# Individual and community-level determinants of retention of Anglophone and Francophone immigrants across Canada 

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#### Abstract

This paper uses Cox Proportional Hazard models, the Longitudinal Immigration Database, and Harmonized Census Data files to investigate the individual and community determinants of retention of Anglophone and Francophone immigrants in Canada among 1990, 1995, 2000, and 2005 landing cohorts in the first five years after landing. We focus on both the official language capacity of immigrants and the linguistic composition of the communities in which they settle. We find that Official Language Minority Communities (OLMCs) successfully retained Francophone immigrants better than non-OLMCs outside of Quebec. We also find that most cohorts of Anglophone immigrants are more likely to exit Quebec if they started out in an OLMC than if they did not.


Keywords: immigration; recruitment; retention; integration; official languages

## Résumé

Cette étude utilise des modèles à risque proportionnel de Cox, la Base de données longitudinales sur l'immigration, des fichiers de données harmonisés des recensements de la population afin d'examiner les déterminants au niveau individuel et communautaire sur la rétention à l'arrivée au pays des cohortes admises en 1990, 1995, 2000 et 2005 au cours des cinq premières années après leur établissement. L'accent de l'étude porte sur la capacité linguistique dans les deux langues officielles des nouveaux arrivants et la composition linguistique des communautés d'accueil. L'étude révèle que les communautés de langue officielle en situation minoritaire (CLOSM) ont plus de succès à maintenir les immigrants francophones que les communautés de langue officielle en situation majoritaire hors-Québec. L'étude révèle aussi que la plupart des cohortes anglophones sont plus susceptible de quitter le Québec si initialement établies dans une CLOSM.
Mots-clés : l'immigration; recrutement; rétention; integration; langues officielles

## Introduction

Canada has long been a bilingual country. Federal policies on linguistic duality date as far back as the Constitution Act of 1867 (Section 133), with enshrinement of the right to use French or English in Parliament and in Federal Courts. Canada's 1982 Charter of Rights and Freedoms extended the linguistic duality even further, declaring that "English and French are the official languages of Canada and have equality of status and equal rights and privileges as to their use in all institutions of the Parliament and government of Canada" (Government of Canada 1982). Elsewhere, the Government of Canada has stated that it is "committed to promoting Canada's official languages, as well as the vitality of official language minority communities" (Government of Canada 2013).

[^0]Although English is spoken most widely across the country, a considerable proportion of the Canadian population either also speaks French or speaks French exclusively. According to the 2011 Census of Canada, 7.7 million people, or 23.2 per cent of all Canadians, identified French as their first official language spoken (Statcan 2011). While the vast majority of French speakers live in Quebec ( 6.1 million people in Quebec, or around 18 per cent of the total population of Canada, list French as their mother tongue), there are a considerable number of Francophones across the rest of the country, just as there are Anglophones in Quebec. ${ }^{2}$

In the current period of low fertility, immigration has for many years been responsible for nearly all population growth (Kalbach 1970), suggesting that Anglophone and Francophone immigration is extremely important for maintaining Official Language Minority Communities (OLMCs). ${ }^{3}$ The central purpose of this paper is to analyze the factors at the individual and community level that affect the retention of Anglophone and Francophone immigrants in OLMCs in Canada. Of particular interest is the role that OLMCs play in immigrant retention.

The primary questions that this study addresses are:

1. What are the individual and community characteristics that determine whether Francophone immigrants stay in their respective province of landing?
2. Do provincial retention rates vary depending on individual characteristics, such as level of education, marital status, presence of children, landing category, and year of landing?
3. How likely is it that a Francophone immigrant will stay in a predominantly Anglophone versus Francophone community? What about Anglophone or Allophone immigrants? ${ }^{4}$
To answer these questions, this study employs Cox Proportional Hazard models, the 1991-2006 Harmonized Census Files, and the Longitudinal Immigration Database (IMDB).

We first briefly outline current immigration policy and recent trends in Francophone immigration. As a study of the retention of immigrants in their location of landing, we briefly review the literature on the internal geographic mobility of immigrants. Next, our methodology is discussed, followed by a presentation and discussion of results.

## Francophone immigration trends outside of Quebec

Although there are Official Language Minority Communities across Canada, most Anglophone and Francophone immigrants settle in a region where they can function in the official language of their choice. Although the majority of Francophone immigrants continue to settle in Quebec, there has been a shift in recent years (Day and Winer 2014). In British Columbia, for example, Francophone immigrants as a percentage of the French-speaking population grew from 18 per cent in 1991 to 24 per cent in 2006; from 8 to 13 per cent during the same period in Ontario, from 9 to 13 per cent in Alberta, and from 5 to 10 per cent in the Northwest Territories (Houle and Corbeil 2010). The Atlantic region, as well as Manitoba and Saskatchewan, experienced limited growth.

Of the permanent resident population that landed between 2008 and 2012, 76,315 identified French as their first official language spoken, while 133,275 declared both official languages spoken. Employing the First Official Language Spoken (FOLS) approach developed by Statistics Canada, this amounts to 76,315 plus 133,275/2, or roughly 143,000 Francophones. As a percentage of the total number of permanent residents landing for this period, 5.9 per cent identified French as their only official language spoken and 5.2 per cent identified speaking both official languages, thereby totalling roughly 11 per cent of all landings (CIC, Q3 2013 Data Cubes, 2013).

Though a sizable number, it still does not reflect the current linguistic balance of the country's two official languages. Between 1999 and 2001, a tour was taken across Canadian Francophone communities by the Fédéra-

[^1]tion des communautés francophones et acadiennes du Canada (FCFA), and the topic of immigration and its importance to the vitality of the Francophone communities was discussed at great length (Roy Marcoux 2009: 1). Francophone Minority Communities (FMCs) were not benefiting from immigration to the same degree as Anglophone communities (Roy Marcoux 2009). The Federal Government released the Roadmap for Canada's Linguistic Duality 2008-2013: Acting for the Future, with five priority areas, as a reaffirmation of the government's commitment to linguistic duality and Canada's two official languages.

The Roadmap committed the federal government to facilitating the efficacious integration of French speaking immigrants by enabling their access to French services reflecting their needs. ${ }^{5}$ From the federal government's perspective, the Roadmap has had a positive impact for: better understanding the unique challenges affecting Francophone Minority Communities (FMCs); identifying an increase in the number of French-speaking newcomers migrating to FMCs (albeit with challenges quantifying the exact number); improving infrastructure to integrate French-speaking newcomers into FMCs; and other issues tackled by the Roadmap (CIC 2012).

In 2013, the federal government released a new iteration: the Roadmap for Canada's Official Languages: Education, Immigration, Communities. Like its predecessor, the latest manifestation of the Roadmap (Roadmap 2) specifically addresses immigration, recognizing the need to improve efforts to successfully recruit and retain Frenchspeaking immigrants to Canada's FMCs.

