

# Citizenship Acquisition of Immigrants in Canada: Trends and Determinants

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## Abstract

This paper analyses citizenship acquisition of immigrants in Canada, using census data during the 35-year period from 1981 to 2016. The paper examines individual characteristics of immigrants and variation in their countries of origin. The paper investigates trends in citizenship acquisition in two ways: decomposition of rates for overall changes and multivariate analysis of trends after considering individual characteristics and variation in their country of origin. Both individual characteristics and origin-country variables are found to be important determinants of Canadian citizenship acquisition.

## Introduction

Compared to the vast research literature on the socioeconomic advancement of immigrants in receiving countries, studies of naturalization or citizenship acquisition are relatively limited. Citizenship acquisition among immigrants, however, influences a wide range of social and economic outcomes. Citizenship rates are connected in most immigrant-receiving countries to the right to vote, which has important political consequences. Most immigrant-receiving countries have visa categories for the sponsorship of family and relatives that depend upon citizenship status. Citizenship gives immigrants the right to obtain and use passports of their destination country. Countries often restrict social programs and employment, such as work in government agencies, to its citizens.

This paper examines citizenship acquisition in Canada during the 35-year period from 1981 to 2016 using data from population censuses that collect information from immigrants every five years. It analyses data for trends over 35 years and provides multivariate analysis of census microdata samples of individual immigrants, with linked information about their origin countries.

The plan of this paper is as follows. The next section provides a brief description of the conceptual framework for the study, including discussion of previous studies of citizenship acquisition in Canada. The following section reviews data on citizenship acquisition for immigrants in Canada and describes explanatory variables for the study. This section also describes the multivariate analysis that is used to study the determinants of citizenship acquisition. Next, the paper analyses the trend in citizenship acquisition, including decomposition of two factors affecting overall changes. The following section

presents statistical results from the analysis of individual characteristics and origin-country contextual variables. Lastly, there is a section that summarises and discusses the findings of the analysis.

## Conceptual Framework

The conceptual model used in this paper recognizes three types of variables: (1) personal characteristics of the immigrant that reflect a commitment to the destination country, (2) personal characteristics that indicate the benefits of citizenship acquisition for the immigrant, and (3) features of the country or region of origin that may affect citizenship acquisition in the destination country. The first two variables are based on individual characteristics that are available in microdata samples from Canada's population censuses. The third type of variable requires separate collection of contextual data on the immigrant's country or region of origin from other sources. These variables are discussed below.

Variables related to an immigrant's commitment to their destination country involve direct and indirect measures such as knowledge of the official language(s) of the destination country, marital status, and duration of years since arrival in the destination country (Bernard, 1936; Chiswick, 1978; Kelley and McAllist, 1982; Evans, 1988; and Yang, 1994 and 2002; Bloemraad, 2017; and Edmonston, 2021). The presence of children in the household can also be included as an indication of stronger attachment to the destination country.

There are several variables that relate to benefits that immigrants might obtain by acquiring citizenship in their destination country. A review of the literature by Devoretz (2013) found that some groups of immigrants received higher earnings and better employment opportunities by obtaining citizenship. Immigrants with higher education are more likely to seek citizenship to widen their employment opportunities. Likewise, immigrants living in metropolitan areas where there is a greater variety of possible employment may be more willing to pursue citizenship than immigrants living in rural areas or small towns where citizenship does not create better employment prospects. Previous research has also noted the potential influence of visa category for citizenship acquisition (Jasso and Rosenzweig, 1986; Portes and Curtis, 1987). Immigrants with employment-related visas are more likely to seek citizenship because of the benefits of citizenship lead to a greater variety of employment opportunities. Information about visa category of immigrants, however, is seldom collected in censuses and, therefore, this variable is not included in this study.

Jasso and Rosenzweig (1986) was one of the earlier studies to include variables on the origin-country of the immigrants. They argued that contextual variables are important for immigrant decisions about citizenship acquisition because they reflect the comparison of the features of the origin and destination countries. If the characteristics of the destination country are more attractive than the origin country in terms of social, economic, and political conditions, immigrants would be more likely to seek citizenship. Various contextual variables about the origin-country have been included in prior research. This study includes four variables that are particularly related to citizenship acquisition in

Canada. These include permission by the origin-country for dual citizenship, mandatory military service, per capita income, and whether the origin country has a democratic or an autocratic government.

There are many empirical studies that have analysed factors associated with the citizenship acquisition of immigrants in Canada. Mata (1999) carried out an exploratory data analysis to isolate the relative contribution of economic and non-economic forces in determining rates of citizenship and concluded that there is no economic evidence to support immigrant naturalization and that non-economic forces are more significant. His analysis has not been confirmed, however, by empirical studies in other countries nor by other studies in Canada.

Bloemraad (2004; 2006) addressed the question of Canadian immigrant naturalization and highlighted the importance of the dual citizenship option open to some immigrants, which significantly affected naturalization rates. The conclusion to be drawn from this body of literature is that citizenship acquisition, when researched in isolation from other factors, leaves a minor role for economic determinants. When contrasted with other empirical studies, it demonstrates the need for more comprehensive model construction with the inclusion of more important individual and contextual variables.

Devoretz and Pivnenko (2005; 2008) examined the economic costs and benefits derived from immigrant citizenship acquisition. They found sizeable economic benefits of citizenship, and interpreted the results as evidence that more productive immigrants self-select economic benefits through citizenship. They argued that immigrants in either the United States or Canada earned an income premium after citizenship acquisition.

Picot and Hou (2011) examined Canada and United States data in a comparative analysis of key determinants for citizenship acquisition. Their study also included discussion of the economic benefits of citizenship for immigrants in both countries.

Bloemraad (2017) offered a comprehensive review of factors related to citizenship acquisition, with citations of Canada and other countries by discussing the link between different categories of immigrants, and motivations for citizenship acquisition. Her review, however, does not include empirical analysis for citizenship acquisition in Canada.

Hou and Picot (2019) examined trends in the citizenship rate. The citizenship rate among recent immigrants aged 18 and over peaked in 1996 and declined continuously to 2016. Most of this decline occurred after 2006. The citizenship rate declined the most among immigrants with low family income, poor official language skills, and lower levels of education. There was also significant variation in the decline among immigrants from different source regions, with the decline being the largest among Chinese immigrants. Their study was limited to recent immigrants and should be confirmed with studies of all immigrants.

The present paper adds to the existing research in three ways. First, it updates previous work with the most recently available census data. Second, unlike prior research that are cross-sectional studies, this study provides multivariate analysis of trend data for the period 1981-2016. Finally, the analysis includes both individual characteristics and selected contextual variables that influence the decision to obtain citizenship.

## Data and Methods

Two broad types of variables are considered in the multivariate analysis: individual characteristics and contextual factors related to the countries of origin of the immigrants. The contextual factors are linked to individuals for the multivariate analysis.

