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Understanding the Economic Integration of Immigrants: A Wage Decomposition of the Earnings Disparities between Native-Born Canadians and Recent Immigrant Cohorts

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Abstract: This study assesses whether characteristics relating to ethnic identity and social inclusion influence the earnings of recent immigrants in Canada. Past research has revealed that relevant predictors of immigrant earnings include structural and demographic characteristics, educational credentials and employment-related characteristics. However, due to the unavailability of situational and agency variables in existing surveys, past research has generally been unable to account for the impact of such characteristics on the economic integration of immigrants. Drawing on data from Statistics Canada's Ethnic Diversity Survey, this paper builds on previous research by identifying the relative extent to which sociodemographic, educational and ethnic identity characteristics explain earnings differences between immigrants of two recent cohorts and native-born Canadians. The results indicate that immigrants are disadvantaged in the labor market in terms of characteristics relating to sociodemographics and ethnic identity, but are advantaged in terms of human capital.

Keywords: immigration; ethnic identity; economic integration; wage decomposition; Canada

1. Introduction

Factors associated with the discrepancy in earnings between the Canadian- and the foreign-born are empirically well-documented and include social and situational (*i.e.*, sociodemographic) characteristics, educational credentials and the amount of time spent in the host country [1]. In the United States, the foreign-born disadvantage is more pronounced; descriptive data from the Current Population Survey indicate that immigrants who arrived during the 1990s earned about 58 percent of the indigenous population [2]. A substantial earnings disadvantage has also been documented for several European countries, including Sweden [3,4], Australia [5], Denmark and Germany [6]. Much of this literature is largely based on cross-sectional census data, and the recent use of the Longitudinal Immigration Data Base (IMDB) shows that recent immigrant cohorts in Canada earned less initially than earlier cohorts, but caught up faster [7].

Differences between the rate of integration for past and recent cohorts are often explained by unobserved or inadequately measured cultural variables. A common explanation for differences between rates of integration of past and more recent cohorts is the shift in source regions of immigrants (e.g., [8,9]). Cultural characteristics related to these shifts in regions of origin are often used to explain these differences. Language, for example, is typically identified as a significant factor in immigrant integration; however, conclusions about earnings differentials based on language variables are questionable, as the measurement of language skills is “unsatisfactory”, particularly in Canadian census data ([10], p. 1220). The influence of immigrants’ lack of understanding of cultural norms in Canada, particularly those relating to the labor market, is also cited by some as an explanation of why more recent cohorts of immigrants integrate into the Canadian economy at slower rates than previous cohorts (e.g., [11]).

The apparent difficulties that many immigrants experience in establishing themselves in the workforce has been the subject of a growing body of research examining the relationship between the educational credentials possessed by immigrants and their earnings (e.g., [12,13]). While the impact of these characteristics on immigrant earnings has been examined extensively in the research literature, there is also a large body of work, which has identified a variety of other characteristics that potentially influence the economic integration of immigrants [14–18]. Such characteristics include experiences with discrimination, cultural identity and community attachment and trust.

Theoretical arguments concerning the impact of these characteristics on economic success have generally not been subject to empirical testing, given the absence of large scale data sets that contain identity and cultural attachment variables. The Ethnic Diversity Survey (EDS) provides a rich source of information that taps into the social, cultural and ethnic identity characteristics discussed above. Additionally, the EDS contains detailed data related to sociodemographic and structural characteristics, as well as a number of measures related to education. These variables assembled in one data set provide higher quality data than other surveys, making the EDS a useful data set for examining immigrant integration.

The EDS is used in the present study to provide a more informed understanding of the factors contributing to the integration of immigrants into the Canadian labor market. The primary objective is to identify the relative degree to which various theoretical explanations of the earnings gap between immigrants and native-born Canadians are supported. Much attention is directed to the impact of the

relatively under-studied cultural attachment characteristics mentioned above. The theoretical context for the statistical analysis of this paper is discussed below.

2. Conceptualizing the Earnings Gap of Immigrants and Non-immigrants

While academic research has done an impressive job of explaining the earnings decline observed among immigrants in recent decades, less well explained is the related issue of the earnings gap between immigrants and non-immigrants.¹ This is an especially salient issue, given that the gap has expanded substantially in recent years. Some researchers have noted that the earnings gap between newly arrived immigrants and native-born Canadians is larger now than in the past and that complete economic integration is unlikely [9,19,20]. In order for policy makers to address this growing problem, it is necessary to first understand why the gap exists. The human capital model is the dominant paradigm employed in research studies seeking to understand the earnings of immigrants and the earnings gap between immigrants and non-immigrants [21,22]. One of the central tenets of human capital theory is that investments in education bring about financial returns following entry into the labor market (see [23,24]). Accordingly, education produces skills that are needed, valued and rewarded in the labor force. Support for human capital theory is often based on individual level data, which show that those with higher levels of education generally have better labor market outcomes than those with less schooling.

Even where human capital characteristics can be assessed, their impact on earnings inequality is potentially confounded by a variety of social and structural characteristics (e.g., ethnic networks, area of residence). Those who are critical of human capital theory on the grounds that the theory fails to acknowledge that markets are never wholly open or neutral often underscore the importance of focusing on the impact of social and structural characteristics on earnings inequality. In fact, critics of this approach challenge the notion of rational choice and emphasize the importance of also understanding the role played by opportunity structures and personal agency in the lives of people [25]. Thus, while previous literature has examined differences in human capital between the immigrant and non-immigrant populations to explain earnings differentials between these groups in Canada, this approach is incomplete.