## Review of the literature on the inter-provincial mobility of immigrants in Canada

As provinces and regions invest considerable resources and programs (such as the Atlantic Immigration Pilot; Government of Canada 2017) into attracting immigrants to their respective jurisdictions, it is important to identify the characteristics of both individuals and communities that best facilitate the retention of immigrants destined for, and landing in, individual provinces and territories. The Constitution Act of 1982, specifically the mobility rights under section 6 (2), articulates that every citizen or permanent resident of Canada has the right to move and reside in any province (Canadian Charter, 1982, s 6(2) (a) (b)). The implication for immigrants (and provinces/territories where immigrants reside) is that irrespective of where they land, they are free to move wherever they choose, be it for employment, family, or other reasons. As a result, retention of immigrants is crucial, along with awareness of the individual- and community-level determinants of retention. ${ }^{6}$ Trovato (1988) has argued that recent immigrants tend to migrate to larger centres and subsequently remain there; if they then move, it tends to be to other larger centres. It is only after immigrants have resided in larger urban centres for ten years or more that one sees movement toward smaller urban areas (Trovato 1988).

Immigrants are more likely to migrate inter-provincially than the Canadian-born (Hou 2007; Rogers and Belanger 1990). Bigger cities with larger ethno-cultural communities (Toronto, Vancouver) exercise a stronger pull on immigrants (Newbold 1996). However, immigrants tend to pursue opportunities in the same manner as the Canadian-born; they migrate to areas offering better employment rates and opportunities, including higher earning potential and greater cultural affinity, but avoid locations with harsher climates, remoteness, great distance, and poor employment opportunities (Newbold 1996). Inversely, immigrants are less likely to migrate from areas containing the positive qualities described above (Newbold 1996). Immigrants with higher human capital characteristics, such as higher education, are more mobile (similar to the Canadian-born), but less mobile if they have families (i.e., married with children).

Trovato and Halli (1990) found that language was a more important determinant to migrate than ethnicity, although, as ethnicity and language associate closely, it was difficult to attribute the inclination to move solely to language separate from ethnicity (Trovato and Halli 1990). ${ }^{7}$

[^2]Hou and Bourne (2006) argue that higher levels of immigration may be related to the out-migration of lower-educated and lower-skilled domestic-born populations from Canada's three major "gateway" cities: Toronto, Vancouver, and Montreal. They argue that, if correct, the effect of immigration growth on internal migration to and from major CMAs likely relates to economic factors, such as competition for lower=skilled jobs and more affordable housing among the lower-skilled domestic population and recently arrived immigrants (Hou and Bourne 2006). However, while there remains an unclear relationship between immigration growth and internal migration, the major CMAs (Toronto and Vancouver in particular), continue to attract a large share of international migrants; while receiving fewer internal migrants during the 1990s, they simultaneously had fewer migrants leave, "increasing the diversity distance between [these] gateway centres and the rest of the country" (Hou and Bourne 2006).

While the number of immigrants choosing Toronto and Vancouver remained high throughout the 1970s and 1980s, there was a decline in their concentration in the 1990s (Hou 2007). The earlier concentration relates to the initial destination of immigrants, likely related to the pull of global cities for highly skilled, lower-, and semi-skilled workers (Hou 2007). Hou (2007) also found that size of the ethnic community did not have an effect (when controlling for location fixed effects, i.e., regional unemployment rates) on the growing concentration of immigrants (Hou 2007). This contrasts with Newbold's assertion that large centres such as Toronto and Vancouver are able to attract immigrants because of the large size of their ethnic populations (Newbold 1996).

Earlier studies found a large difference between French- and English-speaking migrants; for example, while the French-speaking immigrants tended to relocate intra-provincially in Quebec, English-speaking immigrants tended to out-migrate from Quebec (Edmonston 2002; Krahn et al. 2005; Newbold 1996). Minority language speakers were less likely to leave their province of residence, as it would mean leaving their community, "which suggests the importance of cultural similarity" (Newbold 1996).

This paper's focus on immigrants speaking the minority official language in their region of landing (English in Quebec, French in the rest of Canada), and the linguistic composition of the communities in which they settle, is designed to build on the existing literature on inter-provincial migration. As stated earlier, it does not address intra-provincial migration, but acknowledges this as both a limitation of this paper and important area of inquiry. The policy initiatives designed to augment the national Francophone population, particularly outside of Quebec, has been a topic of considerable discussion and a focus of significant activity in the field.

Federal support for maintaining the vitality of OLMCs will continue to be a priority in the years to come. It is therefore important to help develop evidence that informs policies focused on attraction, recruitment, settlement, integration, and retention outcomes among ${ }^{8}$ Francophone newcomers in the rest of Canada, and among Anglophone newcomers in Quebec. In the remainder of this article, we model interprovincial migration rates of four cohorts of immigrant newcomers to Canada, assessing the comparative impact of individual and community-level factors. This research will provide policymakers with evidence-based information to support decisions regarding Canadian immigration policy, especially as it pertains to the recruitment and retention of Francophone immigrants in OLMCs, and for Quebec's immigration policies around Anglophone immigration.

## Methodology and scope

## Data

This study uses two sets of data. The first one is the 2011 Longitudinal Immigration Database (IMDB) , a file that contains immigrant landing records linked to Canadian T1 tax return data. These data are annual, and span from 1982 to 2011. We extract the records from four landing cohorts (1990, 1995, 2000, and 2005), and follow their migratory patterns in the first five years after landing.

[^3]The longitudinal nature of this dataset allows us to identify and track individual immigrants according to place of tax filing, so that we can trace their geographical location over time. Detailed information on the immigrants' location at the level of census subdivision, and neighbourhood and some individual characteristics, are obtained from the 1991-2006 harmonized census files. Neighbourhood information is linked to longitudinal IMDB records using longitudinally consistent CSD identifiers. Since we only obtain community information in census years (1991, 1996, 2001, and 2006), it was necessary to impute data for the remaining years. We chose linear interpolation, which equates to a 'straight line' of data for adjoining censuses. For example, if the Consumer Price Index-adjusted median income in 2001 was $\$ 30,000$ and in 2006 it was $\$ 35,000$, the values for intervening years would be as follows: $\$ 31,000$ in $2002, \$ 32,000$ in 2003, $\$ 33,000$ in 2004, and $\$ 34,000$ in 2005.

Values for 2007-11 were taken from the 2006 census. Generating annual Census Subdivision information allows us to identify Official Language Minority Communities and model how community characteristics affect migration as close to time of move and as accurately as possible. Community-level information is linked to landing and tax-filing records of immigrant newcomers, allowing us to model the effect of both individual- and community-level characteristics on provincial retention rates.

## Statistical methods

We used Cox proportional hazard models to analyze the risk factors of provincial out-migration. To formulate this problem into survival analysis, an event is defined as leaving a province in a given year. Let $t$ be a random variable, denoting an individual's event time, i.e., leaving province of landing (as defined by the first province where a tax return is submitted). The hazard function of exiting a province at time $t$ is defined by:

$$
h_{i k}(t)=h_{0}(t) e^{\beta_{j} x_{i j}+\delta_{j} z_{k j}},
$$

where $h_{i k}(t)$ is the predicted hazard for individual $i$ leaving community $k, h_{0}(t)$ is the baseline hazard, $\beta_{j}$ and $\delta_{j}$ are regression coefficients that measure the net effect of individual $(X)$ and community $(Z)$, respectively, on the risk of moving.

To denote any major differences between immigrant cohorts, separate regressions were performed on 1990, 1995, 2000, and 2005 arrivals in the following five years. ${ }^{9}$ Furthermore, we ran separate models for Quebec and the rest of Canada.