### Individual Characteristics

Canadian citizenship of immigrants is the key variable for this study. It is a binary variable that takes the value of 1 if the immigrant has acquired Canadian citizenship and 0 otherwise. The independent variables for the analysis include age and sex of the immigrant, duration of residence since immigration, educational attainment, knowledge of English or French or both languages, whether the immigrant is residing in a metropolitan area or not, and family structure. These variables have been selected based on the available literature. Previous research has found that the relationship of the immigrant's sex and citizenship varies, with some research finding higher rates for females in United States of America (Chiswick and Miller, 2009) and in European countries (Dronkers and Vink, 2012) while others reporting higher rates for males in Canada (Hou and Picot, 2019). We expect age to have a positive relationship with citizenship acquisition. The duration of residence since immigration is expected to be strongly and positively related to citizenship acquisition. We do not expect duration of residence to be linearly related to citizenship acquisition, so we have included a categorical variable with five-year categories of the duration of residence.

Educational attainment is an important variable for citizenship acquisition. We assume that immigrants with higher education are more likely to seek citizenship. Moreover, immigrants with higher education may feel more comfortable taking the citizenship test that is required for Canadian citizenship. Knowledge of English, French, or both languages is included as a measure of language proficiency. Immigrants with greater language proficiency are likely to be more at ease with applying and completing the citizenship process. Similarly, immigrants living in metropolitan areas are assumed to be more familiar with the citizenship application process and find it easier to complete the process than immigrants living in rural areas and small towns. Finally, family structure is included to take into account differences in immigrants who live in a married or consensual union rather than living alone, as a single parent, with other relatives, or with non-family persons. Immigrants who live in a family with a married or consensual partner are expected to have a greater attachment to Canadian society and are more likely to seek Canadian citizenship. We have included a separate variable for immigrants living in a households with children because we expect them to be more likely to acquire Canadian citizenship.

### Country of Origin Variables

We have also included four contextual variables related to the country of origin in the analysis. The first variable is whether the immigrant's country of origin permits dual citizenship, which has benefits and disadvantages. We expect that immigrants from countries that permit dual citizenship will be more likely to acquire Canadian citizenship. The second contextual variable is whether military service is mandatory in the country of origin or not. Mandatory military service may be a strong motivation for some young adults to emigrate and seek citizenship in other countries. We expect that immigrants from

countries having mandatory military service for its citizens are more likely to seek Canadian citizenship to avoid military service in their country of origin. The third contextual variable is per capita income coded in four categories following the World Bank classification – low income, lower-middle income, upper-middle income, and high income (World Bank, 2023). We expect that there is a negative relationship between the income of the origin country and the likelihood of acquiring Canadian citizenship. The last contextual variable is the polity indicator which codes countries in three categories by the predominant type of government. The polity indicator is based on a composite “polity score” that ranges from -10 for autocracy to +10 for democracy (Marshall and Gurr, 2020). The polity score is collapsed into three categories: +6 to +10 for democracy; -5 to +5 for anocracy or semi-democracy; and -10 to -5 for autocracy. We expect that immigrants from countries with semi-democratic or autocratic governments are more likely to seek Canadian citizenship.

### Statistical Analysis

The binary logit model has been used in the analysis. Since the model is nonlinear, the magnitude of change in the outcome probability associated with change in one explanatory variable depends upon the level of all other explanatory variables. The logit model considers binary outcomes in terms of the odds of observing the positive outcome against the negative outcome, as follows:

$$\Omega = \frac{Pr(y=1)}{Pr(y=0)} = \frac{Pr(y=1)}{1-Pr(y=1)} \quad (1)$$

The log of the odds is called the logit, and the logit model is linear in the logits. The log odds are a linear combination of the explanatory variables,  $x$ , and the estimated coefficients,  $\beta$ . A logit model with two explanatory variables is:

$$\ln \left\{ \frac{Pr(y=1):x}{1-Pr(y=1):x} \right\} = \ln \Omega(x) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 \quad (2)$$

Equation (2) indicates that a unit change in  $x_i$  results in a change in the logit by  $\beta_i$ , holding all other variables constant. The challenge in interpreting the estimated coefficients is that a change of  $\beta_k$  has little substantive meaning. A common approach is to interpret the exponential of  $\beta$  as the change in odds ratio. For example, if  $\exp(\beta_k)=2$ , the change in the odds of the outcome variable is 2 times larger, holding all other variables constant.

There is, however, a serious problem in interpreting the odds ratio in social science research because outcome variables typically have values greater than the small likelihoods observed in epidemiology and related medical research. Table 1 shows result of doubling the original odds ratio and the resulting probabilities for different odds ratios. When the original odds ratio is small, such as less than 2/100, doubling of the odds ratio results in roughly a doubling of the resulting probabilities. However, when the original odds ratio is close to 1/1, or an implied probability of 0.500, the doubling of the odds ratio results in probabilities that vary greatly, depending upon the original odds ratio. When the original odds ratios is between 1/2 and 2/1, there is no understandable interpretation for a coefficient that “doubles the odds ratio” because the differences in the resulting probabilities depend upon the original odds ratio. Finally, when the original odds ratios is greater than 100/1, the doubling of the odds ratio yields little substantive change in the resulting probabilities.

Table 1: Results of the constant factor change in the odds ratio and the resulting change in the probability.

Original odds ratio	Implied original probability	2×odds ratio	Resulting probability	Ratio of resulting to original probability
1/1000	0.001	2/1000	0.002	1.998
1/100	0.010	2/100	0.020	1.980
2/100	0.020	4/100	0.038	1.962
1/2	0.333	2/2	0.500	1.500
1/1	0.500	2/1	0.667	1.333
2/1	0.667	4/1	0.800	1.200
100/1	0.990	200/1	0.995	1.005
200/1	0.995	400/1	0.998	1.002
1000/1	0.999	2000/1	1.000	1.000

Source: Author

The outcome or the study variable in the present study has probabilities that typically range from 0.5 to 0.9, depending upon the explanatory variables used in the analysis. This is in contrast to the medical and epidemiological research which generally focusses upon rare events so that the probabilities are small. As such and, with reference to table 1, it is not useful to interpret regression coefficients of the logit model in terms of the odds ratio. Instead, an alternative but more meaningful approach is to interpret regression coefficients in the logit model in terms of the predicted probabilities. The predicted probabilities for categorical explanatory variables can be estimated for the fixed values of categorical explanatory variables. For the continuous explanatory variables, on the other hand, predicted probabilities can be calculated for selected fixed values of the continuous explanatory variables holding all other explanatory variables constant (Long and Freese, 2014).