Sociological research indicates that social networks are important to individuals' employment success, particularly with respect to obtaining information about job opportunities [26]. Examining social networks among immigrants, Xue [27] finds that social capital can increase the probability of recent immigrants to Canada finding employment. Comparing immigrants and native-born Canadians, Kazemipur [28] also finds that immigrants can obtain positive pay-offs in terms of earnings from their social networks; however, they are at a disadvantage when compared to native-born Canadians. Social networks are found to increase individuals' trust in others, which can result in a greater diversity of

¹ In Canada, three major occurrences have been identified as empirically important [8]. The first, which accounts for about one-third of the decline, has to do with changes in the characteristics of immigrants following the shift in source countries in the 1960s and associated changes in mother tongue. Another one-third is attributed to declining returns to foreign work experience among non-European immigrants. The final third is linked to a general decline in labor market outcomes for new entrants into the labor force, where immigrants are treated as new entrants. Similar reasons have been provided for the deterioration of wages in the U.S. [29–31].

contacts and, subsequently, greater success in the labor market [32]. Therefore, the research presented here will consider both human capital and social characteristics in an effort to provide a more comprehensive understanding of this issue.

While social context is particularly important in studies of educational credentials and labor market integration, others have pointed to personal agency as a possible explanation of the earnings inequity experienced by immigrants. In an imperfect labor market, immigrants must enter into a process of negotiating the worth of their credentials with potential employers [22]. The success with which this task is undertaken depends on a variety of factors. In addition to structural and sociodemographic characteristics, individuals are socially positioned in terms of a variety of characteristics related to culture and agency, as well as social capital. Agency refers to individualized attitudes, values and predispositions. When expressed in terms of predispositions associated with ethnic identity, attachment and trust, agency is seen by many as critical to the successful economic integration of immigrants (see also [14,15]).

In the context of the immigrant experience, agency is comprised of a number of perceptions and dispositions that can be characterized more broadly in terms of a limited number of subjective dimensions, such as inclusion, identity, attachment and trust [22,33]. A sense of belonging or social inclusion is associated with self-esteem [34,35], while trust is related to notions of social capital and inclusion [36]. Ethnic attachment similarly draws on the concept of social capital, which helps define characteristics having to do with ethnic identity and ethnic retention. Examples of attachment include such factors as ethnic religious affiliation, social networks and language use. It can be argued that immigrants who participate actively in the mainstream social life of their host country may be considered less “ethnic” or more akin to the native population than those less involved. Thus, immigrants who identify their ethnicity as that of the dominant group, who are naturalized citizens or who participate in the political life of the host country, may not experience the same level or type of economic penalties for their immigrant status as those who preserve their “foreignness.”

Some literature has addressed this issue by examining the economic benefits of citizenship for immigrants (e.g., [37,38]). This research finds a general earnings advantage for naturalized immigrants in Canada, particularly for those in provinces outside of Quebec [38]. Citizenship effects are particularly beneficial for immigrants who arrive from non-OECD countries [37]. In contrast, the decreased earnings gap between naturalized citizens who arrived from OECD countries and Canadian-born individuals is found to be largely attributable to their human capital characteristics. This research then suggests that immigrants whose foreign credentials or work experience may be devalued in Canada, that is, those primarily from non-OECD countries, could gain an economic advantage from lessening their “foreignness” by attaining citizenship status.

Despite much theoretical justification for a relationship between cultural or ethnic attitudes and economic success, the links between these dimensions of integration remain empirically under-examined. While it has been argued that economic success takes place more rapidly than or may in fact be required for socio-cultural integration (see [39]), some research suggests that indicators of economic success do not affect immigrants’ sense of ethnic identity [40]. Previous literature has also addressed how ethnic identity may positively contribute to immigrants’ employment opportunities where large ethnic labor market enclaves exist. Such enclaves may offer ethnic group members beneficial employment as a result of their ethnic membership [41]. Conversely, it has been argued that

the disparities in customs, values and attitudes between natives and the foreign-born may contribute to limiting immigrants' labor market opportunities that ultimately prevent them from realizing their full economic potential (see [42], p. 834). Yet, these barriers may break down for immigrants whose values and attitudes converge with those of the native population.

Furthermore, discrimination, which is deeply linked to ethnic-connectedness, is an additional factor that reflects immigrants' sense of identification, attachment and belonging to their host society. The impact of discrimination on wage inequality is particularly difficult to assess, as direct measures are not readily available in most labor market surveys. Typically identified as an unobserved factor, previous Canadian literature has applied the discrimination perspective when explaining the earnings disadvantage that visible minority immigrants (*i.e.*, individuals who identify their race as non-White)² experience when socio-economic and human capital variables are controlled [43–45].

Studies also demonstrate that ethnic retention is closely related to discrimination.³ Kunz [46], for example, reports focus group findings for immigrant youth that reveal, with regard to employment, that recent immigrant and refugee youth who are also members of a visible minority group often feel that they are penalized because of their accent, their country of origin and, for some, their religious beliefs. The importance of language use on the economic integration of immigrants is also highlighted by Aydemir and Skuterud ([8], p. 656), who suggest that approximately one-third of the long-term decline in at-entry earnings of Canadian immigrants can be attributed to shifts in the regions of origin of immigrants and associated changes in mother tongue.