## Measures

## Independent variables

## Individual-level variables

Age is calculated from date of birth of the respondent.
Language characteristics: "English" (reference category in Canada except Quebec models), "French" (reference category in Quebec models), "English and French" or "No Official Language" is a categorical variable about an immigrant's knowledge of an official language, indicating if a respondent is capable of communicating in English only, French only, both English and French, or no official language at the time of landing.
Marital status is a binary variable indicating the status of marriage of the respondent at the time of admission: "not married" includes never legally married (single)/ separated, but still legally married/ divorced/ widowed, and "married" includes legally married (and not separated) and common-law.

Presence of children indicates whether the individual has at least one child under the age of 18.

[^4]Education refers to an individual's highest degree or diploma at the time of landing. Options include "High school diploma or less" (reference group), "College diploma," or "Bachelor's degree or higher."

Admission category refers to the immigrant class based on which the immigrant received admission into Canada. These include "Family Class," "Economic Class" (which consists of provincial nominee principal applicants, spouses and dependents, Federal Skilled Worker principal applicant, spouses and dependents, Entrepreneur, and Investor classes), "Refugees," and "Other Class" (i.e., those that are not in either Family, Refugee, or Economic classes).

Income: Individual income from all sources in year $t-1$. All dollar values are in 2010 dollars, and represented by four binary variables: $<\$ 10,000, \$ 10,000-\$ 19,999, \$ 20,000-\$ 29,999, \$ 30,000-\$ 39,999$, and more than $\$ 40,000$ (reference group).

Province of filing indicates the immigrant's place of residence in terms of province and territory as of December 31 of year $t-1$.

Country of citizenship indicates an individual's citizenship country, and only a small number of countries could be included. These include France, Haiti, China, Algeria, Romania, Morocco, Other French (i.e., other countries where French is the official language), Other English and Other for Quebec, and China, India, Philippines, United Kingdom, United States, Other French, Other English, and Other for the rest of Canada.

## Community-level variables

Each of the community variables below indicate the community characteristics of an individual at time $t-1$. The reason for doing this is that we wanted to know the characteristics of where people lived in before they moved, rather than where they were currently situated.

OLMC indicates that an individual lives in a community that is an Official Language Minority Community. We define an OLMC as any census subdivision where there are either a minimum of 1,000 or at least 10 per cent of the population that speaks English (in Quebec) or French (in rest of Canada). We found that the results were largely consistent across the different definitions of OLMC.

English*OLMC indicates that an individual is both Anglophone and living in an OLMC (Quebec models only).
Frencb*OLMC indicates that an individual is both Francophone and living in an OLMC (Canada except Quebec models only).

Percentage homeowner indicates the proportion of individuals who live in an owned dwelling.
\% University degree indicates the proportion of individuals who hold a bachelor's degree or higher. ${ }^{10}$
$\%$ Immigrant indicates the proportion of individuals who are immigrants. ${ }^{11,12}$
Rural is a binary variable that indicates if a census subdivision is primarily rural.
Median community income is a standardized measure of median income in the CSD. ${ }^{13}$

## Dependent variable

The dependent variable is a binary variable that measures if person $i$ at time $t$ pays taxes in a different province at time $t$ than they did at $t-1$. We assume that the stated location on the tax return at time $t$ indicates where that individual lives at time $t$. A change in location from one year to the next indicates that a move has occurred.
10. Normalized for the Quebec models, due to less variation in the smaller sample.
11. Normalized through mean-centering for the Quebec models, due to less variation in the smaller sample.
12. Per cent internal migration was also considered; however, the variable was dropped to retain model stability.
13. Percentage of low-income households was also considered; however, the variable was dropped to retain model stability.

## Descriptive results

## Individual-level characteristics of immigrants to Canada

In Table 1, we outline the sample characteristics of the four arrival cohorts of interest.
Table 1. Characteristics of immigrants to Canada except Quebec, 1990, 1995, 2000, and 2005 cohorts (\%)

|  | 1990 | 1995 | 2000 | 2005 |
| :--- | ---: | ---: | ---: | ---: |
| Average age | 35 | 37 | 36 | 37 |
| Married | 66 | 76 | 81 | 81 |
| Presence of children | 55 | 54 | 57 | 58 |
| Knowledge of official languages at landing |  |  |  |  |
| $\quad$ French | 1 | 1 | 1 | 1 |
| English | 57 | 68 | 62 | 67 |
| $\quad$ Both official languages | 2 | 2 | 3 | 5 |
| $\quad$ Neither official language | 39 | 29 | 34 | 27 |
| Education at landing |  |  |  |  |
| $\quad$ High school degree or less | 45 | 42 | 23 | 22 |
| $\quad$ College degree | 47 | 49 | 59 | 59 |
| $\quad$ Bachelor's or higher | 6 | 8 | 16 | 16 |
| Admission category |  |  |  |  |
| $\quad$ Economic class | 37 | 45 | 62 | 53 |
| Refugee | 20 | 14 | 11 | 14 |
| Family class | 30 | 29 | 22 | 25 |
| Other class | 13 | 12 | 5 | 8 |
| Total individual income (2010) |  |  |  |  |
| $\quad$ Less than \$10,000 | 7 | 13 | 9 | 8 |
| \$10,000-\$19,999 | 16 | 18 | 14 | 13 |
| \$20,000-\$29,999 | 20 | 21 | 18 | 18 |
| \$30,000-\$39,999 | 19 | 16 | 17 | 18 |
| \$40,000 or more | 37 | 33 | 42 | 43 |
| Country of citizenship |  |  |  |  |
| China | 5 | 8 | 21 | 19 |
| India | 5 | 9 | 13 | 15 |
| Philippines | 8 | 10 | 6 | 10 |
| UK | 17 | 14 | 5 | 3 |
| USA | 3 | 2 | 2 | 2 |
| Other French | 2 | 4 | 3 | 3 |
| Other English | 9 | 10 | 12 | 11 |
| Other | 44 | 38 | 37 |  |
| $N$ | 68,980 | 72,725 | 89,580 | 93,605 |

Source: Longitudinal Immigration Database (IMDB) 2011.
Note: Percentages may not add up to 100 within categories, due to rounding.

Most of the sociodemographic information is consistent across cohorts. The average age of newcomers increases slightly (by two years) over the four cohorts. The percentage of immigrants that are married starts at 66 per cent for 1995 arrivals, peaks at 81 per cent among the 2000 cohort, and remains at this high level among 2005 arrivals. The percentage of individuals with children ranges from 54 per cent ( 1995 cohort) to 58 per cent (2005 cohort). Most immigrants to Canada (except Quebec) speak either English or neither official language.

Overall educational attainment levels trend upwards across the cohorts, and the proportion of Economic Class trends upwards, alongside a decline in the number of refugees and family class landings. Over time, more immigrants are found in the highest income bracket, and in the 2005 cohort, the $\$ 40,000+$ category contains almost half of all the immigrants.

The distribution of immigrants from different countries (as defined by citizenship status) remains relatively constant, with the only consistent trend being a general decline among arrivals from the U.K. and a steady increase in newcomers from India and China.

Turning now to Quebec (Table 2), average age is stable across cohorts, there is an increase in the percentage married, and the proportion of individuals with children declines across the cohorts. The proportion of immigrants who speak neither official language is smaller, and although the proportions of English and French speakers fluctuate, neither changes drastically.

