play a role when an immigrant chooses which province to live in, while it did not have a significant impact on an immigrant’s city choice. From the table above, female are 0.3 percentage points less likely than males to live in a small province, which is a small difference. Although this coefficient is statistically significant, it is not economically significant.

One more year of education reduces by 0.6 percentage points the likelihood to choose a small province and this effect increases by 0.02 percentage points as immigrants receive more years of education. This is also the same result that I got in table 14.

Field of study also matters when immigrants choose a province to live in, but the results are different from those of the city choice analysis. When an immigrant chooses where to live, he or she will not only consider competitiveness of the labour market, but also other factors like climate and the level of economic welfare of that province. Table 15 indicates that immigrants whose field of study is related to Arts, Social Science, business and technology are all less likely to live in a small province than immigrants without postsecondary education. Although immigrants whose job is related to Arts and technology prefer to live in small city, they have to take into consideration where the city is located. A small city in Ontario sometimes can be more attractive to immigrants than a larger city in a small province because of the differences in facilities, economic development level, and government policies. Although immigrants who have jobs related to technology prefer to live in small cities where there is less competition, they have to take into account whether or not their skills can closely match with employers' needs in that region. Although the signs of coefficients of Arts, Technology and health changed at the provincial level, the relative preference in living in small region does not change. Immigrants whose work is related to health are more likely to live in a small city than immigrants who major in Technology, and this is also the case for immigrants with Arts-related work. This is also true at provincial level. Compared with immigrants in fields related to Arts, those who major in Technology still prefer to live in small provinces, which to some extent is the same result that I got in table 14.

In the provincial choice regression, whether or not immigrants who have

postsecondary education in Canada are likely to live in a small province is uncertain, since the coefficient of the variable is not statistically significant.

As years since immigration increase, people tend to be less likely to live in small provinces, which is similar to the results obtained for the city choice analysis. However, it is still not economically significant.

Compared with immigrants from the United States, immigrants from almost all the other countries prefer to live in large provinces. But when I compare the coefficients of the place of birth variables in tables 14 and 15, I find that, although the signs are the same, the effects are smaller in magnitude at the provincial level. From table 14, immigrants from Central and North America are 24.0 percentage points less likely to live in small city than immigrants from the United States, but they are just 6.2 percentage points less likely to live in a small province. Immigrants from mainland China and Hong Kong are about 27 percentage points each less likely to live in a small city than their American counterparts, while the effect diminishes to about 7 percentage points at the provincial level. Similar to the results of the city choice regression, immigrants with at least one child are more likely to live in large provinces, where children can possibly receive better education.

Language may play a role in deciding where to migrate at the provincial level. Immigrants who can speak English or French are 0.4 percentage points more likely to live in a small province. But actually the estimated coefficient is not very economically significant.

In conclusion, most of the exogenous variables have the same impact on immigrant's location choice whether the dependent variable is the type of city or the type of

province. However, almost all the variables have coefficients that are smaller in magnitude at the provincial level than at the city level. Although I have included many variables in my location choice model, there are still a lot of variables left, and therefore further studies are needed. In this paper, I investigate one more variable, wages, that I think is important in the motivation to migrate.

5.2 Regression results for the wage model

In the wage regression equation, I add the Canadian-born people to my sample and exclude people who are older than 64 years old and who have either zero or extreme wages (as explained earlier). I first investigate for the factors that affect people's wages in Canada. Then I make a comparison of the net wage gap or the wage gap at the time of arrival between the Canadian born people and the immigrants from different countries in small and large regions respectively. Furthermore, I compare gender wage gaps of immigrants and Canadian-born people in small and large regions, separately. Finally, I focus my attention on small regions only and compare immigrants' performances at arrival by gender.

5.2.1 Results for the factors that affect wages

Table 16 presents the results of the wage regression. It shows the factors that affect both immigrants and Canadian-born peoples' wage in Canada. I include small city and small province as explanatory variables in two separate regressions and obtain very similar results, which I put them in one table. All of the standard errors in table 16 are robust standard errors.