In Pendakur and Pendakur's [45] detailed analysis of earnings differentials of several ethnic groups within Canada, they argue that the simple "visible minority" indicator variable that is typically used provides only a rudimentary idea of labor market discrimination. Their analysis indicates that there is a large degree of variation in the earnings differentials within visible minority and non-visible minority ethnic groups. These findings indicate that there are components to earnings differentials that go beyond simply identifying as a member of a particular ethnic group. Their research indicates further complexity within ethnic groups, which suggests that wage differentials could be explained by other variables associated with ethnic identity, such as behavioral or attitudinal factors.

This paper takes advantage of the richness of the Ethnic Diversity Survey data, which provide variables measuring identity, attachment and social capital, to demonstrate the impact of these variables in addition to the effect of human capital in explaining the earnings gap between immigrants and native-born Canadians. Using a standard regression decomposition technique, we identify the relative extent to which each set of characteristics (*i.e.*, structural/sociodemographic, human capital and ethnic attachments) contribute to the earnings gap between immigrants and the native-born. By directing specific attention to the impact of the social, cultural and agency variables on the earnings disparity, we provide insight into the theories of immigrant economic inequality mentioned above. Equally important, the findings will provide policy makers with knowledge of those characteristics that

² Originally devised by the Canadian government, visible minority is a socially constructed term that is used to refer to groups that are distinctive according to their race, color or "visibility." (See [47], p. 1041).

³ However, in regard to our earlier discussion of agency, language use and discrimination are quite distinct. While immigrants are generally able to decide whether to adopt and use an official language, discrimination is largely under the control of members of the host society.

are most important for facilitating the economic integration of immigrants and inform decisions regarding the allocation of settlement resources.

3. Data Sources

Our analysis draws on data from the 2002 Ethnic Diversity Survey (EDS) made available at Statistics Canada's Research Data Centres.⁴ The target population for the EDS is persons aged 15 years or over living in private households in the 10 provinces. Respondents for the EDS were selected from those who had completed the 2001 long form (2B) of the Canadian census in May 2001. Selection was based on respondents' answers to questions related to their ethnic origin, their place of birth and their parents' place of birth. Selecting the EDS sample frame from census responses ensured that the survey reached people of many different ethnic and cultural backgrounds, some of whom would otherwise have been difficult to locate. The original sample for the EDS includes more than 40,000 respondents; however, as with most previous studies of immigrant earnings in Canada, we restrict our analysis to full-year workers employed full-time. This allows for an assessment of individuals who were fully engaged in the Canadian labor market at the time of the survey. Our sample of immigrants is also restricted to those arriving after 1981, because past studies and our own preliminary analyses indicate that the earnings of earlier immigrant cohorts have reached parity with and, in many instances, have even exceeded those of the native-born⁵ [48–51]. A comparison of the EDS data with earlier cohorts is also problematic, as recent immigrants differ from previous cohorts with respect to their regions of origin, knowledge of official languages, *etc.*

The EDS provides an opportunity to offer a more comprehensive analysis of the economic integration of immigrants than has been possible in the past. Although confined to similar limitations as previous research that employs cross-sectional data, the EDS provides more detailed information on respondents' ethnic identities and social capital. In addition to the basic immigrant and non-immigrant distinctions, the survey includes questions related to social structure and individual differences (*i.e.*, sociodemographic characteristics) and a wealth of variables for each of the selected dimensions of personal agency and social capital discussed above.

4. Methodology

The statistical analysis for this paper involves estimating two regression models; one for immigrants and one for the Canadian-born. The dependent variable in each model is the natural logarithm of the respondents' reported annual earnings in 2002. The independent variables are grouped according to four sets of characteristics: sociodemographic variables, human capital/education variables, ethnic identity (behavioral) variables and ethnic identity (attitudinal) variables. We include

⁴ The research and analysis presented are based on data from Statistics Canada; however, the views expressed are those of the authors and do not represent the views of Statistics Canada.

⁵ We included immigrants of the two most recent cohorts, those arriving between 1981 and 1991 and those arriving between 1992 and 2001. If immigrants of earlier cohorts are included in the analysis, there would be very little wage gap to explain.

the usual controls for sociodemographic characteristics, such as sex⁶, marital status, visible minority status,⁷ Census Metropolitan Area (CMA) at the time of the survey, number of children and age. For immigrants, we divide the age into two variables—one to capture age at migration and the other to measure the years since migration to Canada. The education (human capital) variable is a measure of the respondents' reported highest level of schooling.⁸ The behavioral measures of ethnic identity and attachment include whether the respondent voted in the last election (either provincial, federal or municipal), religion, number of ethnic friends and a variable indicating whether respondents speak an official language at home. The attitudinal variables for ethnic identity and trust include a subjective measure of the respondents' sense of ethnic attachment and a variable, which captures the extent to which the respondents trust the people in their neighborhood.

The first four variables relating to identity are classified as behavioral, as they represent observable characteristics of the respondent, while the last two questions are deemed attitudinal, because they are based on the respondents' subjective opinions. While language has been used as a human capital variable in previous literature (see [52]), language knowledge is also indicative of immigrants' ethnic attachment and identity, which may contribute to negative earnings returns [41]. This disadvantage may be associated with issues related to an immigrant's "linguistic or cultural differences" ([41], p. 167). Unlike census data on language, the EDS language variables indicate whether individuals speak an official language within the home, indicating whether individuals incorporate this element of Canadian society into their home life. By examining the language use at home variable, language use, as it is associated with ethnic identity, can be assessed, as it is more representative of an individual's ethnic association than the "knowledge of official languages" variable typically used to assess the human capital aspect of immigrants' language use. All of the independent variables are treated as categorical, with the exception of the age related variables. Descriptions of the categories for these variables are provided in Tables 1 and 2.