Table 2. Characteristics of immigrants to Quebec, 1990, 1995, 2000 , and 2005 cohorts (\%)

|  | 1990 | 1995 | 2000 | 2005 |
| :---: | :---: | :---: | :---: | :---: |
| Average age | 35 | 35 | 35 | 35 |
| Married | 64 | 72 | 72 | 74 |
| Presence of children | 57 | 55 | 51 | 52 |
| Knowledge of official languages at landing |  |  |  |  |
| French | 23 | 29 | 29 | 26 |
| English | 22 | 29 | 24 | 19 |
| Both official languages | 24 | 17 | 26 | 43 |
| Neither official language | 31 | 25 | 21 | 12 |
| Education at landing |  |  |  |  |
| High school degree or less | 47 | 35 | 25 | 19 |
| College degree | 45 | 52 | 59 | 61 |
| Bachelor's or higher | 6 | 12 | 14 | 18 |
| Admission category |  |  |  |  |
| Economic class | 53 | 45 | 57 | 61 |
| Refugee | 12 | 23 | 19 | 14 |
| Family class | 19 | 27 | 22 | 19 |
| Other class | 17 | 5 | 3 | 6 |
| Total individual income (2010) |  |  |  |  |
| Less than \$10,000 | 12 | 14 | 12 | 12 |
| \$10,000-\$19,999 | 23 | 25 | 22 | 19 |
| \$20,000-\$29,999 | 23 | 25 | 24 | 24 |
| \$30,000-\$39,999 | 19 | 14 | 17 | 19 |
| \$40,000 or more | 22 | 22 | 25 | 26 |
| Country of citizenship |  |  |  |  |
| France | 5 | 12 | 11 | 9 |
| China | 3 | 6 | 11 | 9 |
| India | 4 | 6 | 4 | 4 |
| Philippines | 2 | 4 | 9 | 9 |
| U.K. | 1 | 5 | 4 | 7 |
| USA | 3 | 3 | 8 | 7 |
| Other French | 2 | 4 | 5 | 6 |
| Other English | 9 | 10 | 9 | 7 |
| Other | 71 | 50 | 39 | 43 |
| $N$ | 13,340 | 10,930 | 15,460 | 20,890 |

Source: Longitudinal Immigration Database (IMDB) 2011.
Note: Percentages may not add up to 100 within categories, due to rounding.
As with the rest of Canada (Table 1), the level of education among immigrants to Quebec gradually increases over time. We see more individuals with post-secondary schooling, and fewer individuals with a high school diploma or less. However, income distribution does not change much over the time span, and compared to the rest of Canada, much fewer individuals are in the top income category.

There is a considerable change in the proportion of newcomers from several countries. Immigrants from Romania increased from 1 to 7 per cent, and Algeria from 2 to 9 per cent. The biggest change is seen among im-
migrants from Other (Non-English, Non-French) countries, which comprised 71 per cent of the 1990 cohort, but dropped to 43 per cent in 2005.

## Intended destination

In Table 3, we display the intended destination of immigrants across the Canadian provinces.
Table 3. Intended province of destination by language group, 1990, 1995, 2000, and 2005 cohorts (\%)

| Knowledge <br> of official <br> languages <br> at landing | Cohort |  | Nfld | PEI | NS | NB | Que | Ont | Man | Sask | Alta | BC | $N$ |
| :--- | ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Ennglish | 1990 | 0.5 | 0.1 | 0.9 | 0.5 | 8.7 | 59.4 | 3.7 | 1.1 | 10.1 | 14.9 | 47,930 |  |
|  | 1995 | 0.4 | 0.1 | 1.7 | 0.3 | 5.7 | 62.2 | 1.9 | 1.1 | 6.8 | 19.9 | 57,690 |  |
|  | 2000 | 0.2 | 0.1 | 0.6 | 0.2 | 5.9 | 66.6 | 2.0 | 1.0 | 7.1 | 16.3 | 64,660 |  |
|  | 2005 | 0.2 | 0.1 | 0.8 | 0.4 | 6.3 | 62.6 | 3.5 | 1.0 | 8.9 | 16.2 | 73,895 |  |
| French | 1990 | 0 | 0 | 0.2 | 0.2 | 83.9 | 12.6 | 0.5 | 0 | 1.5 | 1.0 | 4,195 |  |
|  | 1995 | 0 | 0 | 0.4 | 0.5 | 84.5 | 11.5 | 0.2 | 0.1 | 1.0 | 1.8 | 4,170 |  |
|  | 2000 | 0 | 0 | 0.1 | 0.8 | 86.5 | 9.8 | 0.8 | 0 | 0.9 | 1.2 | 5,760 |  |
|  | 2005 | 0 | 0 | 0 | 0.2 | 87.4 | 8.9 | 1.0 | 0.1 | 1.3 | 1.0 | 6,680 |  |
|  | 1990 | 0.2 | 0 | 0.4 | 0.5 | 68.7 | 23.6 | 0.6 | 0.4 | 2.2 | 3.4 | 5,520 |  |
| Both | 1995 | 0 | 0 | 1.0 | 0.4 | 50.8 | 34.4 | 1.0 | 0.4 | 3.5 | 8.6 | 4,025 |  |
|  | 2000 | 0 | 0 | 0.4 | 0.6 | 61.3 | 28.7 | 0.8 | 0.1 | 3.0 | 5.0 | 7,075 |  |
|  | 2005 | 0.1 | 0 | 0.7 | 0.4 | 67.2 | 21.6 | 0.7 | 0.3 | 3.3 | 5.6 | 15,185 |  |
|  | Neither | 1990 | 0.1 | 0.1 | 0.6 | 0.3 | 15.4 | 54.9 | 4.0 | 1.4 | 9.9 | 13.2 | 35,570 |
|  | 1995 | 0.3 | 0.1 | 1.2 | 0.4 | 12.7 | 48.2 | 2.4 | 1.4 | 8.3 | 25 | 26,570 |  |
|  | 2000 | 0.1 | 0.1 | 0.5 | 0.3 | 10.8 | 57.4 | 2.2 | 0.8 | 6.5 | 21.2 | 36,475 |  |
|  | 2005 | 0.2 | 0.1 | 0.3 | 0.2 | 9.7 | 51.7 | 3.0 | 0.8 | 8.8 | 25.1 | 30,030 |  |

Source: Longitudinal Immigration Database (IMDB) 2011.
Note: Percentages may not add up to 100 within categories, due to rounding.
For all four cohorts, Ontario is the most popular intended destination for English-only speakers and those who declare knowledge of neither official language. Among French speakers, Ontario declines in popularity over the time period (attracting 12.6 per cent of the French-speaking immigrants in 1990 and 8.9 per cent in 2005), while Quebec becomes an increasingly more popular destination. By contrast, fewer bilingual immigrants choose Quebec as their destination over time, with Quebec's share of bilingual immigrants gradually decreasing from 15.4 to 9.7 per cent.

Quebec also welcomes fewer Anglophone immigrants over time, reaching a peak with 8.7 per cent in 1990; the number drops slightly to 6.3 per cent by 2005 . Ontario absorbed the large spike of immigrants who spoke neither English nor French in the 1990s, and thereafter. Although only 13 per cent of immigrants in 1990 chose British Columbia as their intended destination, that number nearly doubled in 1995 and 2000. From 1995 onward, Ontario becomes less popular for French-only and bilingual speakers, and Manitoba attracts a greater share of French-only speakers.