There is also a question whether determinants of male and female citizenship rate should be analysed separately or as a group by including a binary variables for sex or an interaction term for sex with other explanatory variables should be included in the analysis. We investigated this question by comparing the predicted values of citizenship rate with two explanatory variables - duration of residence (coded as a categorical variable) and sex (coded as a binary variable), using the merged data from different population census between 1981-2016. The results of the analysis are presented in figures 1 and 2 which suggest that male citizenship rate exceed female citizenship rate by around 1.3 percentage points. Moreover, the predicted values of male and female citizenship rates closely fit the observed rates for all categories of the duration of residence. We also analysed whether a logit equation that includes an interaction term for sex and duration of residence is statistically significant or not and found that the interaction term is not statistically significant. Chiswick and Miller (2009) have also observed in their study that the interaction term is weak in predicting the citizenship rate, As such we have decided to analyse determinants of citizenship rates using the pooled data for male and female immigrants with binary explanatory variable sex of the immigrant as an explanatory variable.

CITIZENSHIP ACQUISITION OF IMMIGRANTS IN CANADA

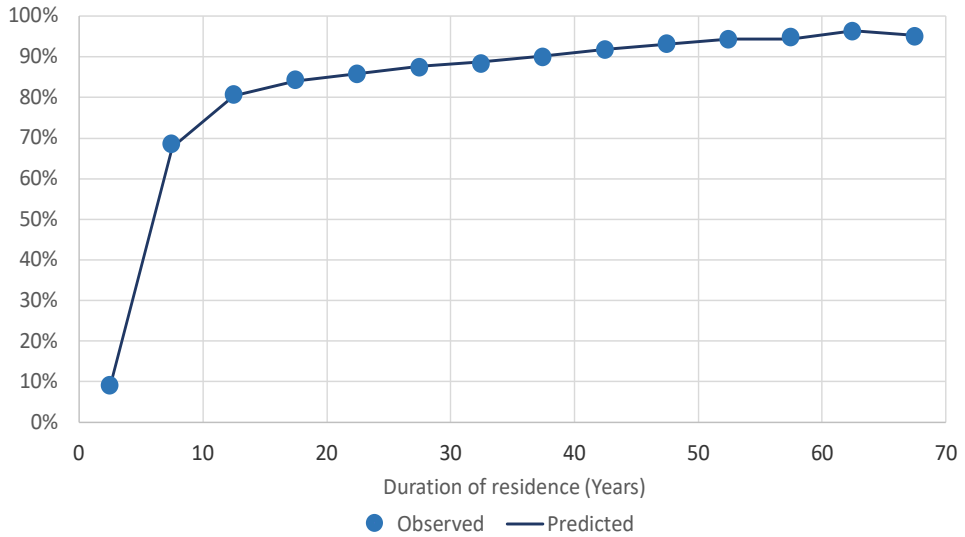


Figure 1: Observed and predicted citizenship rates among female immigrants by duration of residence in Canada, 1981-2016.

Source: Author

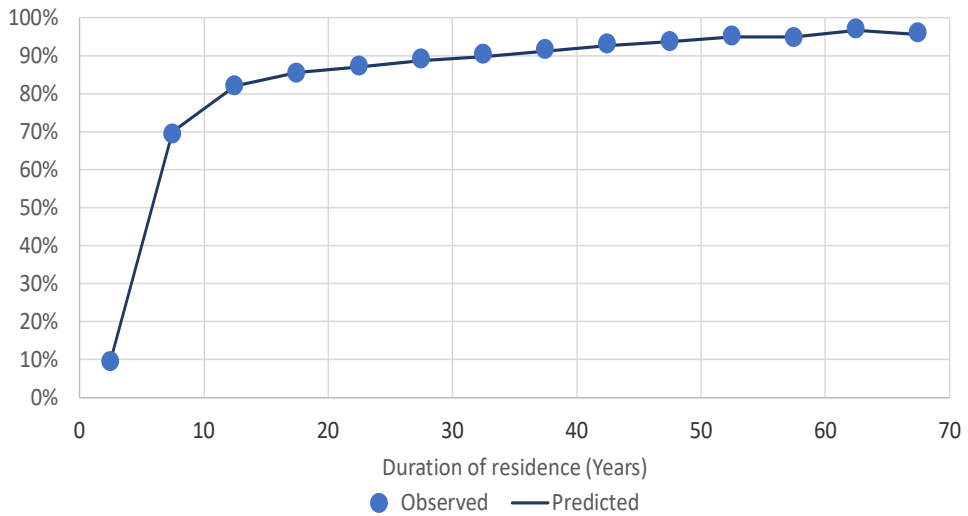


Figure 2: Observed and predicted citizenship rates among male immigrants by duration of residence in Canada, 1981-2016.

Source: Author.

## Trend in Citizenship Rate

Immigrants to Canada have relatively high rates of citizenship acquisition compared to other western countries (Picot and Hou, 2011). Since 1981, the proportion of the foreign-born who reported Canadian citizenship has generally increased with modest fluctuations (Figure 3). In 1981, 69.1 per cent of immigrants reported that they had acquired Canadian citizenship. Except for decreases in during 1991-1996, the Canadian citizenship rate among immigrants increased to 77.3 per cent in 2006. Although the proportion reporting Canadian citizenship decreased after 2006 to 75.1 per cent in 2016, yet there has been an overall gain of 6.0 percentage points since 1981.

Changes in the proportion of the foreign-born reporting Canadian citizenship is affected by several factors. First, requirements for Canadian citizenship have varied because of changes in Canada's *Citizenship Act*, which stipulates the legal requirements for Canadian citizenship. Currently, there are five mandatory requirements for citizenship: (1) be a permanent resident, (2) have lived in Canada for 3 out of the last 5 years, (3) filed taxes if required, (4) pass a test on knowledge of Canada and the rights and responsibilities of citizens, and (5) demonstrate language skills in either English or French. These requirements have varied in the past. For example, in previous years applicants needed to reside in Canada for five years, which was changed to a requirement of three years, and then to a requirement of four out of the previous six years. Changes in federal requirements affect the timing of citizenship applications even if they did not have a major influence on the level of Canadian citizenship acquisition over a person's lifetime.

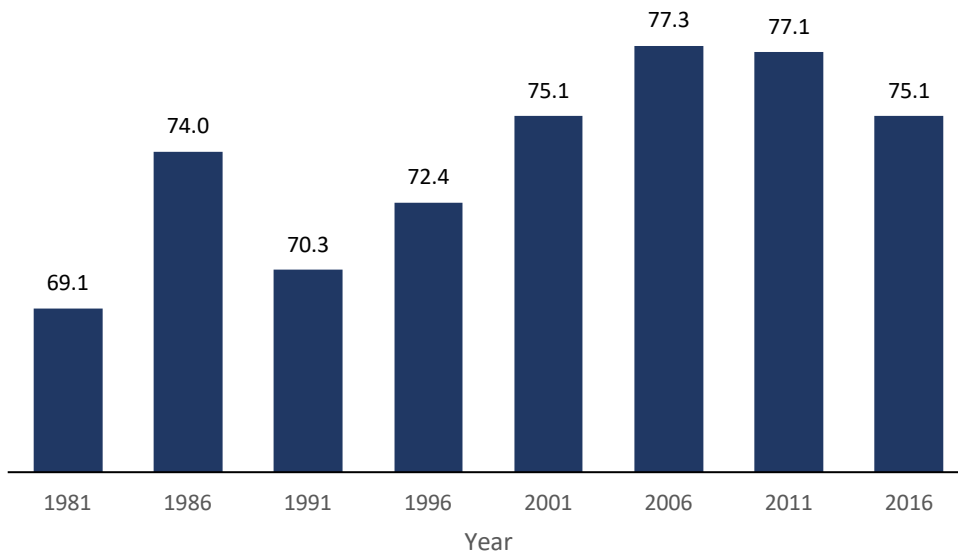


Figure 3: Trend in citizenship rate of immigrants in Canada, 1981-2016.