The descriptive results and regression estimates are used to decompose the earnings gap between the two groups into various components. Regression decomposition techniques have generally been used in the literature to assess wage discrimination in the labor market between males and females or whites and blacks (e.g., [53,54]). However, they are also useful for decomposing differences in the earnings gap between immigrants and non-immigrants according to differences in the average level of earnings-determining characteristics (explained components) and in terms of differences in payoffs to these characteristics (unexplained components).⁹ As well, they can be used to assess the relative contribution of each set of characteristics identified above to the wage gap between immigrants and

⁶ Separate models for males and females were initially run. Because the main findings from these models were similar, a dichotomous variable for sex was instead used to measure earnings differences between males and females within the immigrant and Canadian-born populations.

⁷ The visible minority variable distinguishes among the three largest groups of visible minority immigrants—blacks, Chinese and South Asians (see [55]). Note that Statistics Canada defines "visible minority" as individuals who are "non-Caucasian in race or non-white in color and who do not report being Aboriginal" [56].

⁸ We include the level of schooling variable instead of years of education, because previous research suggests that level of schooling is a better measure of educational achievement, as it also captures the qualitative dimension of education that is associated with acquiring specific postsecondary credentials (see [13,57]).

⁹ The unexplained component consists of unmeasured/unobserved characteristics.

non-immigrants. In the present study, we first decompose the immigrant earnings gap into explained and residual components and then further decompose the explained component.

In decomposing the wage gap between immigrants and the native-born, we use the most commonly employed decomposition technique formulated by Oaxaca [58], which is specified as^{10 11}:

$$\bar{Y}^n - \bar{Y}^i = \hat{\beta}^n (\bar{X}^n - \bar{X}^i) + \hat{\gamma} \bar{Z} + \bar{X}^i (\hat{\beta}^n - \hat{\beta}^i)$$

where \bar{Y} represents the mean log wage and the superscripts n and i are used to depict non-immigrants and immigrants. \bar{X} represents a vector of the average value of wage determining characteristics for non-immigrants and immigrants, respectively.¹² \bar{Z} is a mean vector of immigrant-specific variables (e.g., age at migration). Finally, $\hat{\beta}$ represents a vector of OLS parameter estimates for each independent variable.

The first term on the right hand side represents the part of the immigrant earnings gap that is explained by characteristics included in the model, while the second term represents the part of the wage gap that is explained by differences in the estimated coefficients, which may be attributable to unobserved characteristics. Since decomposition techniques are typically used to assess the extent to which differences in the wage gap are attributable to unmeasured characteristics, proponents of the technique often direct much of their attention to the residual term—the last term on the right hand side of the equation. However, for our purposes, we will devote most of our attention to decomposing the explained component or the first term on the right hand side of the decomposition equation.¹³

5. Discussion of Results

5.1. Descriptive Statistics

Table 1 shows the descriptive results for all of the variables in our analysis.¹⁴ Looking first at the sociodemographic variables, it appears that recent immigrants and native-born Canadians are similar in regard to sex, marital status and age.¹⁵ However, there are some noteworthy differences in regard to residential location. The geographical location variable shows that immigrants are considerably more likely to live in major cities than are native-born Canadians. In fact, 46 percent of all recent immigrants live in Toronto, compared with only 11 percent of the native-born. As well, 16 percent of immigrants live in Vancouver, whereas only five percent of the Canadian-born reside in Vancouver. At the same time, recent immigrants are also much less likely to live in rural areas; while approximately 36 percent of non-immigrants reside in rural locations, only five percent of recent immigrants live in

¹⁰ Earlier formulations of wage decomposition techniques have been attributed to the work of Kitagawa [59], Duncan [60], and Althausser and Wigler [61] (see [62], p. 236).

¹¹ For a formal derivation of the decomposition, see Oaxaca [58] and Cotton [62].

¹² Proportions are used for categorical variables.

¹³ Unfortunately, we cannot decompose the residual component, because the residual decomposition is affected by the choice of reference category (see [63]). However, this is less of a concern for our research, as our main interest is in the explained component.

¹⁴ All estimates are obtained using weighted data.

¹⁵ We report the means for age, because the age distribution of full-year workers employed full-time between 24 and 65 in our sample is approximately normal.

such places. Among immigrants, approximately 67 percent of recent immigrants are classified as a visible minority: 18 percent are South Asian, seven percent are black, 16 percent are Chinese and 26 percent fall into the “other” visible minority category. Since less than one percent of native-born respondents report a racial/ethnic identity other than white, we removed these respondents from the analysis, as the small sample sizes for the visible minority categories would yield very imprecise estimates. The additional category for immigrants does not have any implications for the regression decomposition analyses; a similar approach was also taken by Oaxaca [58].¹⁶

Table 1. Descriptive statistics for variables in the study, by immigrant status.