Table 16. Wage model regression results for a small city and a small province

| | Dependent Variables: Log Wage | | | | | |
|----------------------------------|-------------------------------|--------|------|---------------------------|--------|------|
| | Log wage (Small city) | | | Log wage (Small province) | | |
| | Coefficient estimates | s.e. | Sig. | Coefficient estimates | s.e. | Sig. |
| Independent Variables | | | | | | |
| Small regions variable | | | | | | |
| Small city variable | | | | | | |
| <i>Reference: Other cities</i> | | | | | | |
| Small City | -0.0813 | 0.0027 | *** | | | |
| Small province variable | | | | | | |
| <i>Reference: Large province</i> | | | | | | |
| Small Province | | | | -0.0720 | 0.0035 | *** |
| Demographic variables | | | | | | |
| Age | | | | | | |
| <i>Reference: age20-24</i> | | | | | | |
| Age 25-29 | 0.2205 | 0.0052 | *** | 0.2218 | 0.0052 | *** |
| Age 30-34 | 0.3726 | 0.0054 | *** | 0.3681 | 0.0055 | *** |
| Age 35-39 | 0.4726 | 0.0056 | *** | 0.4679 | 0.0056 | *** |
| Age 40-44 | 0.5277 | 0.0056 | *** | 0.5198 | 0.0056 | *** |
| Age 45-49 | 0.5499 | 0.0054 | *** | 0.5397 | 0.0054 | *** |
| Age 50-54 | 0.5614 | 0.0055 | *** | 0.5501 | 0.0055 | *** |
| Age 55-59 | 0.5316 | 0.0059 | *** | 0.5194 | 0.0059 | *** |
| Age 60-64 | 0.4244 | 0.0071 | *** | 0.4148 | 0.0072 | *** |

| | | | | | | |
|--|---------|--------|-----|---------|--------|-----|
| Marital Status | | | | | | |
| <i>Reference: Single</i> | | | | | | |
| Couple | 0.1289 | 0.0033 | *** | 0.1268 | 0.0033 | *** |
| Separated | 0.0752 | 0.0052 | *** | 0.0795 | 0.0052 | *** |
| Widowed | 0.0511 | 0.0125 | *** | 0.0510 | 0.0126 | *** |
| Sex | | | | | | |
| <i>Reference: Male</i> | | | | | | |
| Female | -0.1982 | 0.0026 | *** | -0.1987 | 0.0026 | *** |
| Education Variables | | | | | | |
| Education year | | | | | | |
| Years of education | 0.0205 | 0.0034 | *** | 0.0286 | 0.0034 | *** |
| Years of education ² | 0.0017 | 0.0001 | *** | 0.0015 | 0.0001 | *** |
| Major field of study | | | | | | |
| <i>Reference:</i> | | | | | | |
| <i>No-postsecondary degree</i> | | | | | | |
| Arts | -0.1527 | 0.0079 | *** | -0.1701 | 0.0080 | *** |
| Social Science & business | -0.0985 | 0.0073 | *** | -0.1159 | 0.0074 | *** |
| Technology | -0.0284 | 0.0072 | *** | -0.0458 | 0.0072 | *** |
| Health & Other fields | -0.0861 | 0.0075 | *** | -0.1039 | 0.0075 | *** |
| Location of Study | | | | | | |
| <i>Reference: Immigrants have postsecondary education outside Canada</i> | | | | | | |