Source: Author



Second, citizenship rates are influenced by changes in the background of immigrants and timing of their arrival. The two most important factors affecting the citizenship rate are: (1) duration of residence since arrival in Canada and (2) country of birth. The duration of residence is important because immigrants cannot apply for Canadian citizenship until they have resided in Canada for several years. The proportion reporting Canadian citizenship for the foreign-born population increases markedly in the first 20 years after arrival (Figure 4). For immigrants residing in Canada for more than 20 years, there are steady but small gains. A large increase in the volume of immigration creates an immigrant population with fewer years of residence, which tends to reduce the citizenship rate. Likewise, if fewer immigrants arrive in Canada, the proportion of the foreign-born population with longer durations of residence increases, which tends to increase citizenship rate.

The other factor affecting citizenship rate is the country of birth. Some immigrants come from countries in which they are more likely to seek Canadian citizenship, perhaps because they do not plan to return or want to travel with Canadian passport. On the other hand, some immigrants do not see any reason to seek Canadian citizenship, perhaps because they prefer to retain citizenship in their country of origin. Figure 5 illustrates the variations citizenship rate for four regions of origin, for immigrants who have resided in Canada for at least 20 years to control the variation in the duration of residence. Immigrants from Europe have the highest citizenship rate. Immigrants from Asia or from other countries report lower levels of citizenship rate. Immigrants from the United States report relatively low levels of citizenship rate. These results indicate that overall levels of citizenship rate are likely to be affected by shifts in the countries of origin of immigrants, as well as changes in the duration of residence.

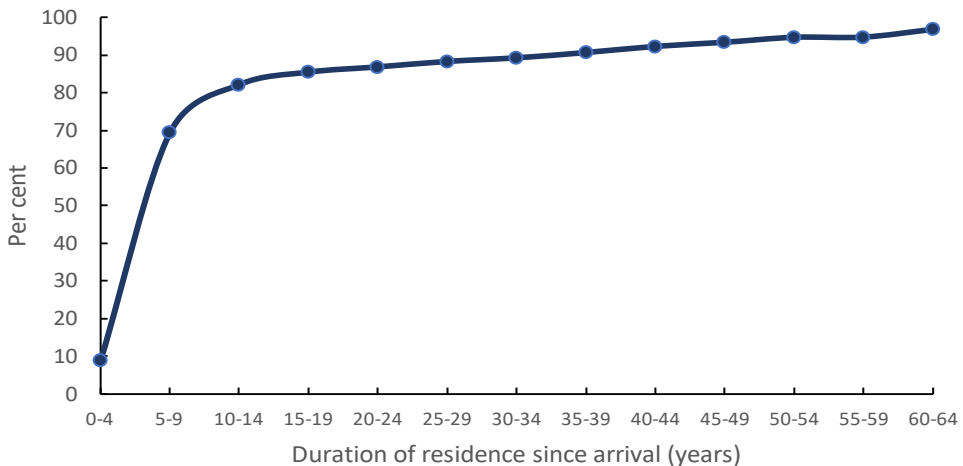


Figure 4: Citizenship rates by duration of residence in Canada among immigrants with at least 20 years of residence.

Source: Author

If we want to compare the change in the citizenship rate between 1981 and 2016, we need a method that contrasts the effects of changes in the composition as well as changes in the cell-specific rates of citizenship. There are different statistical methods available for decomposing the difference between two rates. One approach, proposed by Das Gupta (1991), involves the effect of differences in cell-specific rates. This approach is particularly useful for analysis of citizenship rates that involves factors that account for the differences in cell-specific citizenship rates for two points in time. If the cross-classification of citizenship status in 1981 and 2016, for example, involves one factor, such as duration of residence, then the decomposition generates two additive effects: the duration of residence-effect and the rate-effect. The duration of residence-effect indicates the influence of differences in the duration of residence composition between 1981 and 2016. The rate-effect measures the influence of differences in duration of residence-specific citizenship rates on the overall citizenship rate.

Suppose there are  $k$  sub-groups of immigrants and  $r_i$  is the citizenship rate for the sub-group  $i$ . Then, the citizenship rate of all immigrants combined,  $r$ , can be expressed as

$$r = \sum_{i=1}^k p_i x_i \quad (3)$$

where  $p_i$  is the proportion of immigrants in the sub-group  $i$ . If superscript  $a$  is used to denote the year 1981 and superscript  $b$  is used to denote the year 2016, then the difference between  $r^a$  and  $r^b$  can be decomposed as

$$r^b - r^a = \sum_i \frac{(p_i^b + p_i^a)(r_i^b - r_i^a)}{2} + \sum_i \frac{(p_i^b - p_i^a)(r_i^b + r_i^a)}{2} \quad (4)$$

The first factor on the right of equation (4) is the contribution of the change in rate while the second is the contribution of the change in the composition. In the present study, the two factors are region/country of origin ( $x_1$ ) and duration of residence ( $x_2$ ). Therefore, their contribution to the difference between  $r^a$  and  $r^b$   $C(x_1)$  and  $C(x_2)$  can be calculated as:

$$\begin{cases} C(x_1) = \sum_i \frac{(p_i^b + p_i^a)(r_i^b - r_i^a)}{2} + \sum_i \frac{(p_i^b - p_i^a)(r_i^b + r_i^a)}{2} \\ C(x_2) = \sum_i \frac{(p_2^b + p_2^a)(r_2^b - r_2^a)}{2} + \sum_i \frac{(p_2^b - p_2^a)(r_2^b + r_2^a)}{2} \end{cases} \quad (5)$$

Intuitively, the contribution of a factor lies in its conditional effect on the mean values of the other factor. The relative contribution of  $x_1$  is therefore  $C(x_1)/\{C(x_1) + C(x_2)\}$ , while that of  $x_2$  is  $C(x_2)/\{C(x_1) + C(x_2)\}$ . This approach is straightforward when there are two factors. Calculations, however, become cumbersome when there are more than two factors. We have used the *rdecompose* Stata command (Li, 2017) for the decomposition. The duration of residence has been categorised into 9 categories (0-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39 and 40 or more years) while region/country of origin has been categorised into 13 categories.