Variable	Native-Born	Immigrants
	Mean or Proportion	Mean or Proportion
Sociodemographic Variables		
<i>Sex</i>		
Female	0.40	0.39
Male	0.60	0.61
<i>Marital status</i>		
Not married	0.34	0.30
Married/common law	0.66	0.70
<i>Visible minority status</i>		
Chinese	—	0.16
South Asian	—	0.18
Black	—	0.07
Other visible minority	—	0.26
White	—	0.33
<i>Census Metropolitan Area (CMA)</i>		
Montreal	0.12	0.11
Vancouver	0.05	0.16
Ottawa/Hamilton	0.06	0.05
Edmonton/Winnipeg/Calgary	0.10	0.10
Other CMAs	0.19	0.07
Non-CMAs (rural areas)	0.36	0.05
Toronto	0.11	0.46
<i>Number of children</i>		
One or more	0.38	0.51
No children	0.62	0.49
<i>Age</i>		
Age at migration	—	28
Years in Canada	—	10.26
Human Capital/Education		
<i>Highest level of schooling</i>		
Earned doctorate	0.06	0.15

¹⁶ In Oaxaca’s [58] decomposition comparing males and females, he included “number of children” as a variable for females, but not for males.

Table 1. Cont.

Variable	Native-Born	Immigrants
Sociodemographic Variables		
Undergraduate degree	0.19	0.27
College diploma	0.26	0.18
Some postsecondary	0.12	0.10
High school diploma	0.24	0.20
Less than high school	0.13	0.10
Ethnic Identity (Behavioral)		
<i>Language spoken at home (family)</i>		
Non-official language	—	0.57
Official language	—	0.43
<i>Vote in past election</i>		
No	0.14	0.16
Yes	0.86	0.47
Not applicable (not Canadian citizen)	—	0.37
<i>Religion</i>		
Christian	0.82	0.55
Non-Christian affiliation	—	0.27
No religious affiliation	0.18	0.18
<i>Number of ethnic friends</i>		
Most of them	0.23	0.35
About half of them	0.14	0.22
A few of them	0.37	0.24
None of them	0.17	0.07
All	0.09	0.12
Ethnic Identity (Attitudinal)		
<i>Sense of belonging (ethnic)</i>		
1. Not strong at all	0.16	0.06
.	0.15	0.08
.	0.25	0.26
.	0.19	0.24
5. Very strong	0.25	0.36
<i>Trust people (neighborhood)</i>		
1. Cannot be trusted at all	0.02	0.03
.	0.06	0.08
.	0.27	0.34
.	0.39	0.33
5. Can be trusted a lot	0.26	0.22
Earnings		
<i>Yearly earnings (2002 dollars)</i>	\$39,189	\$31,020

The summary information for the level of schooling variable reveals that immigrants are better educated than their native-born counterparts; they are particularly more likely to be university educated. Among the behavioral measures of ethnic identity, attachment and trust, only 43 percent of

recent immigrants report using an official language at home, whereas all native-born Canadians speak an official language at home.¹⁷ Some discrepancies also exist for the voting behavior variable. New immigrants are much less likely to have voted in the most recent federal, provincial or municipal election (47 percent) in comparison with the native-born (86 percent). However, it is important to note that this question is not applicable to 37 percent of immigrants. The lower percentage of immigrants who voted is not necessarily due to choice, but rather because of their ineligibility to vote.¹⁸ With respect to religion, approximately 82 percent of native-born Canadian respondents report a Christian affiliation, compared with 55 percent of recent immigrants.¹⁹ Approximately 27 percent of immigrant respondents report a non-Christian religion. The response pattern for the variable representing number of ethnic friends suggests that immigrants are more likely to have friends that share their same ethnicity than are native-born Canadians. The descriptive results for the attitudinal characteristics relating to identity and attachment indicate that immigrants appear to have a somewhat stronger sense of attachment to their ethnicity, while the native-born hold a slightly higher level of trust in their neighbors.

The earnings data, reported in 2002 dollars, indicate that the mean earnings differ between the native-born and immigrant groups. The native-born group earns just over \$8,000 more on average than the immigrant group, suggesting an earnings disadvantage for immigrants in Canada.

5.2. Regression Results

The coefficients for the ordinary least squares (OLS) regression models estimated in this analysis are provided in Table 2. The regression coefficients are accompanied by their standard errors and respective tests of statistical significance. The standard errors are adjusted using bootstrapped weights to account for the complex sampling design of the EDS.²⁰ As the primary purpose of this paper is to decompose the earnings gap between recent immigrants and native-born Canadians, we only devote a small amount of attention to interpreting the regression results.

Generally, the sociodemographic variables indicate significant relationships with the earnings of both the native-born and immigrant groups. Of note, men obtain higher earnings than women, married individuals receive higher earnings than non-married individuals and age has a negative relationship with earnings.²¹ Significant relationships are also found among the geographic variables. For native-born individuals, those residing in Toronto have significantly higher earnings than those in most

¹⁷ A very small number of native-born respondents who reported speaking a non-official language at home were removed from the analysis.

¹⁸ For immigrants, this variable is divided into three categories: (1) did vote in a previous election; (2) did not vote in a previous election; and (3) not applicable. A cross tabulation of this variable (not provided here) by citizenship status reveals that virtually all of the respondents in the last category are not Canadian citizens.

¹⁹ There were too few native-born respondents who reported a non-Christian affiliation to form a separate category. Therefore, we excluded these respondents from the analysis.

²⁰ While we routinely report significance tests for both groups, this is done only for consideration. We advise our readers that it is not appropriate to use tests of statistical significance to compare the relative effects of the variables across models, particularly since the sample size for immigrants is considerably smaller than the sample size for native-born respondents. Moreover, the distributions of responses for many of the independent variables are not uniform across the two groups.

²¹ It should be noted, however, that age likely has a non-linear relationship with earnings.

of the other CMAs. However, for immigrants, there were only significant differences with Toronto for the Montreal, Edmonton/Winnipeg/Calgary and “Other” CMAs. For the immigrant population, the visible minority variables indicate that black immigrants earn significantly less than white immigrants; however, there is no significant difference in earnings between white immigrants and Chinese, South Asian or other visible minority groups.