| | | | | | | |
|--|---------|--------|-----|---------|--------|-----|
| Postsecondary in Canada | 0.1378 | 0.0060 | *** | 0.1308 | 0.0060 | *** |
| Immigration variables | | | | | | |
| <i>Reference:</i> | | | | | | |
| <i>Non-immigrants</i> | | | | | | |
| Years since immigration | 0.0187 | 0.0007 | *** | 0.0189 | 0.0008 | *** |
| Years since immigration² | -0.0002 | 0.0000 | *** | -0.0002 | 0.0000 | *** |
| Place of Birth | | | | | | |
| <i>Reference: Born in Canada</i> | | | | | | |
| US | -0.2869 | 0.0182 | *** | -0.2695 | 0.0182 | *** |
| Central &North America | -0.3910 | 0.0128 | *** | -0.3790 | 0.0128 | *** |
| South America | -0.3837 | 0.0150 | *** | -0.3610 | 0.0151 | *** |
| UK | -0.2307 | 0.0142 | *** | -0.2004 | 0.0143 | *** |
| Northern &Western EU | -0.2741 | 0.0157 | *** | -0.2791 | 0.0158 | *** |
| Eastern Europe | -0.3610 | 0.0132 | *** | -0.3340 | 0.0132 | *** |
| Southern Europe | -0.3080 | 0.0138 | *** | -0.2841 | 0.0138 | *** |
| Africa | -0.3697 | 0.0127 | *** | -0.3619 | 0.0127 | *** |
| West Asia | -0.4428 | 0.0145 | *** | -0.4235 | 0.0145 | *** |
| China | -0.4885 | 0.0126 | *** | -0.4500 | 0.0126 | *** |
| HK | -0.4054 | 0.0164 | *** | -0.3631 | 0.0164 | *** |
| Other Eastern Asia | -0.5246 | 0.0195 | *** | -0.4882 | 0.0195 | *** |
| Philippines | -0.3844 | 0.0116 | *** | -0.3235 | 0.0116 | *** |

| | | | | | | |
|--|---------|--------|-----|---------|--------|-----|
| India | -0.4298 | 0.0119 | *** | -0.3888 | 0.0119 | *** |
| Other Southern Asia | -0.4838 | 0.0123 | *** | -0.4462 | 0.0123 | *** |
| Oceania | -0.2820 | 0.0321 | *** | -0.2377 | 0.0321 | *** |
| Family Variable | | | | | | |
| Presence of children | | | | | | |
| <i>Reference: no children</i> | | | | | | |
| At least one children | -0.0170 | 0.0025 | *** | -0.0180 | 0.0025 | *** |
| Language Variable | | | | | | |
| Knowledge of official language | | | | | | |
| <i>Reference: Neither English Nor French</i> | | | | | | |
| English or French | 0.1285 | 0.0161 | *** | 0.1216 | 0.0162 | *** |
| Labor Market Variables | | | | | | |
| Full/Part time Weeks in 2010 | | | | | | |
| <i>Reference: full time work</i> | | | | | | |
| Mainly Part time work | -0.7948 | 0.0040 | *** | -0.7932 | 0.0040 | *** |
| Working Weeks in 2010 | | | | | | |
| Log weeks worked | 0.7222 | 0.0038 | *** | 0.7281 | 0.0038 | *** |
| Geography Variable | | | | | | |
| Province people living | | | | | | |
| <i>Reference: Ontario</i> | | | | | | |
| Atlantic Canada | -0.1152 | 0.0050 | *** | | | |

| | | | | | |
|------------------|--------------------------|--------|-----|--------------------------|--|
| Quebec | -0.1104 | 0.0030 | *** | | |
| Prairies | 0.0905 | 0.0035 | *** | | |
| British Columbia | -0.0031 | 0.0039 | | | |
| | F(46,373340) = 5,385.39 | | | F(42,373344) = 5,704.48 | |
| | R-Squared=0.4642 | | | R-Squared=0.4578 | |
| | Number of obs=373,387 | | | Number of obs=373,387 | |

Note: All the standard errors in the table are robust standard errors. * stands for significant at 10%; ** stands for significant at 5%; *** stands for significant at 1%; No star stands for not significant.

The coefficients of interest are those of small city and small province; they are -0.0813 and -0.0720 respectively, which indicates that people living in a small city earn 8.1% less than those in other cities, and that people in small provinces earn 7.2% less than those in large provinces.

The effects of the other characteristics are as expected. Since there is almost no difference in the magnitude of the coefficients of the other variables whether I use small city or small province as explanatory variables in the wage model, I use the coefficients from the city choice regression in my discussion here.