Table 3 indicates intended, not actual, destinations; however, people may not necessarily move to (or stay in) the intended province of destination. In Table 4, we present disparities between intended destination and province of tax-filing one year after landing. Although it appears that many people do file taxes in their intended destination province, there are some noteworthy disparities. First, although Atlantic Canada (especially Newfoundland and Labrador) initially had some of the lowest one-year retention rates of any province, the region improved its record considerably over time. That said, for some the settlement rates (defined as those who settle in their stated destination) remain fairly low. New Brunswick, for example, in 2005 continued to receive only about $2 / 3$ of people whose stated destination was the province. Quebec and Ontario have consistently high retention rates across the cohorts.

What is interesting, however, is that there does not appear to be a clear trend regarding those who speak a language and are in the minority (English in Quebec and French in the rest of Canada). Although there are mixed settlement results for Francophones in Atlantic Canada, they tend to move on to Alberta and British

Columbia (and Saskatchewan for the last cohort). In two of the cohorts, Quebec receives a larger share of Anglophone immigrants than expected, but in most cases, there are fewer people of all language groups who file taxes in Quebec compared to the number of people claiming it as their destination.

The one trend that does stand out in Table 4 is the pull that western provinces have on newcomers to Canada. Already among the 1990 cohort, British Columbia receives a much larger share of immigrants than was intended, and it is joined by Alberta in subsequent cohorts (especially 2000 and 2005 arrivals) as a large beneficiary, as well as, increasingly, Manitoba and Saskatchewan.

Table 4. Disparity between numbers of immigrants intending to settle in province and numbers filing taxes in-province one year after landing, ${ }^{\text {a }}$ by official language spoken and cohort

|  | 1990 Cohort |  |  |  | 1995 Cohort |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Province | English | French | Both | Neither | English | French | Both | Neither |
| Newfoundland | 68.1 | $\mathrm{n} / \mathrm{a}$ | 100 | 44.4 | 69 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | 22.2 |
| Prince Edward Island | 90 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | 75 | 71.4 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | 100 |
| Nova Scotia | 91.5 | 50 | 100 | 77.3 | 57.3 | 33.3 | 37.5 | 53.2 |
| New Brunswick | 80.4 | 100 | 83.3 | 81 | 83.8 | 50 | 66.7 | 50 |
| Quebec | 80.3 | 95.2 | 92.7 | 84 | 110.6 | 99 | 103.9 | 90.7 |
| Ontario | 99.3 | 110.4 | 111.5 | 100.2 | 98.5 | 93.8 | 93.5 | 96.9 |
| Manitoba | 86.2 | 100 | 100 | 82.2 | 88.4 | 100 | 62.5 | 84.4 |
| Saskatchewan | 74.3 | $\mathrm{n} / \mathrm{a}$ | 100 | 64.9 | 81.1 | 0 | 66.7 | 77 |
| Alberta | 93.5 | 100 | 91.7 | 93.6 | 88.7 | 112.5 | 89.3 | 84 |
| British Columbia | 113.3 | 112.5 | 110.5 | 105.5 | 106.7 | 120 | 107.2 | 105.9 |
|  |  | 2000 Cohort |  |  |  | 2005 Cohort |  |  |
| Newfoundland | 71.9 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | 62.5 | 89.3 | $\mathrm{n} / \mathrm{a}$ | 150 | 78.6 |
| Prince Edward Island | 81.8 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | 100 | 72.2 | $\mathrm{n} / \mathrm{a}$ | 100 | 60 |
| Nova Scotia | 101.3 | 100 | 60 | 75 | 96.7 | $\mathrm{n} / \mathrm{a}$ | 95 | 93.8 |
| New Brunswick | 87.1 | 55.6 | 50 | 70 | 87 | 66.7 | 92.3 | 78.6 |
| Quebec | 109.3 | 98.6 | 99.3 | 87.6 | 97.1 | 99 | 97.2 | 98.6 |
| Ontario | 98.9 | 108.8 | 100.7 | 100.4 | 98.6 | 100 | 103.2 | 98.2 |
| Manitoba | 94.5 | 77.8 | 75 | 94.5 | 94.3 | 100 | 104.5 | 85.1 |
| Saskatchewan | 87.8 | $\mathrm{n} / \mathrm{a}$ | 100 | 80.3 | 95.1 | 150 | 80 | 88 |
| Alberta | 100 | 120 | 95.3 | 100.4 | 108.3 | 127.8 | 121 | 110.9 |
| British Columbia | 98.7 | 114.3 | 107 | 100.9 | 101 | 107.1 | 105.9 | 99.8 |

Source: Longitudinal Immigration Database (IMDB) 2011.
Note: $\mathrm{n} / \mathrm{a}$ denotes cells where counts are too small for disclosure.
${ }^{\text {a }}$ Calculated as (number filing in province / number destined to province) $\times 100$.

Looking at the percentage of immigrants in each province as a percentage of its initial landing cohort at the end of the 5th year (Table 5), we see stark differences between language groups.

Table 5. Net retention (\%) of immigrants in Quebec and Rest of Canada five years after landing, by language group of immigrants and arrival cohort

|  |  | 1990 | 1995 | 2000 | 2005 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Quebec | Neither | 78 | 76 | 84 | 80 |
|  | English | 72 | 66 | 75 | 73 |
|  | French | 79 | 76 | 82 | 86 |
|  | Both | 74 | 66 | 77 | 77 |
| Rest of Canada Neither | 88 | 91 | 91 | 91 |  |
|  | English | 83 | 84 | 85 | 87 |
|  | French | 83 | 109 | 96 | 107 |
|  | Both | 81 | 89 | 88 | 95 |

Source: Longitudinal Immigration Database (IMDB), 2011.
In the Rest of Canada category, we see net retention rates consistently over 80 per cent, with a net gain of Francophone immigrants in the 1995 and 2005 cohorts. By contrast, Quebec retention is generally in the 70 per cent range, with no net gain of immigrants in any of the language groups. Francophone immigrants generally have the highest retention of the four groups.

We further examine the extent to which community characteristics are a critical component of attraction and retention. In particular, we focus on the effect of living in an Official Language Minority Community, hypothesizing that Francophone or Anglophone immigrants will be more likely to stay in a community where there is a critical number of people (at least 10 per cent of the overall population or a minimum 1,000 people in a Census Sub-Division) that speak the same language as them. If there is a positive effect on retention, the preservation of OLMCs is not only important for diversity purposes, as argued in the introduction, but also as a means for attracting and retaining immigrants. To identify the effect that OLMCs have on retention, in the section below we account for many more individual-, household-, and community-level characteristics in a Cox Proportional Hazard framework.

## Multivariate results

## Canada excluding Quebec

Table 6 presents the results of four Cox Proportional Hazard models, one for each arrival cohort, on the propensity to move out of province. Controlling for other factors, the relationship between age and moving is negative, indicating a reduced propensity to move as age increases. When marriage has a significant influence on the hazard of moving, it is associated with a greater risk of out-migration for two cohorts. After increasing the propensity to out-migrate among 1990 arrivals, the presence of children has no significant effect among 1995 arrivals, then increasing the propensity to remain within the landing province among the latter two cohorts.

Results are consistent with the notion that those with the most human capital are the most mobile. In every cohort, more years of education increase the likelihood of leaving the province. The results for the admission category do not vary vastly between cohorts. In nearly all cases, Economic Class migrants have the highest propensity to out-migrate, except for refugees in the 1990 and 1995 cohort. The family class is consistently less likely to move than Economic Class and Refugees, as are Other category immigrants in all four cohorts. In reference to the highest income group, all lower income groups are more likely to move. In every cohort, immigrants in the lowest income group are the most likely to move, with the relative likelihood decreasing as income increases, suggesting individuals seek better incomes elsewhere.