Table 2. Estimates from ordinary least squares (OLS) models predicting log earnings from the independent variables.

Variable	Native-Born Model			Immigrants Model		
	Coefficient	SE	p	Coefficient	SE	p
Constant	10.02	—	—	9.83	—	—
Sociodemographic Variables						
<i>Sex</i>			***			***
Female	−0.34	0.024	***	−0.28	0.030	***
Male	ref	—		ref	—	
<i>Marital status</i>			**			***
Not married	−0.08	0.026	**	−0.15	0.040	***
Married/common law	ref	—		ref	—	
<i>Visible minority status</i>						***
Chinese	—	—		−0.09	0.060	
South Asian	—	—		−0.10	0.072	
black	—	—		−0.20	0.052	***
Other visible minority	—	—		0.06	0.051	
white	ref	—		ref	—	
<i>Census Metropolitan Area</i>			***			**
Montreal	−0.20	0.044	***	−0.21	0.049	***
Vancouver	−0.11	0.048	*	−0.04	0.043	
Ottawa/Hamilton	−0.02	0.049		0.11	0.067	
Edmonton/Winnipeg/Calgary	−0.23	0.056	***	−0.15	0.049	**
Other CMAs	−0.22	0.046	***	−0.17	0.060	**
Non-CMAs (rural areas)	−0.28	0.043	***	−0.07	0.071	
Toronto	ref	—		ref	—	
<i>Number of Children</i>			***			
One or more	0.12	0.026	***	0.06	0.033	
No children	ref	—		ref	—	
<i>Age</i>	0.01	0.001	***	—	—	
<i>Age at migration</i>	—	—		0.00	0.002	
<i>Years in Canada</i>	—	—		0.03	0.003	***
Human Capital/Education						
<i>Highest level of schooling</i>			***			***
Earned doctorate	0.77	0.052	***	0.76	0.062	***
Undergraduate degree	0.60	0.045	***	0.54	0.056	***
College diploma	0.34	0.041	***	0.35	0.059	***
Some postsecondary	0.27	0.049	***	0.27	0.066	***
High school diploma	0.19	0.041	***	0.17	0.057	**

Table 2. Cont.

Variable	Native-Born Model			Immigrants Model		
	Coefficient	SE	p	Coefficient	SE	p
Less than high school	ref	—		ref	—	
Ethnic Identity (Behavioral)						
<i>Language spoken at home (family)</i>						***
Non-official language	—	—		-0.17	0.033	
Official language	—	—		ref	—	
<i>Vote in past election</i>			*			*
No	-0.06	0.029		-0.02	0.043	
Not applicable (non-citizen)	—	—		-0.10	0.038	**
Yes	ref	—		ref	—	
<i>Religion</i>			**			
No religious affiliation	0.06	0.022	**	-0.03	0.043	
Non-Christian affiliation	—	—		-0.06	0.041	
Christian religion	ref	—		ref	—	
<i>Number of ethnic friends</i>						**
Most of them	0.02	0.044		0.04	0.072	
About half of them	0.05	0.035		0.11	0.064	
A few of them	0.10	0.039	**	0.18	0.065	**
None of them	0.07	0.037	*	0.16	0.063	*
All	ref	—		ref	—	
Ethnic Identity (Attitudinal)						
<i>Sense of belonging (ethnic)</i>			***			
1. Not strong at all	0.10	0.042	*	0.12	0.068	
.	0.12	0.035	***	-0.01	0.058	
.	0.05	0.034		-0.03	0.039	
.	-0.01	0.035		0.02	0.039	
5. Very strong	ref	—		ref	—	
<i>Trust people (neighborhood)</i>		**				
1. Cannot be trusted at all	-0.19	0.054	***	-0.18	0.084	
.	-0.04	0.045		0.02	0.062	
.	-0.07	0.030	*	0.01	0.040	
.	-0.03	0.029		0.03	0.040	
5. Can be trusted a lot	ref	—		ref	—	
	N = 9,515			N = 1,755		
	Adjusted R-square = 0.18			Adjusted R-square = 0.30		

SE = standard error; ref = reference category for variable; * p -value < 0.05; ** p -value < 0.01; *** p -value < 0.001.

Providing support for human capital theory, the level of schooling variable is statistically significant for both groups, controlling for the other variables in the model.^{22 23} The effects of many of the behavioral characteristics relating to identity and attachment are also statistically significant, mainly for recent immigrants. The most notable of these characteristics are language use and voting behavior. The magnitude of the language estimate for immigrants illustrates that language use is a major disadvantage for immigrants.²⁴ The effect of the voting variable on earnings is also statistically significant ($p < 0.05$) for immigrants, but not for the native-born. The negative coefficient for the voting variable indicates that those who did not vote in the last election, due to their ineligibility as non-citizens, have lower earnings than those who did vote. The significance test for this variable is clearly influenced by the category for those ineligible to vote, who report the lowest earnings.²⁵ Thus, it is the eligibility to vote, not political participation (*i.e.*, voting behavior per say), that has a negative impact immigrant earnings.

Interestingly, neither attitudinal variable relating to ethnic identity or trust is statistically significant for immigrants. However, the effects of both variables are statistically significant for the native-born. Accordingly, ethnic identity is negatively related to earnings, such that native-born respondents with weaker ethnic identities report higher earnings than those who report a stronger attachment to their ethnic group ($p < 0.001$). As well, native-born respondents who are more likely to trust their neighbors earn more than those who do not trust their neighbors ($p < 0.01$).²⁶ This may be an indication of greater social capital and stronger networks among these individuals, which could, in turn, positively affect their earnings.