Table 2 shows the decomposition results. The citizenship rate among immigrants increased by 6.0 percentage points between 1981 and 2016 in Canada. The change in the country/region of origin accounts for a change of 3.2 percentage points. The contribution of the change in rates is, however, 5.1 percentage points but the contribution of the change in composition is -1.9 percentage points because the country of origin of immigrants shifted

from countries like United Kingdom and Italy that have relatively high citizenship rates to countries like China, India, and the Philippines that have comparatively low citizenship rates. The contribution of the rate change was positive for all country/region of origin categories, except for Germany. Much of the contribution of the change in rates was due to relatively large gains in citizenship rates among immigrants from Latin America and the Caribbean, (22 percentage points) and Asia (11 percentage points).

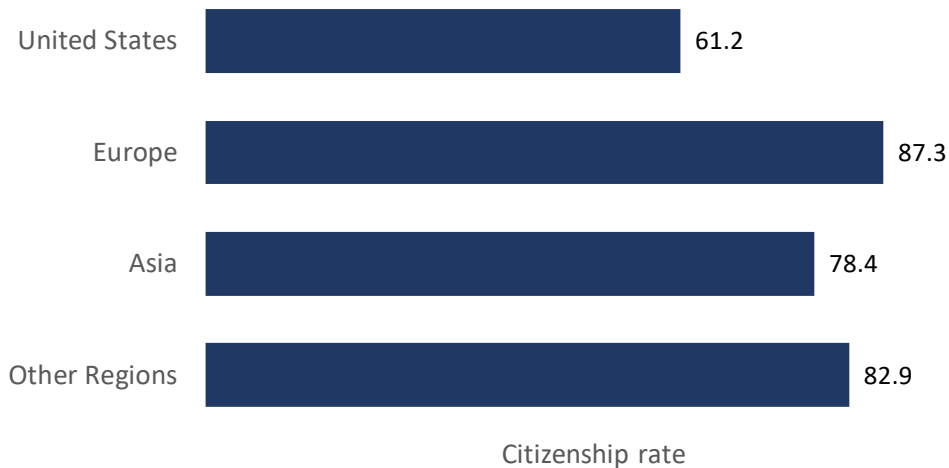


Figure 5: Citizenship rates by region of origin among immigrants with at least 20 years of residence in Canada.

Source: Author

Table 2: Decomposition of the change in citizenship rate among immigrants 1981-2016.

Particulars	Citizenship rate among immigrants		Difference		
	1981	2016	Total	Composition	Rate
	69.1	75.1	6.0		
Difference due to country of origin			3.2	-1.9	5.1
Difference due to duration of residence			2.8	0.6	2.2
Difference due to both factors			6.0	-1.3	7.3

Source: Author.

The contribution of the change in the duration of residence accounts for an increase of 2.8 percentage points in the citizenship rate. Most of this increase stems from 2.2 percentage points increase due to increase in rates while contribution of compositional change accounts for an increase of 0.6 percentage points. Citizenship rates increased for all categories of five or more years. For example, immigrants residing in Canada for 20-24 years reported citizenship rates of 82.4 percent in 1981 and 93.0 percent in 2016. The only exception is in the category 0-4 years in which the citizenship rate decreased because of

the changes in Canada's *Citizenship Act*. In 1986, recent immigrants reported higher Canadian citizenship rates because they were eligible for citizenship acquisition after three years of residence in the early 1980s. Moreover, citizenship applications were processed relatively quickly at that time whereas, in recent years, it normally takes longer to process citizenship applications and current immigrants are required to have resided in Canada for five years and establish that they have resided in Canada for three of those five years. Although some immigrants reported citizenship in 1981 within five years of arrival, no immigrants reported citizenship within five years of arrival in 2016. On the other hand, the contribution of the changes in composition was negative among immigrants with 15 or fewer years of residence in Canada but positive among immigrants with 35 or more years of residence. Because more recent immigrants tend to have lower citizenship rates than immigrants with longer residence, the net effect of these shifts in the composition of immigrants by duration of residence are higher citizenship rates. Table 2 also suggests that the contribution of the change in the region/country of origin had a slightly larger effect on citizenship rates than the contribution of the change in the duration of residence. A larger proportion of immigrants from all countries have acquired citizenship in 2016 than in 1981, but this important change has been slightly counterbalanced by shifts from a predominately European-origin to heavily Asian-origin immigrants, which has tended to reduce the overall citizenship rate. Duration of residence has been affected by the change in the volume of immigration. Increases in immigration initially decrease the proportion of immigrants with longer duration of residence and hence contribute to lower citizenship rates. As a larger volume of immigration continues, however, the duration of residence increases which leads to increases in the citizenship rate.

## Factors Influencing Citizenship Acquisition

The citizenship rate has been found to be influenced by both individual and contextual characteristics of immigrants as may be seen from table 3. This table is based on microdata samples of the eight population censuses conducted at every five years in Canada during the period 1981 through 2016 and comprises of 43,429,729 foreign-born individuals. The sampling fraction of the microdata sample varies from 2-3 per cent in different population census. Some census microdata variables are grouped in order to maintain the confidentiality of individual responses. For this reason, country of birth is grouped into broader categories for countries in which there are relatively few individuals, such as collapsing immigrants from all countries in East Africa into a single category.

Table 3 suggests that the mean rate of citizenship among the foreign-born in Canada, averaged 72.3 per cent during 1981-2016: 72.9 per cent for males and 71.7 per cent for females. Canadian citizenship rates are generally lower for females, in contrast to the United States where female citizenship rates are noticeably higher. Citizenship rates are positively related to age because age is associated with the duration of residence since arriving in Canada. Citizenship rates are less than 10 per cent for the youngest immigrants and increase to almost 90 per cent for immigrants aged 75 years and older. Younger immigrants have usually arrived in Canada within the past decade and have limited time to seek citizenship. Most elderly immigrants have resided in Canada for at least 40 years and

have a longer time to acquire citizenship. Except for ages 5-14 years, males are more likely to acquire citizenship than females.

One of the most consistent relationships found in studies of citizenship acquisition is the influence of duration of residence since arrival. As shown in table 3, immigrants lack Canadian citizenship upon arrival and begin to acquire citizenship shortly after the arrival. Some immigrants were able to acquire citizenship within 0-4 years after arrival because immigrants could apply for citizenship 3 years after arrival until 2014. Currently, immigrants need to reside in Canada for a minimum of 3 out of the previous 5 years for acquiring citizenship. Citizenship rates increase steadily after 5 years of residence, reaching 90 per cent among immigrants with 35-39 years of residence. Smaller increases continue for even longer duration of residence. It is noticeable that the male-female difference is consistent, with males reporting higher citizenship rates for all durations of residence.