In general, Ontario shows the best retention rate, as immigrants are more likely to out-migrate from most other provinces than Ontario. Out-migration likelihood is highest in Atlantic Canada, with immigrants residing in all Eastern provinces showing a higher likelihood of out-migration compared to Ontario. The two westernmost provinces of Alberta and British Columbia are the only ones to have lower out-migration propensities than the Ontario reference group, but for only one of the four cohorts each.

In terms of country of citizenship, immigrants from China are the most mobile in almost all cases. Over time, cohorts of Indian immigrants become less mobile compared to the reference group, and in the last cohort their out-migration rates do not significantly differ form those of the China group. Immigrants from the Philippines, U.K., and the U.S. are generally less likely than the Chinese to leave their province of landing. Immigrants from French-speaking countries are less inter-provincially mobile, and although the same is initially true for those from other English-speaking countries, the gap with the Chinese narrows and for the 2000 cohort the differences are not statistically significant. By 2005, "Other English" immigrants actually surpass Chinese in terms of out-migration.

Relative to English-only, French speakers and Bilingual immigrants are more likely to leave the original province of landing. Those who speak neither language are less likely to migrate in the first two cohorts, but interprovincial migration does not differ significantly between English-only and speakers of neither official language in the 2000 and 2005 cohorts.

Turning now to community characteristics, in all four cohorts the likelihood of remaining in province is higher when immigrants live in an OLMC, and even higher for French-speaking immigrants. This finding suggests that OLMCs do indeed help provinces retain immigrants, and that this is especially the case for minoritylanguage immigrants.

Several other community characteristics may improve retention of immigrants in the province. Census subdivisions with high homeownership rates, strong levels of human capital, and higher concentration of immigrants are significantly correlated with higher retention rates in almost all cases. Immigrants who live in rural

Table 6. Proportional hazard analysis of the propensity to move out of a province by immigrant arrival cohort, Canada except Quebec

|  | 1990 | 1995 | 2000 | 2005 |
| :---: | :---: | :---: | :---: | :---: |
| Individual characteristics |  |  |  |  |
| Age | 0.98*** | 0.97*** | 0.97*** | 0.98*** |
| Married | 1.18** | 0.95 | 1.07* | 1.00 |
| Presence of children | 1.20 *** | 0.96 | 0.92** | 0.85 *** |
| Education at landing |  |  |  |  |
| High school degree or less (Ref.) |  |  |  |  |
| College degree | 1.15*** | 1.20*** | 1.31*** | 1.18*** |
| Bachelor's or higher | 1.95*** | 2.14*** | 1.69*** | 1.43 *** |
| Admission category |  |  |  |  |
| Economic class (Ref.) |  |  |  |  |
| Refugee | 1.55 *** | 1.11*** | 0.84*** | 0.90** |
| Family class | 0.84*** | 0.72* | 0.58*** | 0.66*** |
| Other class | 0.87** | 0.65*** | 0.43*** | 0.66*** |
| Total individual income (2010) |  |  |  |  |
| Less than \$10,000 | 5.76*** | 2.23*** | 3.43*** | 1.84*** |
| \$10,000-\$19,999 | 2.64*** | 1.74*** | 2.16*** | 1.73 *** |
| \$20,000-\$29,999 | 1.75*** | 1.45 *** | 1.69*** | 1.52*** |
| \$30,000-\$39,999 | 1.42*** | 1.26*** | 1.45*** | 1.26*** |
| \$40,000 or more (Ref.) |  |  |  |  |
| Province of residence in previous year |  |  |  |  |
| NFLD | 4.65*** | 9.00*** | 2.99*** | 1.84*** |
| PEI | 7.10*** | 10.64*** | 4.50*** | 1.76** |
| NS | 4.29*** | 6.83 *** | 1.77*** | 1.51 *** |
| NB | 6.84*** | 11.55*** | 2.38*** | 2.11 *** |
| ON (Ref.) |  |  |  |  |
| MB | 4.78*** | 7.45*** | 1.95*** | 1.30*** |
| SK | 5.92*** | 8.50*** | 2.58*** | 1.18 |
| AB | 2.74 *** | 2.72 *** | 1.06 | 0.53 *** |
| BC | 0.78*** | 2.37 *** | 1.29*** | 1.00 |
| Country of citizenship |  |  |  |  |
| China (Ref.) |  |  |  |  |
| India | 0.49*** | 0.89 | 0.90** | 1.03 |
| Philippines | 0.24*** | 0.37*** | 0.59*** | 0.56*** |
| U.K. | 0.55 \%** | 0.43 *** | 0.72*** | 0.47 *** |
| USA | $0.59 * * *$ | 0.43 \%** | 0.55*** | $0.47 * * *$ |
| French-speaking country | 0.73** | 0.62*** | 0.77** | 0.82** |
| Other English | 0.40*** | 0.56 *** | 0.92 | 1.15** |
| Other | $0.46 * * *$ | 0.65 *** | 0.69*** | 0.80*** |
| Knowledge of official languages at landing French (Ref.) |  |  |  |  |
| English | 2.20** | 2.65 *** | 4.05*** | 3.90*** |
| Both official languages | 3.17 *** | 2.66 *** | 3.82*** | 2.73 *** |
| Neither official language | 0.90** | 0.90** | 0.96 | 1.05 |
| Community characteristics |  |  |  |  |
| French*OLMC | 0.40*** | 0.49** | 0.30*** | 0.31 *** |
| OLMC | 0.44*** | 0.48*** | 0.46*** | 0.54*** |
| \% Homeowner | 0.04*** | $0.04 * * *$ | 0.17*** | 0.15 *** |
| \% With university degree | $0.03 * * *$ | 0.02 \%** | 0.58 | 0.36*** |
| \% Immigrant | 0.16*** | 0.14*** | 0.04*** | 0.03 *** |
| Rural | 0.69* | 0.61 *** | 0.26*** | 0.47*** |
| Median neighbourhood income | 1.71*** | 1.48*** | 0.85** | 1.33*** |
| $N$ | 68,980 | 72,725 | 89,580 | 93,605 |

Source: Longitudinal immigration database (IMDB) 2011 and harmonized census files created by authors. Note: All income values are lagged by one year, to capture the values prior to moving as closely as possible. * $\mathrm{p}<0.01 ;$ ** $\mathrm{p}<0.05$; *** $\mathrm{p}<0.001$

CSDs are more likely to stay in their province than those in urban areas. In most cohorts, higher median $n$ eighbourhood income is associated with worse retention; it is perhaps because immigrants cannot afford living expenses in more expensive communities in their first 5 years after arrival, and then they give up, although this was not the case for only the 2000 cohort.