Compared with people aged 20 to 24, all the other age groups from 25 to 64 years old earn more. People aged 50 to 54 earn almost 56.1% more than those about 20 years old. People aged from 55 to 64 years earn less than people who are about 54 years old, but they still earn 42.4% more than people aged 20 to 24. Couples earn 12.9% more than single people and widows earn 5.1% more. Females earn 19.8% less than males. One more year of education can bring about 2.1% in additional wages.

In addition, the major field of study can affect peoples' wages too, but the result that I

get is quite interesting because it indicates that people without postsecondary education certificate earn the most. This bizarre result may be because I also include years of education in my regression. Or it can be reasonable, to some extent, when we take into account people's highest education. If a person starts to work right after obtaining a postsecondary certificate, then compared with those who have no postsecondary certificate, the difference is really small, and they can possibly earn less.. I use people's major of field as a proxy of occupation. Then from table 16, people whose job is related to Technology, Social Science and business earn more than people working in the field of Arts, which make sense since people whose work is related to Arts usually have a relatively low return.

Furthermore, people who have postsecondary education in Canada earn 13.8% more than those who have no postsecondary education in Canada, and one more year since immigration is associated with an annual return of 1.9%. Compared to the Canadian-born people, immigrants from all countries earn less at the time of arrival. From the table, wage differences between Asians and Canadians are on average larger than the differences between Europeans or Americans and Canadians. People with at least one child earn 1.7% less, and people who can speak at least one official language earn 12.9% more. People who worked mainly part time in 2010 earn 79.5% less than those who worked full time, and a 1% increase in weeks worked in 2010 can lead to an increase in the wage of 0.7%. Finally, compared with people living in Ontario, workers living in the other provinces earn less except those from the Prairies.

On the whole, workers in small regions earn less in Canada. Age, marital status, gender, education year, occupation, location of study, years since immigration, place of birth, kids, language, full or part time work, the number of weeks of work, and the province people live in all have effect on people's wage. Therefore, I can use this

model to make some further comparisons.

5.2.2 Immigrants' performances in Canada

Table 17 shows the net wage gaps between Canadian-born workers and immigrants from different places of birth in small and in other regions. Although I use the complete wage model to estimate the regression, I only list coefficients of immigrants' places of birth here, and use Canadian-born people as the reference group. Each coefficient represents the wage gap between immigrants from different countries at entry and Canadian-born people since the regression also includes years since immigration. By changing the definition of the variable *smallregions* to small city or small province, which are both dummy variables, I obtain the estimated coefficients below.

Table 17. Net Wage Gap of Immigrants and Canadian-born People in Small and Other Regions by

| Place of birth | place of birth | | | |
|-------------------------------|------------------------|------------------------|------------------------|------------------------|
| | Small cities | Other cities | Small province | Large province |
| US | -0.2741*** (0.0563) | -0.2452*** (0.0201) | -0.3960*** (0.0634) | -0.2571*** (0.0191) |
| Cen America & Car | -0.2693*** (0.0588) | -0.3947*** (0.0132) | -0.2377*** (0.0654) | -0.3820*** (0.0131) |
| South America | -0.2368*** (0.0740) | -0.3844*** (0.0154) | -0.3249*** (0.0835) | -0.3622*** (0.0154) |
| UK | -0.1968*** (0.0496) | -0.2079*** (0.0154) | -0.2525*** (0.0618) | -0.1972*** (0.0147) |
| North & Western EU | -0.2152*** (0.0505) | -0.2576*** (0.0170) | -0.2551*** (0.0790) | -0.2782*** (0.0161) |