Although educational attainment is generally found to be positively related to the citizenship rate, table 3 fails to reveal this relationship as citizenship rates are higher for less educated immigrants than highly educated immigrants. Cross-tabulated data for all population censuses during 1981-2016, however, need to be interpreted with caution. Less educated immigrants were more usual in the 1980s but, in the 2010s, highly educated immigrants became more common. The educational attainment of immigrants has shifted markedly from the 1950s when European immigrants arrived seeking better employment in Canada to the 1990s when Canadian immigration was selective in preferring highly educated immigrants from a wider range of countries. Immigrants with a high school education or less show lower citizenship rates for males as compared to females, while in immigrants with at least college level education, male citizenship rate is higher than that in females. Multivariate analysis below takes these variations into account.

Language proficiency is an important factor in acquiring Canadian citizenship. The citizenship rate for immigrants knowing either English or French or both is 73.5 per cent compared to 54.1 per cent in immigrants who do not know either English or French. The pattern is the same for males and females. Lower citizenship rates for immigrants lacking knowledge of English or French are probably associated with the language requirements for citizenship and possibly with the shorter duration of residence in Canada among immigrants with limited language skills. Males lacking language skills have lower citizenship rates than females, which is a pattern that does not have an obvious explanation.

The citizenship rate is found to be higher among married immigrants (defined as having a spouse or partner present in the household) as compared to unmarried immigrants. Among married immigrants, the citizenship rate is higher in males as compared to females but, among unmarried immigrants, the citizenship rate is found to be higher in females as compared to males and the difference is quite pronounced. On the other hand, it is generally expected that the presence of children in the household is associated with greater social commitment of the immigrants to their new destination and, therefore, the citizenship rates among immigrants with children should be higher than citizenship rate among immigrants without children. This expectation, however, has not been found to be true. The citizenship rate among immigrants with children is found to be lower than the citizenship rate for immigrants without children. Males have higher citizenship rates than females regardless of the presence of children.

Table 3: Variation in the citizenship rates among immigrants to Canada during 1981-2016 by selected individual and contextual characteristics of immigrants.

Individual and contextual factors	Citizenship rate			Total immigrants	
	Female	Male	All	Number	%
<b>Age (years)</b>					
0-4	7.9	8.5	8.2	331,193	0.8
5-9	34.8	33.1	33.9	859,718	2.0
10-14	50.1	49.0	49.6	1,323,043	3.1
15-19	57.3	57.7	57.5	1,772,907	4.1
20-24	56.5	59.6	58.0	2,240,167	5.2
25-29	53.5	58.0	55.6	2,842,166	6.6
30-34	58.4	60.3	59.3	3,587,778	8.3
35-39	66.3	66.6	66.4	3,992,931	9.2
40-44	72.5	73.7	73.1	4,120,447	9.5
45-49	77.7	78.1	77.9	4,001,393	9.3
50-54	80.4	82.1	81.2	3,717,101	8.6
55-59	82.9	85.0	83.9	3,333,169	7.7
60-64	83.9	86.4	85.1	2,966,827	6.9
65-69	85.0	87.6	86.2	2,565,853	5.9
70-74	85.5	88.1	86.7	2,097,644	4.9
75-79	87.2	89.4	88.2	1,635,385	3.8
80-84	88.1	90.2	89.0	1,079,429	2.5
85 and older	87.7	90.3	88.7	764,073	1.8
All Ages	71.7	72.9	72.3	43,231,224	100.0
<b>Duration of residence</b>					
0-4	9.0	9.4	9.2	5,748,108	14.0
5-9	68.4	69.4	68.9	5,684,695	13.8
10-14	80.5	82.0	81.2	5,024,788	12.2
15-19	84.2	85.5	84.8	4,240,108	10.3
20-24	85.7	87.3	86.5	4,141,528	10.1
25-29	87.4	89.1	88.2	3,364,372	8.2
30-34	88.3	90.4	89.3	3,809,607	9.3
35-39	89.9	91.6	90.7	2,504,970	6.1
40-44	91.6	93.0	92.3	2,568,679	6.3
45-49	93.0	93.8	93.4	1,829,064	4.5
50-54	94.2	95.1	94.6	1,080,541	2.6
55-59	94.6	94.8	94.7	361,093	0.9
60-64	96.2	97.1	96.6	504,868	1.2
65-69	94.9	96.0	95.5	216,450	0.5
All Durations	73.6	74.9	74.2	41,078,871	100.0
<b>Educational attainment</b>					
Less than High School	74.6	74.5	74.6	11,781,257	29.1
High School	73.9	73.6	73.8	6,885,380	17.0
Trade Certificate or 1-2 Years College	75.2	79.0	77.4	5,397,169	13.3
2-4 Years College	75.9	78.2	76.9	4,973,297	12.3
Bachelor's Degree	71.0	74.2	72.6	8,563,860	21.2
Post-Graduate or Professional Degree	67.2	71.8	70.0	2,882,553	7.1
All Immigrants	73.6	75.2	74.3	40,483,516	100.0

## CITIZENSHIP ACQUISITION OF IMMIGRANTS IN CANADA

Individual and contextual factors	Citizenship rate			Total immigrants	
	Female	Male	All	Number	%
Language proficiency					
Knows English, French, or Both	73.0	74.0	73.5	40,607,151	93.6
Does not Know English or French	56.1	50.7	54.1	2,786,651	6.4
All Immigrants	71.7	72.8	72.3	43,393,802	100.0
Marital status					
Married	72.9	77.0	75.0	27,684,919	63.7
Not Married	69.8	64.5	67.5	15,743,811	36.3
All Immigrants	71.6	72.9	72.2	43,428,730	100.0
Presence of children					
Children Present	71.4	73.6	72.5	22,868,920	67.6
Children Not Present	75.2	77.5	76.3	10,982,804	32.4
All Immigrants	72.6	74.9	73.7	33,851,724	100.0
Residence					
Metropolitan Resident	71.5	72.4	71.9	37,270,315	85.8
Not Metropolitan Resident	72.6	75.7	74.1	6,159,414	14.2
All Immigrants	71.6	72.9	72.2	43,429,729	100.0
Year of immigration					
1981	67.7	70.6	69.1	3,833,300	8.8
1986	72.5	75.5	74.0	3,918,450	9.0
1991	66.1	67.7	66.9	4,523,079	10.4
1996	69.1	71.0	70.0	5,115,636	11.8
2001	72.2	72.7	72.4	5,634,927	13.0
2006	74.7	75.6	75.1	6,011,427	13.8
2011	72.8	73.4	73.1	6,907,070	15.9
2016	74.3	74.7	74.5	7,485,840	17.2
All Years	71.6	72.9	72.2	43,429,729	100.0
Dual citizenship in country of origin					
Permitted	73.3	74.3	73.8	31,956,779	74.8
Not Permitted	66.5	68.4	67.4	10,789,175	25.2
All Countries	71.6	72.8	72.2	42,745,954	100.0
Military services in country of origin					
Mandatory	69.6	71.7	70.6	518,993	1.2
Not Mandatory	71.6	72.9	72.2	42,226,961	98.8
All Countries	71.6	72.8	72.2	42,745,954	100.0
Income group of country of origin					
High	75.1	77.2	76.1	20,832,760	48.7
High-Middle	70.0	69.8	69.9	13,173,960	30.8
Low-Middle	64.9	66.9	65.8	6,955,203	16.3
Low	68.4	67.7	68.0	1,784,031	4.2
All Countries	71.6	72.8	72.2	42,745,954	100.0
Polity status in country of origin					
Democratic	72.9	74.5	73.7	32,284,648	75.5
Semi-Democratic	67.5	68.5	68.0	5,346,550	12.5
Autocracy	67.4	67.2	67.3	5,114,756	12.0
All Countries	71.6	72.8	72.2	42,745,954	100.0

Source: Author

Similarly, contrary to expectations, the citizenship rate is found to be higher for immigrants living in non-metropolitan areas compared to those in metropolitan areas. This relationship may reflect the fact that immigrants living in non-metropolitan areas have lived in Canada for longer durations than immigrants in metropolitan areas. The male-female difference in citizenship rate exists for both immigrants living in metropolitan and immigrants living in non-metropolitan areas with a higher citizenship rate for males than females.