## Quebec

For the most part, the trends in Quebec are similar (Table 7).
Table 7. Proportional hazard analysis of the propensity to move out of a province by immigrant arrival cohort, Quebec

|  | 1990 | 1995 | 2000 | 2005 |
| :---: | :---: | :---: | :---: | :---: |
| Individual characteristics |  |  |  |  |
| Age | 0.988** | 0.988** | 0.979*** | 0.998 |
| Married | 0.989 | 1.002 | 1.149* | 0.768*** |
| Presence of children | 1.014 | 0.890* | 1.067 | 0.965 |
| Education at landing |  |  |  |  |
| High school degree or less (Ref.) |  |  |  |  |
| College degree | 0.967 | 1.019 | 0.993 | 0.965 |
| Bachelor's or higher | 0.966 | 1.428*** | 1.200* | 1.414** |
| Admission category |  |  |  |  |
| Economic class (Ref.) |  |  |  |  |
| Refugee | 1.704*** | 1.343*** | 1.165** | 0.796** |
| Family class | 0.859 | 0.870* | 0.822** | 0.793** |
| Other class | 1.226** | 0.694** | 0.533 | 0.749** |
| Total individual income (2010) |  |  |  |  |
| Less than \$10,000 | 1.708*** | 1.365** | 2.285*** | 1.328** |
| \$10,000-\$19,999 | 1.065 | 1.111*** | 1.707*** | 1.458*** |
| \$20,000-\$29,999 | 1.056 | 1.155* | 1.630*** | 1.427*** |
| \$30,000-\$39,999 | 0.969 | 1.243** | 1.185* | 1.338*** |
| \$40,000 or more (Ref.) |  |  |  |  |
| Country of citizenship |  |  |  |  |
| France | 0.965 | 0.367*** | 0.629** | 0.645** |
| China (Ref.) |  |  |  |  |
| Haiti | 0.312*** | 0.216*** | 0.246*** | 0.478** |
| Algeria | 0.470** | 0.523*** | 0.334*** | 0.294*** |
| Romania | 0.489** | 0.616*** | 0.615** | 0.622** |
| Morocco | 0.550** | 0.369*** | 0.032*** | 0.424*** |
| Other French | 0.578* | 0.302*** | 0.648** | 1.013 |
| Other English | 1.006 | 0.793** | 1.112 | 0.987 |
| Other | 0.597*** | 0.596*** | 0.712*** | 0.748*** |
| Knowledge of official languages at landing French (Ref.) |  |  |  |  |
|  |  |  |  |  |
| English | 1.580*** | 1.102 | 0.919 | 1.296** |
| Both official languages | 0.967 | 0.838 | 0.634** | 0.784** |
| Neither official language | 1.519*** | 1.121 | 1.179 | 1.544*** |
| Community characteristics |  |  |  |  |
| English*OLMC | 1.122 | 1.517*** | 1.670*** | 1.369** |
| OLMC | 0.244*** | 0.272*** | 0.307*** | 0.251*** |
| \% Homeowner | 0.111*** | 0.054*** | 0.062*** | 0.051*** |
| \% With university degree | 0.776*** | 0.684*** | 0.675*** | 0.668*** |
| \% Immigrant | 0.842*** | 0.972 | 1.153*** | 1.251*** |
| Rural | 0.601 | 1.22 | 0.872 | 0.860 |
| Median neighbourhood income | 2.520*** | 2.576*** | 2.995*** | 3.201*** |
| $N$ | 13,340 | 10,930 | 15,460 | 20,890 |

Source: Longitudinal immigration database (IMDB) 2011 and harmonized census files created by authors.
Note: All income values are lagged by one year, to capture the values prior to moving as closely as possible.

* $\mathrm{p}<0.01 ; ~ * * \mathrm{p}<0.05 ; * * * \mathrm{p}<0.001$

As was the case for the rest of Canada, older people are significantly less likely to leave the province in all but one cohort. For most cohorts, marriage and children do not affect out-migration, although immigrants with children are significantly less mobile in the 1995 cohort, and married immigrants are more likely to move in 2000, and less likely in 2005. The relationship between human capital and migration is not as clear as it was in the Rest of Canada, although for three of the cohorts, post-secondary education is associated with a higher likelihood of migration. Those with a college degree do not have significantly different migration patterns from those with a high school diploma or less.

In terms of admission class, refugees are the most mobile group in the earliest three cohorts, but their propensity to out-migrate decreases with time, with Economic Class migrants being the most likely to leave the province in 2005. Family Class immigrants are consistently less likely to move than the reference group (though only significantly so for the latter three cohorts), and Other Immigrant category is more likely to move in the earliest cohort, but less likely in the 1995 and 2005 cohorts. Individuals in the lowest income category are, in most cohorts, the most mobile group. Unlike the rest of Canada, however, propensities do not decline as rapidly with increases in income.

As was the case with the rest of Canada, Chinese citizens are the most mobile-with all citizenship countries showing significantly lower out-migration rates, except for individuals from Other English in two cohorts and, in one case, Other French countries (who do not significantly differ). Immigrants from the Francophone countries Haiti, Algeria, Morocco, and Other French countries consistently show some of the lowest outmigration propensities. English speakers and those who speak neither official language are significantly more likely to out-migrate than French speakers in two of the cohorts, while bilingual speakers show better retention rates in the two latter cohorts.

The trends for linguistic characteristics of the community resemble those in the Rest of Canada in that OLMCs better retain immigrants, in general. However, English speakers tend to leave the province, in the three latter cohorts, when they live in an OLMC (as reflected in the English*OLMC interaction term).

Census subdivisions with high homeownership rates, and highly educated residents, tend to retain their immigrant neighbours, for the most part; but unlike the rest of Canada, regions with higher immigrant concentrations, although initially more likely to retain, have higher out-migration rates over time. Also contrary to the Rest of Canada, there is no significant difference in retention between rural and urban areas. As with the rest of Canada, higher median community income is associated with higher out-migration rates.

## Is there an 'OLMC effect'?

In the regression results above, we find statistically significant differences in out-migration propensities between OLMCs and non-OLMCs. In most instances, in Canada except Quebec (rest of Canada), OLMCs retain immigrants better than non-OLMCs, and retain Francophones better than other immigrants. Consequently, provinces interested in retaining both Francophone and non-Francophone immigrants should work to maintain their OLMCs.

In Quebec, the story is slightly different. Although OLMCs help with immigrant retention, the pull is not quite as strong for Anglophones. For three of the four cohorts, Anglophone immigrants are more likely than other immigrants to leave the province when they live in an OLMC. This finding is interesting, and warrants further investigation. One potential explanation is that because the majority of census subdivisions in Quebec are OLMCs, we are not measuring an 'OLMC effect' that is as pure as that in the rest of Canada. Although we chose to use the same definition of OLMC throughout Canada (and experimented with different thresholds), results may differ if a higher threshold was set for Quebec.

Using the 10 per cent or 1,000 threshold, in Figures 1 and 2 below we demonstrate the retention rates of immigrants in OLMCs versus non-OLMCs in Canada, holding all other characteristics constant.

In every instance, provincial retention rates are much higher in OLMCs than they are in non-OLMCs, suggesting that in addition to maintaining the lingual diversity of the country, OLMCs also seem to be effective tools of provincial retention for newcomers to Canada.


Figure 1. Adjusted provincial retention rates of official language minority communities, Canada except Quebec.
Source: Longitudinal Immigration Database (IMDB) 2011 linked file created by the authors.


Figure 2. Adjusted provincial retention rates of official language minority communities, Quebec.
Source: Longitudinal Immigration Database (IMDB) 2011 linked file created by the authors.
A similar story is true in Quebec, although the OLMC/non-OLMC differences are even more pronounced for immigrants (keeping in mind that this result is for all immigrants, not just Anglophones). Although five-year retention rates for OLMCs are 80 per cent or higher for each of the above cohorts, for non-OLMCs it ap-
proaches 20 per cent for the 2000 and 2005 cohort. For the earlier two cohorts, it is even lower, suggesting that immigrants who land in a non-OLMC in Quebec have a very high out-migration propensity.