| | | | | |
|----------------------------|------------|------------|------------|------------|
| Eastern Europe | -0.1329* | -0.3562*** | -0.2832*** | -0.3341*** |
| | (0.0713) | (0.0135) | (0.0675) | (0.0135) |
| Southern Europe | -0.1349** | -0.3059*** | -0.1903** | -0.2850*** |
| | (0.0609) | (0.0142) | (0.0757) | (0.0141) |
| Africa | -0.1378* | -0.3650*** | -0.2794*** | -0.3631*** |
| | (0.0829) | (0.0130) | (0.0727) | (0.0130) |
| West Asia | -0.5043*** | -0.4291*** | -0.4304*** | -0.4217*** |
| | (0.1331) | (0.0148) | (0.0807) | (0.0148) |
| China | -0.1926** | -0.4817*** | -0.3749*** | -0.4516*** |
| | (0.0800) | (0.0129) | (0.0678) | (0.0129) |
| HK | -0.1095 | -0.3994*** | -0.1973 | -0.3627*** |
| | (0.2521) | (0.0166) | (0.1500) | (0.0166) |
| Other Eastern Asia | -0.4380*** | -0.5125*** | -0.5298** | -0.4862*** |
| | (0.1388) | (0.0198) | (0.2153) | (0.0197) |
| Philippines | -0.1686*** | -0.3863*** | -0.3336*** | -0.3226*** |
| | (0.0554) | (0.0120) | (0.0398) | (0.0122) |
| India | -0.2426*** | -0.4271*** | -0.4297*** | -0.3875*** |
| | (0.0554) | (0.0123) | (0.0777) | (0.0121) |
| Other Southern Asia | -0.2167** | -0.4786*** | -0.5206*** | -0.4442*** |
| | (0.1102) | (0.0126) | (0.0770) | (0.0126) |
| Oceania | -0.0950 | -0.2835*** | 0.2602 | -0.2392*** |
| | (0.1403) | (0.0328) | (0.2738) | (0.0322) |

Note: Robust standard errors are shown in the parentheses. * stands for significant at 10%; ** stands for significant at 5%; *** stands for significant at 1%; No star stands for not significant. All the coefficients in the table are obtained from a wage regression model which includes the demographic, education, immigration, family, language, labour market and geographic variables that appear in table 16. The geographic variables are only used in the regressions for cities.

From the table, it can be seen that most immigrants earn more in small regions than in large regions at the time of arrival, except those from the United States and West Asia. This result is more apparent at the city level. Immigrants from the United Kingdom earn 19.7% less than Canadian-born people in small cities, while they earn 20.8% less in larger cities at the time of arrival. Immigrants from Africa earn 36.5% less than Canadian people in larger cities at the time of arrival, while they only earn 13.8% less in small cities. Those coming from China also earn more in small cities. They earn 19.3% less in small cities, while their wage is 48.2% lower than those of Canadian-born people in larger cities. In small cities, immigrants from Eastern Europe, Southern Europe, China and even Africa perform better than immigrants from the United States at the time of arrival. Although Chinese immigrants are less likely to choose a small region than immigrants from the United States (from the results of my first model), they can do better in small cities. This is likely due to self-selection, as many immigrants come to a small city to accept a well-paid job offer. In larger cities, however, immigrants from the United States or the United Kingdom earn more than immigrants from other countries, and this may be because of their overwhelming superiority in language, or because of the similarity in lifestyles with Canadian-born people.

At the provincial level, immigrants from Southern Europe earn 19.0% less than Canadian-born people at year of arrival in small provinces, while they earn 28.5% less in large provinces. Although the comparison of immigrants' performances in small and large provinces is not as sharp as we can observe at the city level, most groups of immigrants have almost the same performance or earn more in small provinces at the time of arrival. Immigrants from China earn 37.5% less than Canadian-born people in small provinces, and they earn 45.2% less in large provinces. Similarly, immigrants born in Africa earn 27.9% less in small provinces, while their

wage is about 36.3% less than the one of their Canadian-born counterparts in large provinces. In large provinces, immigrants from United States, the United Kingdom and most parts of the Europe do better than immigrants from Asia at the time of arrival.

All things considered, although immigrants are relatively less likely to live in small regions, they seem to perform better in those areas, and this is particularly noticeable when we focus on a comparison between small and larger cities.

5.2.3 Gender wage gap in small and large regions

Table 18 presents gender wage gaps for immigrants and Canadian-born people in small and large regions. All the regression coefficients of gender below are from complete wage regression models that control for other demographic, education, family, language, geographic, labour market, and immigration variables. Immigrants and Canadian-born people are considered separately in the regressions.