The relationship of citizenship rates with the year of the population census has already been examined in the preceding section. The male-female difference in citizenship rates was highest in the earlier years, but the difference has decreased substantially with time, which suggests that the 2021 and later population censuses may find negligible difference in male and female citizenship rates.

The citizenship rate for immigrants from countries that permit dual citizenship is found to be higher than the citizenship rate for immigrants from countries that do not permit dual citizenship. This is expected as it does not preclude them from continuing to maintain citizenship in their country of origin. Once again, the citizenship rate is higher for males compared to females.

Table 3 does not support the expectation that the citizenship rate among immigrants from countries with mandatory military service will be higher as compared to countries with no mandatory military service. Mandatory military service in the country of origin does not appear to be a strong motivation for acquiring Canadian citizenship. On the other hand, there is no monotonic relationship between the income status of the country of origin and the citizenship rate. There is also no clear pattern for the male-female difference in the citizenship rate by the level of income group of the country of origin. Similar is the case with the type of the government in the country of origin.

## Multivariate Analysis

The results of the multivariate analysis are presented in table 4. The logit model has a statistically significant log likelihood ratio that is statistically significant for a sample size of 1,145,478 observations. Because of the large sample size, almost all regression coefficients are statistically significant. In such a situation, interpretations should focus on substantive interest rather than on the statistical significance of the regression coefficient.

The individual characteristics, as a group, are statistically significantly related to the citizenship rate. The F-test for their joint contribution in the logit model has a test statistic of 9532.43. Omitting the four contextual variables reduces the adjusted  $R^2$  from 0.3252 to 0.3085, which shows that individual characteristics are more important than contextual variables in influencing the citizenship rate.

Results presented in table 4 largely conform to expectations. The predicted probability of citizenship for males, holding all other explanatory variables constant, is 86.3 per cent but 85.1 per cent for females. On the other hand, the predicted probability increases steadily with age (Figure 6). The predicted probability for the duration of



residence, however, is nonlinear, rising sharply in the first 20 years of residence to about 90 per cent, and then slowing down gradually. This relationship is consistent with the interpretation that immigrants apply for citizenship shortly after they are eligible, and most immigrants acquire citizenship within the first 15 years of eligibility.

The predicted probability of citizenship is higher among better educated immigrants compared to immigrants who have not completed high school, but the difference is not large. The predicted probability of citizenship is substantially higher among immigrants having proficiency in English, French or in both languages compared to the predictive probability among immigrants who lack proficiency in either English or French. Immigrants lacking knowledge of official languages are likely to have limited access or familiarity with the citizenship process or may be unable to fulfil the language requirements of the citizenship test itself.

Family structure variables have only modest effects on the predictive probability of citizenship. Similarly, the presence of children also has a modest effect. The predictive probability of citizenship among immigrants living in metropolitan areas is higher than immigrants residing in non-metropolitan areas. This is expected as immigrants living in the metropolitan areas have better access to immigrant support groups and are more familiar with the citizenship application process. It is also possible that the type of employment available in the metropolitan areas offers better opportunities for immigrants with Canadian citizenship than employment opportunities typically found in rural areas and small towns.

Results presented in table 4 support previous results in this paper on the trend analysis of citizenship rates. The decomposition analysis showed that the rate component is more important than the composition component in the change in citizenship rates. The multivariate analysis finds that the predicted probability of citizenship rose from 81.0 percent in 1981 to 85.7 percent in 2016, a gain of 4.7 percentage points, compared to the observed increase of 6.0 percentage points. This means that controlling for the explanatory variables accounts for some, but not all of the increases in citizenship rate.

The four contextual variables have also been found to be statistically significantly associated with the citizenship rate as a group or individually. They are, however, less important than individual characteristics as determinants of citizenship rate. Immigrants from countries that permit dual citizenship are more likely than immigrants from countries that do not permit dual citizenship to acquire Canadian citizenship, but the effect is small. This finding is similar to that in the United States (Chiswick and Miller, 2009). Similarly, immigrants from countries that have mandatory military service have higher citizenship rates than immigrants from countries where military service is not mandatory, although the number of immigrants from countries with mandatory military service is very small. On the other hand, citizenship rate is found to be directly related to the income level of the country of origin, the higher the income, the higher the citizenship rate. This finding differs from the study in the United States (Chiswick and Miller, 2009), which found a negative relationship. One reason is that Canada receives fewer immigrants from low-income countries than the United States, and this may also be a reason for the positive relationship observed in the present study. There may also be differences in the composition of immigrants from low-income countries to Canada than to the United States. In any case, this conflicting observation needs further investigation.

Table 4: Logit estimates for citizenship acquisition of immigrants in Canada, 1981-2016.

Explanatory variable and categories	Coefficient	SE	z	p	Predicted probability
Sex					
Female	®				0.8510
Male	0.1083	0.0073	14.89	0.0000	0.8633
Age (years)	0.0035	0.0003	11.53	0.0000	<sup>b</sup>
Duration of residence (years)					
5-9	®				0.6770
10-14	0.8164	0.0110	74.48	0.0000	0.8219
15-19	1.1428	0.0126	90.69	0.0000	0.8638
20-24	1.3107	0.0135	97.01	0.0000	0.8820
25-29	1.3500	0.0148	91.17	0.0000	0.8859
30-34	1.6097	0.0154	104.40	0.0000	0.9092
35-39	1.5604	0.0189	82.64	0.0000	0.9052
40-44	1.8962	0.0210	90.38	0.0000	0.9300
45-49	2.1135	0.0248	85.14	0.0000	0.9427
50-54	2.1365	0.0367	58.16	0.0000	0.9439
55-59	2.3987	0.0635	37.80	0.0000	0.9562
60-64	2.6108	0.0617	42.32	0.0000	0.9642
65-69	2.5929	0.0903	28.71	0.0000	0.9636
Educational attainment					
Less than High School	®				0.8382
High School Diploma	0.0488	0.0112	4.38	0.0000	0.8442
Trade School or 1-2 Years College	0.0977	0.0120	8.12	0.0000	0.8501
3-4 Years College	0.2177	0.0131	16.58	0.0000	0.8637
Bachelor's Degree	0.4111	0.0113	36.31	0.0000	0.8836
Master's, Doctorate, or Professional Degree	0.3972	0.0166	23.89	0.0000	0.8823
Language proficiency					
Knows English or French	®				0.8628
Does not know English or French	-0.6995	0.0147	-47.66	0.0000	0.7675
Presence of kids					
Kids Present	®				0.8583
No Kids Present	-0.0388	0.0080	-4.83	0.0000	0.8539
Metropolitan residence					
Metropolitan Residence	®				0.8642
Not Metropolitan Residence	-0.4705	0.0106	-44.56	0.0000	0.8050
Year of immigration					
1981	®				0.8097
1986	-0.0181	0.0148	-1.22	0.2230	0.8071
1996	0.3853	0.0147	26.30	0.0000	0.8587
2001	0.4573	0.0145	31.50	0.0000	0.8667
2006	0.5796	0.0149	38.99	0.0000	0.8794
2011	0.6034	0.0150	40.13	0.0000	0.8817
2016	0.3725	0.0144	25.95	0.0000	0.8573