5.3 Regression Decomposition Results

The means and proportions provided in Table 1 and the corresponding regression estimates displayed in Table 2 are used to compute the decomposition results (see Table 3). The table provides the Oaxaca decomposition results. The total log earnings gap is 0.234, which translates into an \$8,169 earnings advantage for the Canadian-born.²⁷ In other words, the earnings of native-born Canadians are approximately 25 percent higher than the earnings of recent immigrants.

²² When not otherwise stated, the effects of all coefficients are to be interpreted as controlling for all of the other variables in the models.

²³ Initially, we also included a region of schooling variable in the regression model for immigrants. However, the effect of this variable was not statistically significant. Thus, we removed this variable from the final model, so that the imprecisely measured estimates would not affect the reliability of the decomposition analysis.

²⁴ However, Nadeau and Seckin's [38] inclusion of both language spoken at home and knowledge of official language results in an estimate for language spoken at home that is lower than our estimate. The higher estimate in our model may be due to the language spoken at home variable accounting for some of the effect of individuals' official language knowledge.

²⁵ Significance tests for variables are obtained using the F-test.

²⁶ We also initially included a subjective measure of discrimination (at work) obtained from a question where the respondents' were asked to report whether they had experienced discrimination at work (yes, no). This variable was not significant for either group and was removed from the final model, so that the estimates would not compromise the decomposition analysis.

²⁷ The results are based on comparisons of geometric means.

The decomposition results show that the earnings disadvantage experienced by recent immigrants is largely attributable to the variables that we have included in our analysis. The total observed wage gap (0.234) is decomposed into two components: the explained (0.183) and the residual (0.051). Thus, nearly 80 percent of the observed difference in earnings (*i.e.*, $0.183/0.234$) is attributable to differences between immigrant and non-immigrant earnings-predicting characteristics (*i.e.*, the independent variables included in the model). The remaining 20 percent is the disadvantage associated with being an immigrant. In the decomposition literature, the latter value is attributed to various unobserved characteristics.

Table 3. Oaxaca [58] regression decomposition of the earnings gap.

	Earnings Gap	Explained	Residual
Total	0.234	0.183	0.051
<i>Attributable to:</i>			
Sociodemographic variables		0.223	
Education		-0.078	
Ethnic identity/attachment (behavioral)		0.051	
Ethnic identity/trust (attitudinal)		-0.013	

Upon further inspection of the results, the sociodemographic variables indicate that recent immigrants are advantaged in terms of their residential locations. For example, recent immigrants are more heavily concentrated in Toronto, where respondents report the highest earnings, while the native-born are much more likely to live in non-metropolitan and rural areas, where earnings are relatively low, although the cost of living is also typically lower in these areas. If recent immigrants did not have this geographical advantage, the observed wage gap would be considerably higher. Their geographical advantage, however, is overshadowed by differences that exist for other sociodemographic characteristics. Most notably, recent immigrants are disadvantaged, because of the relatively little time spent in Canada, as immigrant earnings are found to increase with the number of years since migration.

Interestingly, the educational component indicates a negative value (-0.078), which implies that educational attainment is more favorable for immigrants than the native-born. Thus, our results reveal that differences in human capital do not necessarily negatively affect the earnings disparities between recent immigrants and native-born Canadians, as past research has emphasized. In terms of the effect of human capital on the wage gap between immigrants and the native-born, the regression estimates indicate that the effect of education on earnings is quite similar for immigrants and the native-born. However, our findings also reveal that recent immigrants are more highly educated than the native-born. Thus, contrary to our initial expectations, the decomposition results reveal that these differences in human capital actually reduce the observed wage gap between recent immigrants and the native-born.

Ethnic identity components also show interesting results in the decomposition of the earnings gap. Specifically, the behavioral characteristics relating to identity and attachment account for a considerable portion of the wage gap (0.051). Further decomposition of the behavioral component reveals that language use and to a lesser extent voting behavior (or rather, citizenship status), make the greatest contribution to the earnings gap (results not shown). This supports previous literature, which

find a positive relationship between citizenship status and earnings for many immigrant groups [37,38]. However, the attitudinal characteristics associated with ethnic identity (*i.e.*, sense of belonging, trust people in neighborhood) do not contribute to the wage gap. In fact, immigrants' attitudes regarding identity give them a slight earnings advantage (-0.013).

In sum, our analysis reveals that the attitudinal characteristics relating to ethnic identity and trust are not responsible for the observed differences in earnings. We found that the impact of the questions relating to identity and trust on earnings is not statistically significant for immigrants. While these variables are derived from subjective responses, they are noteworthy, as they contradict many assertions made in sociological literature that a lack of ethnic identification with the host society imposes barriers to successful economic integration.

Thus, our findings suggest that it is not attitudes, but rather, behaviors that isolate people from the mainstream. This is consistent with Reitz and Sklar's ([18], p. 236) observation that it is the outward manifestations of ethnic identity that may be more costly for immigrants, given that they are the most visible signs of "foreignness" and are, therefore, most likely to evoke negative reactions. Of the characteristics defined as behavioral, the language variable is clearly the most influential. Immigrants' use of a non-official language within the home negatively impacts their earnings compared to those using an official language; this difference in language use is also a large component of the earnings gap between immigrants and the native-born. Despite being an indirect measure of language proficiency, the impact of this variable clearly highlights the importance of language use, as it relates to ethnic association, on the economic integration of recent immigrants. In addition, the voting behavior variable suggests a relationship between citizenship and earnings, as those immigrants who are ineligible to vote have significantly lower earnings than those who voted in the last election.