Table 18. Regression coefficients of gender in small and large regions

| | Small city | Other cities | Small province | Large province |
|-------------------------------|------------------------|------------------------|------------------------|------------------------|
| Female (Immigrants) | -0.2413*** (0.0273) | -0.1550*** (0.0060) | -0.1902*** (0.0314) | -0.1575*** (0.0060) |
| Female (Canadian-born) | -0.2669*** (0.0047) | -0.1715*** (0.0036) | -0.2478*** (0.0074) | -0.2034*** (0.0031) |
| Female (Total) | -0.2662*** (0.0046) | -0.1658*** (0.0031) | -0.2450*** (0.0072) | -0.1923*** (0.0028) |
| Number of Observations | 124,478 | 248,909 | 47,546 | 325,841 |

Note: Robust standard errors are shown in the parentheses. * stands for significant at 10%; ** stands for significant at 5%; *** stands for significant at 1%; No star stands for not significant. All the coefficients in the table are obtained from a wage regression model which includes the demographic, education, immigration, family, language, labour market, and geography variables used in table 16. The geographic variables are only used in the regressions for cities.

The results provide some general information about the gender wage gaps in Canada. In small cities, females earn 26.6% less than males, while in larger cities, they earn only 16.6% less. The same result is discerned for both immigrants and Canadian-born people. For immigrants, females earn 24.1% less than males in small cities, while they earn 15.5% less in larger cities. When I do the comparison at the provincial level, immigrant females earn 19.0% less than males in small provinces, while they earn 15.8% less in large provinces. For Canadian-born people, females earn 26.7% less than males in small cities and 17.2% less in larger cities. In small provinces, Canadian-born female wages are 24.8% less than that of males, while the gender wage gap decreases to 20.3% in large provinces. Therefore, although immigrants

usually earn more in small regions, the gender wage gap in small regions is larger than that in large areas.

5.2.4 Immigrants' performances within small regions by gender

To conclude, I focus my discussion only on small regions. Since gender plays a role in determining the wage level, let us look at the performance of immigrants separately by gender. Table 19 presents the wage gaps between Canadian-born workers and immigrants from various places of birth for both male and female immigrants in small cities and provinces. I use Canadian-born people as the benchmark. Since the regression coefficients below are from the complete wage model that includes years since migration, the wage gaps presented in table 19 measure the entry effects of those immigrants, that is, the wage gap for males and females immigrants at the time of arrival.

Table 19. Regression Coefficients of Place of Birth for Female and Male Immigrants in small regions

| Place of birth | Small city | | Small province | |
|------------------------------------|------------------------|------------------------|------------------------|------------------------|
| | Female | Male | Female | Male |
| US | -0.3000*** (0.0802) | -0.2668*** (0.0806) | -0.3911*** (0.0872) | -0.4078*** (0.0939) |
| Cen America & Caribbean | -0.3604*** (0.0935) | -0.2789*** (0.0760) | -0.2381** (0.0982) | -0.2279*** (0.0866) |
| South America | -0.3065** (0.1226) | -0.1787** (0.0832) | -0.4077*** (0.1407) | -0.2633*** (0.0896) |
| UK | -0.2359*** (0.0728) | -0.1693** (0.0677) | -0.2614*** (0.0960) | -0.2305*** (0.0800) |