Explanatory variable and categories	Coefficient	SE	z	p	Predicted probability
Dual citizenship permitted					
No	®				0.8508
Yes	0.1975	0.0087	22.82	0.0000	0.8725
Mandatory military service					
No	®				0.8568
Yes	0.0988	0.0324	3.05	0.0020	0.8677
Income level of country of origin					
Low income	®				0.7975
Low-middle income	0.9251	0.0096	96.06	0.0000	0.9008
High-middle income	0.8438	0.0117	72.11	0.0000	0.8939
High income	1.3404	0.0251	53.45	0.0000	0.9304
Governance in country of origin					
Democracy	®				0.8371
Semi-democracy	0.8567	0.0135	63.38	0.0000	0.9190
Autocracy	0.6583	0.0127	51.73	0.0000	0.9041
Constant	0.2247	0.0172	13.07	0.0000	
Summary Statistics					
Number of Observations	1,145,478				
LR chi-squared (df=3)	45,519.71				
Probability of chi-squared	0.0000				
Pseudo R <sup>2</sup>	0.3242				
Log likelihood Ratio	-256,177.28				

Footnotes: ® reference category

<sup>b</sup> See text for discussion

Source: Author

Finally, the governance in the country of origin is found to be associated statistically significantly with the citizenship rate. The predicted probability of citizenship for immigrants from semi-democratic and autocratic countries is found to be markedly higher than that of immigrants from democratic countries. The percentage point difference in the citizenship rate of immigrants from countries with limited political rights, such as North Korea or Eritrea, and that from countries with greater civil liberty, such as Switzerland or New Zealand, is noteworthy. These findings are similar to those reported by a study that examined civil liberties and political rights in the country of origin of immigrants and found a high correlation between limited political rights and civil liberties in the country of origin with the citizenship rate of immigrants (Chiswick and Miller, 2009).

## Discussion and Conclusion

Canada, like other major immigrant-receiving countries, offers and promotes Canadian citizenship for immigrants. Factors in the destination country influence citizenship acquisition because citizenship may provide benefits for work permits, health care, education, voting rights, ability to run for political office, owning property, and travel freedom to other countries. On the other hand, destination countries often institute rules

for citizenship such as requiring several years of residence; knowledge of the official language(s); knowledge of social, political, and economic institutions; readiness to do military service; and sometimes renouncing citizenship in other countries. Individual differences in language competence, years of residence, age, and education are found to be important predictors of citizenship rate in this study. Factors specific to the country of origin of immigration such as political instability and prohibition of dual citizenship have also been found to affect citizenship rate among immigrants. These findings suggest that research on naturalisation in Canada and other countries should not be limited to institutional conditions in the country of destination but should also consider factors specific to the country of origin and individual characteristics of immigrants.

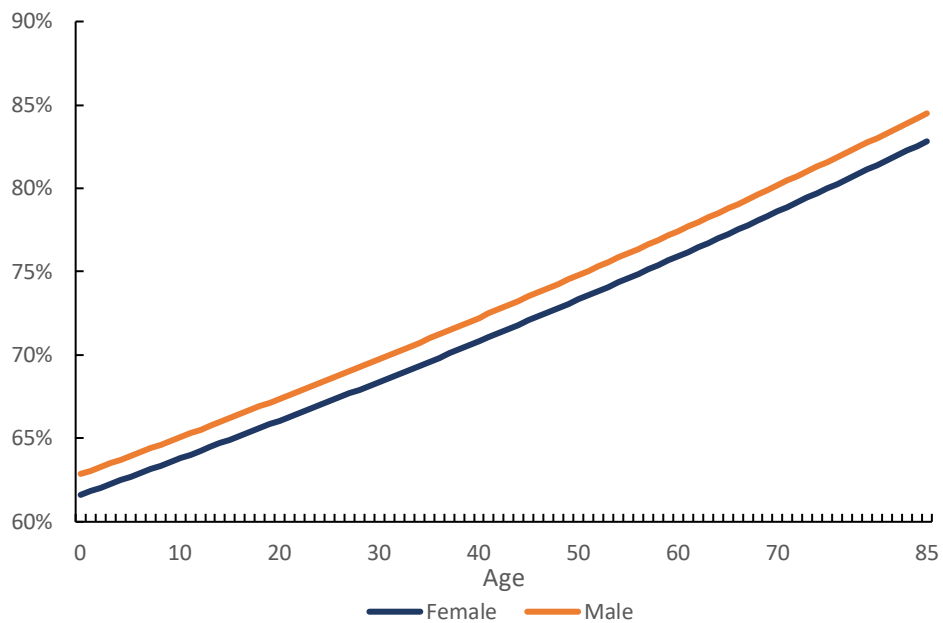


Figure 6: Predicted probability of citizenship rate by age, 1981-2016.

Source: Author.

The findings of this study have implications for immigration policy in Canada. To the extent that Canada wants immigrants who successfully integrate into Canadian society and become citizens, the immigration policy should encourage immigration of persons with higher education, proficiency in English or French, who immigrate with their family, and who are expected to remain primarily in Canada for longer periods. Much of current immigration policy is consistent with these recommendations. The findings of this study offer empirical support for its continuation. Public programmes that encourage and support citizenship acquisition need to be promoted. Classes for immigrants that help to improve language skills are a fundamental first step for immigrants with limited knowledge of English or French. Additional language training would help immigrants to gain competence

and improve their language skills. This will increase the likelihood of citizenship acquisition and will offer important social and economic benefits to immigrants. In general, programmes that offer classes in Canadian civics, history, government, and culture can enhance the likelihood of citizenship acquisition. Finally, public programmes that offer advice and assistance with the citizenship application process can be useful, especially for immigrants with weak language skills or less education.

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