## Discussion and conclusions

In this article we identify several individual and community-level characteristics of Anglophone and Francophone immigrant provincial retention. Of central interest is the effect of living in an Official Language Minority Community (OLMC) on the provincial retention of immigrants, and more particularly of immigrants of the official language minority. We define an OLMC as a Census Subdivision where either 10 per cent of the population or 1,000 people declare the ability to speak English (Quebec) or French (rest of Canada). This is an admittedly broad definition, and was chosen to ensure that each province contains at least one OLMC. One result of this choice, however, is that nearly three-quarters of all CSDs in Quebec were OLMCs, and the vast majority of immigrants in that province therefore settled in an OLMC. In future work, it might be better to use different definitions of an OLMC across the country.

We find that the propensity to leave a province shortly after landing declines with age, and that individuals immigrating through the Family Class are more likely to remain in their province of landing. Although not true for all cohorts, the propensity to move increases with levels of education, and decreases with a rise in income. Out-migration from Atlantic Canada was clearly evident, at least initially, with substantial improvements over the period. There were wide differences across countries of citizenship, with Chinese immigrants having the highest rates of out-migration in both Quebec and the rest of Canada.

For Canada except Quebec, French-speaking and bilingual immigrants are more likely to provincially outmigrate, and while immigrants who speak neither English nor French are more likely to stay in their landing province in the earlier cohorts, their migration trends do not differ from those of English speakers in the 2000 and 2005 cohorts. It is difficult to identify why this is the case without looking at the migration trends more directly, although one possibility is that French-speaking and Bilingual immigrants may have access to more opportunities for work outside their initial province of landing. In Quebec, the trend is less consistent, but we do find out-migration to be higher among Anglophones and those who speak neither official language. English/ French speakers are more likely to stay in Quebec, in two of the cohorts. Even in communities with at least 10 per cent, or 1,000 English speakers, Anglophone immigrants are still more likely to out-migrate.

Another finding in this article is the importance of community characteristics. High homeownership communities have much higher provincial retention rates, as, for the most part, do regions with high average education levels. Immigrant communities have opposite effects in Quebec and the rest of Canada, with Quebec immigrant communities being less likely to retain other immigrants. Higher neighbourhood income consistently leads to higher rates of out-migration, presumably because recently arrived immigrants do not have the means to live in wealthier neighbourhoods (recall that in each cohort, at least 58 per cent of our sample had incomes below $\$ 40,000$ ).

Given that one of the primary goals of both Canada's 2008 and 2013 Roadmaps was to nurture the growth of OLMCs, the demonstrated impact of community characteristics is significant, because it shows how important communities are for the immigrant experience, especially for those who speak the minority language. In the rest of Canada, OLMCs successfully retained Francophone immigrants better than non-OLMCs. Considering that the Francophones make up roughly 1 per cent of the immigrant cohort, these OLMCs serve a crucial role in Francophone immigrant retention in the rest of Canada. Interestingly, the effect is the opposite for Anglophones living in English speaking communities in Quebec. Thus, these results strongly support the 2013 Roadmap's focus on immigration in Official Language Minority Communities, which support the vitality of linguistic minorities.

More research is needed on why the finding is different in Quebec, but for now it suggests that OLMCs can be used as anchors for those who speak French in the Rest of Canada. Follow-up research could investigate what exactly it is about OLMCs that fosters the retention of immigrants. Is the generation of social capital with same-language speakers in the community crucial to long-term settlement?

As with most statistical analysis, there is always the risk of unobserved heterogeneity between populations, and this is also the case here. Although the results show that OLMCs retain immigrants better, it may be because immigrants who move to OLMCs differ from those who don't. As such, part of the 'OLMC effect' may be in the ability to recruit, rather than retain, immigrants to a jurisdiction.

This study looked at how community characteristics shape provincial out-migration, but the scope may have been too wide to capture the full effect of OLMCs. After all, those who left an OLMC but stayed in the province are not captured in our analyses. Future research could identify the impact that OLMCs also have on that kind of intra-provincial retention.

There are also measurement issues at the individual level. Self-reported language ability may be unreliable, especially at time of landing, and it is possible that immigrants that identify as fluent in English or French are not as fluent as they initially believed. This could bias the OLMC effect towards zero, as individuals leaving an OLMC are actually not fluent in English or French, and would therefore gain none of the benefits of being surrounded by English- or French-speakers.

Future research might look more closely at the effect that the choice of definition of OLMC has on results. In our definition, over 90 per cent of immigrants land in an OLMC, and it might be useful to experiment with different definitions of OLMC, even if it means that some provinces no longer have an OLMC. This would be useful to identify the robustness of the patterns outlined in this article. The definition of OLMCs may be different in Quebec than in the rest of Canada, where even more CSDs were classified as OLMCs, and thus almost all immigrants landed in an OLMC. Further to this, it might be useful to delve deeper into the characteristics of the OLMC. Do OLMCs composed of immigrants, for example, have different retention characteristics than more established OLMCs?

## Acknowledgments

An earlier version of this paper was presented at the 2015 Annual General Meeting of the Population Association of America, and at the 2015 Meeting of the Federation of Canadian Demographers. We wish to thank the audiences of both conferences for their helpful comments and questions, and to Kyle Crowder for his detailed feedback on a draft of this article.

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[^0]:    1. Corresponding author: Michael Haan, Canada Research Chair in Migration and Ethnic Studies, Department of Sociology, 5306 Social Science Centre, Western University, London, ON, Canada, N6A 5C2, email: mhaan2@uwo.ca; Jake Arbuckle, Population Growth Division, Government of New Brunswick; Elena Prokopenko, University of New Brunswick.
[^1]:    2. According to the 2011 Census, 7.7 per cent or 599,230 members of the Quebec population reported their mother tongue as English; 9.8 per cent or 767,415 reported English as the language most spoken at home. See https://www12.statcan.gc.ca/ census-recensement/2011/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=Eng\&GK=PR\&GC=24 (accessed 28 January 2017).
    3. Defined as an Anglophone Minority Community in Quebec, or a Francophone Minority Community in the Rest of Canada.
    4. This study does not look at the intra-provincial mobility of immigrants, that is, immigrants who move from one community to another community within the same province. While this would be an interesting study, it is outside the scope of this article.
[^2]:    5. Since Quebec is largely responsible for its own immigrant streams, and minority communities are defined as Anglophone in the province, most of the report focused on Francophone immigration in the rest of Canada.
    6. Of note, immigrants nominated by a province or territory generally sign a commitment to reside in the province that nominated them; however, as above, there is no legal basis for the revocation of permanent residency from a provincial nominee. As such, retention strategies become increasingly more important.
    7. Trovato and Halli also note that the French were more likely to migrate intra-provincially within Quebec than interprovincially outside Quebec.
[^3]:    8. Anglophone immigrants in Quebec are also of interest, even though Citizenship and Immigration Canada's mandate does not include selection and integration in Quebec.
[^4]:    9. This means that we likely missed some mobility during the landing year. We chose to begin observing individuals in year $t+1$ because we didn't know when individuals landed in the prior year, which would introduce error into many of our parameter estimates (particularly the income variables).