| | | | | |
|----------------------------------|------------|------------|------------|------------|
| Northern & Western EU | -0.1881** | -0.2511*** | -0.3060*** | -0.1957* |
| | (0.0764) | (0.0664) | (0.1143) | (0.1070) |
| Eastern Europe | -0.1783 | -0.0971 | -0.2352*** | -0.3224*** |
| | (0.1089) | (0.0912) | (0.0864) | (0.1024) |
| Southern Europe | -0.1219 | -0.1476* | -0.2090* | -0.1588 |
| | (0.0873) | (0.0829) | (0.1087) | (0.1038) |
| Africa | 0.0711 | -0.2128** | -0.2954** | -0.2270*** |
| | (0.1516) | (0.0960) | (0.1432) | (0.0797) |
| West Asia | -0.1370 | -0.5867*** | -0.5843*** | -0.3043*** |
| | (0.2452) | (0.1547) | (0.1782) | (0.0812) |
| China | -0.0012 | -0.3434*** | -0.2603*** | -0.3986*** |
| | (0.0930) | (0.1188) | (0.0911) | (0.0937) |
| HK | 0.1206 | -0.2736 | -0.0418 | -0.3572** |
| | (0.3032) | (0.3637) | (0.2226) | (0.1656) |
| Other Eastern Asia | -0.4761** | -0.3905** | -0.2410 | -0.6798** |
| | (0.1967) | (0.1916) | (0.2477) | (0.2931) |
| Philippines | -0.1275* | -0.2737*** | -0.2802*** | -0.3919*** |
| | (0.0729) | (0.0861) | (0.0589) | (0.0533) |
| India | -0.2332*** | -0.2485*** | -0.4268*** | -0.4227*** |
| | (0.0760) | (0.0816) | (0.1119) | (0.1065) |
| Other Southern Asia | -0.1304 | -0.2819* | -0.5582*** | -0.4697*** |
| | (0.1584) | (0.1487) | (0.1401) | (0.0927) |
| Oceania | -0.3850 | 0.1367 | 0.4342*** | 0.1403 |
| | (0.2527) | (0.1294) | (0.0874) | (0.0881) |
| Number of Observations | 60,469 | 64,009 | 23,605 | 23,941 |

Note: Robust standard errors are shown in the parentheses. * stands for significant at 10%; ** stands for significant at 5%; *** stands for significant at 1%; No star stands for not significant. All the coefficients

in the table are obtained from a wage regression model which includes the demographic, education, immigration, family, language, labour market, and geographic variables used in table 16. The geographic variables are only included in the regressions for cities.

Controlling for demographic, education, family, language, geographic, labour market variables, and years since immigration, I evaluate the performance of male and female immigrants separately by looking at the coefficients of the place of birth, indicators which represent wage gaps at the time of arrival between immigrants and Canadian-born people. In table 19, I notice that in regions such as South America, the United Kingdom and Southern Europe, immigrant males earn comparatively more than immigrant males from parts of the world that are less developed, such as China, West Asia, and India in small cities. However, female immigrants from the Philippines and India perform better than their counterparts from most of the developed countries in small cities. For example, men from Southern Europe earn 14.8% less than Canadian-born men at the time of arrival, while men from West Asia earn 58.7% less. Female immigrants from the Philippines earn 12.8% less than Canadian-born people in small cities in year of entry, while female immigrants from the United States earn 30% less at the time of arrival. Therefore, females from developing countries seem to do relatively better than female immigrants from other countries in small cities at entry, while male immigrants from developed countries seem to perform better at the time of arrival.

At the provincial level, male immigrants from developed countries seem to perform better than male immigrants from other countries, which is the same result that I found at the city level. As for female immigrants, the results are not as obvious as they are at the city level. Although most of the wage gaps between female immigrants from developing countries and Canadian-born females are smaller than those between

female immigrants from developed countries and Canadian-born females, the regression coefficients are not statistically significant. Therefore, we cannot conclude much about the relative performances of female immigrants from developed and developing countries at the provincial level.

In conclusion, female immigrants from developing countries seem to earn more at the time of arrival than is the case for female immigrants from other countries in small regions. Male immigrants from developed countries seem to earn more than those from developing countries, and this can be more obviously observed at the provincial level. This result may be because many jobs in small regions are more suitable for females from developing countries and males from developed countries. Governments who want to attract newcomers to small cities should think about reasons for this finding and evaluate their policies accordingly.

6. Conclusions

With Statistics Canada's 2011 National Household Survey (NHS) public use microdata file (PUMF), I investigated the factors that may determine immigrants' locational choices across regions of Canada. By defining small regions in two different ways - as small cities and small provinces respectively, I found that factors like age, education and years since immigration play important roles in determining where immigrants live. In addition, I investigated the wages of immigrants and Canadian-born people and found that immigrants earn relatively more in small regions. Here are some key findings of this paper:

(1) Age affects an immigrant's locational choice. As immigrants grow older, they tend not to reside in small regions. This is possibly because they want to join their families in larger areas.