6. Conclusions

The earnings gap between recent immigrants and the native-born in industrialized nations is an issue of great interest among economists, demographers and sociologists. As immigration has become increasingly important to population growth and economic development, the wage gap between immigrants and non-immigrants is an important policy issue in Canada, carrying with it implications for the wellbeing of a growing number of people. The issues surrounding the wage gap between recent immigrants and non-immigrants in Canada are complex.

To this point, the literature is unclear regarding the relative extent to which various factors contribute to the wage gap. Many research scientists have pointed to differences in human capital and sociodemographic characteristics between recent immigrant cohorts and the native-born as reasons for the existing earnings disparity. Others have directed their attention to various social and cultural characteristics as potential factors impeding the economic integration of new immigrants. Accordingly, it has been hypothesized that retaining one's ethnic identity, cultural practices and social networks following migration have economic costs related to lost job opportunities and limited upward mobility. This theme is evident in the writings of assimilation theorists (*e.g.*, [64–66]) and is supported by evidence indicating that the longer immigrants remain in their host countries, the more economically successful they tend to be [67]. Ethnic retention can have especially strong implications for immigrants

whose cultural values and traditions depart more substantially from the Eurocentric mainstream, as their skills may be perceived to be incompatible with economic success in the receiving country.

For the most part, policy decisions regarding the economic integration of immigrants within Canada have been largely directed toward initiatives involving human capital. To enhance the economic performance of immigrants, decision makers have for the most part directed their efforts toward selecting immigrants with higher skill levels and whose economic prospects are therefore expected to be beneficial to the national economy. Thus, the implications of other factors mentioned above, especially those relating to ethnic identity and attachment, have been largely ignored. This is primarily due to little empirical research examining the economic impact of these characteristics despite much theoretical justification for their inclusion.

Using the Canadian labor market as an example, we addressed the above issues by decomposing the wage gap between recent immigrants and the native-born according to a number of variables relating to ethnic identity and attachment that have been largely underutilized in the existing body of research. Our analysis indicates that immigrants are largely disadvantaged in terms of sociodemographic characteristics. Most notably, recent immigrants are severely disadvantaged, because of lack of time spent in Canada relative to those who have lived in Canada for a longer period of time. This finding is consistent with previous evidence indicating that immigrant wages increase with time and eventually reach parity with those of the native-born, although the use of cross-sectional data must be considered when interpreting these results (see [7,48,51]).

Traditionally, decomposition techniques have been used to assess the extent to which the earnings gap between two groups is attributable to unobserved characteristics where the impacts of these characteristics are embedded in the residual component. Since we are able to explain most of the wage gap between immigrants and native-born Canadians in our decomposition analyses, our results suggest that unmeasured factors, such as labor market discrimination, are likely not major factors in contributing to the lower earnings observed for recent immigrants as others have suggested. We anticipate that others working directly on this topic can draw on these findings when trying to assess the wage gap between immigrants and the native-born.

Our analysis is subject to other data limitations of the EDS. For example, well-defined indicators of residential patterns could not be included in our analysis, though it has been established that new immigrants, particularly racial minorities, tend to concentrate in ethnically dense areas, typically referred to as ethnic enclaves [68].²⁸ Unfortunately, variables capable of adequately capturing such settlement patterns of recent immigrants are unavailable in the EDS.²⁹ We are also limited in our ability to draw more definitive conclusions from our results, because our statistical analyses are based on cross-sectional data. Longitudinal data are necessary for disentangling period and cohort effects to provide a clearer picture of the dynamic relationships among integrating characteristics and labor market outcomes. Given that similar data for new immigrants belonging to previous cohorts are not available, we are not able to assess whether the growing wage gap identified by others is attributable to changes in the composition of characteristics examined in this paper. Further insight could also be

²⁸ In Canada, most studies have largely focused on the Chinese, given their much smaller ethnic sub-populations [21,66].

²⁹ However, Hou and Picot [68] found that visible minority neighborhood enclaves have very little negative impact on immigrants' labor market performance. Thus, the implications of excluding such measures may not be as strong as we expect.

provided by future research focusing specifically on how occupational differences between immigrants and the native-born may contribute to the wage gap.

Nevertheless, our analysis has provided a fruitful examination of the impact of various measures of human capital, ethnic attachment and sociodemographic characteristics on the wage gap between recent immigrants and native-born Canadians. By simultaneously examining many of the characteristics thought to be important predictors of the earnings gap, but have remained largely understudied in the empirical literature, due to data limitations, we are able to provide a more comprehensive understanding of the wage disparity between the native- and the foreign-born. Specifically, our findings highlight the importance of behavioral characteristics relating to identity and attachment, namely language use. They also suggest that attitudinal characteristics relating to identity and attachment are relatively unimportant in explaining the earnings gap. Using a traditional decomposition technique, we were able to explain most of the observed wage gap between native-born Canadians and recent immigrants. Thus, our findings provide a clearer understanding of the ways in which recent immigrants are both disadvantaged and advantaged in the Canadian labor market. Hopefully, our analysis will provide a sound framework for researchers investigating the economic integration of immigrants in other countries, particularly nations similar to Canada, where successful economic integration of new immigrants is necessary for both social and economic development.

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