(2) Immigrants who are legally married or living common law are more likely to live in small regions compared with those who are single. But once they have children, they prefer to live in larger regions. This may be because the cost of living in a small region is relatively low and couples may want to save money for future use. Once they have a child, they tend not to live in small regions and possibly to look for better education for their children.

(3) Widows prefer to live in small regions compared with single immigrants, but if they have a child, they tend to reside in larger areas.

(4) Gender seems to have no impact on immigrants' locational choices at the city level. But at provincial level, females are slightly less likely to live in a small province.

(5) Small regions are a less-preferred choice for the educated immigrants, and as immigrants obtain more years of education, the probability of residing in a larger area increases. This is possibly because larger regions tend to have more employment opportunities for them.

(6) Compared to immigrants without postsecondary education, immigrants whose work is related to Arts and Technology tend to live in a small city that is located in a large province. This is partly because well-educated people seem to choose a larger region to live, but the labour markets in larger cities located in large provinces are more competitive than those in small cities, which means that immigrants in larger cities find it harder to get jobs.

(7) Immigrants who received postsecondary education in Canada are more likely to choose larger regions than those without postsecondary education in Canada. But this is only statistically significant at the city level.

(8) As years since immigration increase, the probability of living in small regions decreases at an increasing rate. This may be because as time goes by, immigrants become familiar with Canada and they know where to find more opportunities.

However, the estimated coefficient of that variable is not very economically significant.

(9) Immigrants from the United States, the United Kingdom, and Northern and Southern Europe are more likely to live in small regions than immigrants from other countries, and this is mostly because of the similarities in language and lifestyle with Canadian-born people.

(10) Immigrants with children reside in larger regions possibly to provide their children gateways to better education.

(11) Immigrants who cannot speak at least one of the official languages are less likely to live in small regions.

(12) Factors like age, marital status, gender, education, occupation, location of study, years since immigration, place of birth, presence of children, language, part time or full time work, weeks worked, as well as the location where people live play a role in determining peoples' wages. People who live in small regions in Canada have a lower wage than those living in larger regions.

(13) Compared with Canadian-born people, almost all of the immigrants in Canada earn less at the time of arrival. But immigrants in smaller regions seem to perform relatively better than those living in larger regions. Some immigrants from developing countries can even earn more than immigrants from developed countries in small regions at the time of arrival, and this may be because many immigrants from developing countries come to small regions to accept attractive offers.

(14) There seems to be larger gender wage gap in smaller regions, and this is partly because of the gender discrimination.

(15) In small regions, female immigrants from developing countries tend to earn more than females from developed countries, while male immigrants from developed countries seem to earn more than males from other developing countries. This result is more apparent at the city level.

In summary, if the governments of the less populous regions want to attract new comers, they must devise policies that take account of the factors that affect immigrants' location choices in Canada as well as the characteristics of the immigrants who live in small regions. Although the models in this paper include a relatively limited number of explanatory variables, they shed some light on topics for further research as well as on policy analysis and planning for those small regions' governments. If the immigrants become aware that there are other choices than the large metropolitan areas, and if governments of the small regions make the right policy choices, then perhaps the small cities will be the choices of tomorrow's immigrants.

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Appendix

Appendix A1: Highest Degree Level and the Corresponding Years of Education

| Highest degree | Years of education |
|--|--------------------|
| No certificate, diploma or degree | 8 |
| High school diploma or equivalent | 12 |
| Trades certificate or diploma (other than apprenticeship) | 13 |
| Registered Apprenticeship certificate | 13 |
| College, CEGEP or other non-university certificate or diploma from a program of 3 months to less than 1 year | 13 |
| College, CEGEP or other non-university certificate or diploma from a program of 1 year to 2 years | 14 |
| College, CEGEP or other non-university certificate or diploma from a program of more than 2 years | 14 |
| University certificate or diploma below bachelor level | 15 |

Bachelor's degree 16

University certificate or diploma above bachelor level 17

Degree in medicine, dentistry, veterinary medicine or optometry 22

Master's degree 18

Earned doctorate degree 22
