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LEBIHAN, Laetitia and MAO TAKONGMO, Charles Olivier and McKELLIPS, Fanny

University of Ottawa

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Health Inequalities for Immigrants in Canada: Quebec versus the Rest of Canada

Laetitia Lebihan*, C-O Mao Takongmo[†]and Fanny McKellips[‡]

University of Ottawa

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Abstract

Little is known about immigrant health inequalities in Canada by province. To address this knowledge gap, we compare multiple health indicators among immigrants in Quebec, immigrants in the rest of Canada and Canadian-born individuals. The literature emphasizes that it is more difficult for immigrants in Quebec to integrate into the job market compared to immigrants in other Canadian provinces. There is an important link between the labour market situation of immigrants and their mental and physical health. Our results—obtained from data in the Canadian Community Health Survey (CCHS)—show that well-being and health indicators worsen significantly for immigrants in Quebec compared to their counterparts in the rest of Canada and Canadian-born individuals. This is particularly true for mental health and life satisfaction.

Keywords: immigrants, Canadian-born, well-being, health, Quebec.

JEL Classification: I14, I30, J10

^{*}University of Ottawa. Email: llebihan@uottawa.ca. Website: https://sites.google.com/site/laetitiamlebihan

[†]Corresponding author, University of Ottawa, Email : cmaotako@uottawa.ca. https://sites.google.com/site/maotakongmocharles

[‡]University of Ottawa. Email: fmcke006@uottawa.ca

1 Introduction

Many studies have focused on inequalities in the labour market between immigrants residing in Quebec and immigrants residing in the rest of Canada, as well as inequalities between immigrants and Canadian-born individuals (see, e.g., Boudarbat & Connolly, 2013; Boulet & Boudarbat 2015a). Such comparisons have not been made in terms of well-being and health indicators. In this paper, we use the Canadian Community Health Survey (CCHS) to compare multiple health indicators among immigrants in Quebec, immigrants in the rest of Canada and Canadian-born individuals. In particular, we compare overall, mental and oral health; life satisfaction; drinking and smoking behaviours; hypertension and asthma; and obesity and overweight. It is important for the government and for the public to be informed about this issue.

Our results show that life satisfaction and overall, mental and oral health are significantly worse for immigrants in Quebec compared to their counterparts in the rest of Canada and Canadian-born individuals. Anxiety, mood disorders, binge drinking, smoking and obesity and overweight are more prevalent among immigrants in Quebec. We also show that the likelihood of having a regular doctor is lower for immigrants in Quebec compared to their counterparts in the rest of Canada and Canadian-born individuals. Moreover, immigrants in Quebec consume less fruits and vegetables. We also found that immigrants living in Quebec are less likely to be house owners. Finally, we observed that immigrants are less likely to report hypertension and cancer in Quebec compared to those in the rest of Canada.

Because health status is part of human capital, the human capital of immigrants residing in Quebec is lower than the human capital of immigrants residing in the rest of Canada and Canadian-born individuals due to the health gap described above. This situation may lead to economic inefficiencies because of the health cost due to disease and the low productivity of immigrants in Quebec compared to immigrants in the rest of Canada and Canadian-born individuals. Good health status and high productivity for immigrants are important points in Canadian immigration policies. As pointed out by Beiser (2005), in addition to economic considerations, it is humane to keep immigrants in good health. Comparing the health status of immigrants across Canada can help to reduce health inequalities and improve health conditions.

This paper is structured as follows. Section 2 briefly describes the health system in Canada. The data set used is presented in Section 3. Section 4 describes the methodology. Results are presented in Section 5 and the discussion in Section 6. Section 7 concludes the paper.

2 Healthcare System in Canada and Healthcare Benefits for New Immigrants

Canada's healthcare system, governed by the Canada Health Act, is publicly funded and administered by the provinces and territories. The Canada Health Act is based on five main principles: public administration, comprehensiveness, universality, portability and accessibility (Government of Canada, 1984). Through this act, all Canadians and permanent residents are entitled to universal coverage for insured services. The maximum waiting time for immigrants to receive a government health insurance card is three months for all provinces and territories. Emergency medical services are free for everyone in all provinces, even those who do not have a government health care card.

The final decision to make someone a permanent resident in Canada is taken by the federal government. Each candidate in the final process of becoming a permanent resident, as well as each member of his or her family, must take the Immigration Medical Exam (IME). The IME is performed by a doctor who is selected by the federal government, and the final decision to grant immigrant status is made after the government analyzes the medical certificate sent directly by the doctor (Government of Canada, 2017). The medical examination includes a physical and mental examination; a review of medical history; a laboratory test; a diagnostic test; and a medical assessment of the applicant's records (Government of Canada 2002, Regulation 29). Therefore, regardless of the province to which the immigrant is preparing to move, each immigrant is subject to the same medical check.

The proportion of immigrants in the total population is increasing ¹ in Canada (Statistics Canada, 2011). According to Statistics Canada (2011), Quebec and Ontario are the provinces that received the largest number ² of new immigrants between 2006 and 2011. One natural interest of the Government of Canada and civil society is health inequalities among provinces for immigrants after arriving in Canada.

3 Data

We use microdata from the CCHS, which is a cross-sectional survey that collects information on the health status, health care utilization and health determinants of the Canadian

^{1.} The immigrant population increased from 17.2 % of the total population in Canada in 2006 to 20.6 % of the total population in 2011 (Statistics Canada 2011). According to Statistics Canada (2011), 94.8% of immigrants live in Ontario, British Columbia, Quebec and Alberta. Of those immigrants, 53.3 % live in Ontario, 17.6 % in British Columbia, 14.4 % in Quebec and 9.5 % in Alberta.

^{2.} In that period, 43.1~% of new immigrants was received in Ontario, 19.2~% in Quebec and 15.9~% in British Columbia (see Statistics Canada, 2011)

population aged 12 or more (Statistics Canada, 2005). The survey started in 2001 and collected biennial samples for 2001, 2003 and 2005 and has collected yearly samples since 2007. Nevertheless, several variables have been constructed since 2003 and/or changed significantly after 2010. Therefore, we use the 2003-2010 period to ensure comparability over time. We focus on respondents aged 20 to 59 years because they are more likely to be in the labour market. The CCHS contains several indicators that are used in the literature to measure subjective well-being or behaviours related to health (Bradshaw et al., 2007; UNICEF Office of Research, 2013).

Using the CCHS, we examine several self-assessed health perceptions and subjective wellbeing indicators: (1) overall health; (2) mental health; (3) life satisfaction; and (4) oral health. In the CCHS, individuals rate their overall, mental and oral health as "excellent," "very good," "good," "fair" or "poor." Life satisfaction is measured using the question "How satisfied are you with your life in general?" Respondents choose from five options, ranging from "very satisfied" to "very dissatisfied." Several indicators assess the presence of (5) hypertension, (6) asthma, (7) diabetes, (8) heart disease and (9) cancer. Respondents are asked whether they have (10) anxiety disorders (such as phobias, obsessive-compulsive disorder or a panic disorder), (11) mood disorders (such as depression, bipolar disorder, mania or dysthymia) and (12) a regular medical doctor. They also report whether they (13) drink "not at all," "occasionally" or "regularly," as well as their prevalence of (14) binge drinking, which is defined as having five or more drinks in one sitting (Flegel et al., 2011). We also note whether (15) they smoke "not at all," "occasionally" or "daily." Moreover, respondents rate their (16) fruit and vegetable consumption per day. Body mass index is calculated from self-reported height and weight, and respondents are classified if they are (17) overweight or obese. Respondents also report whether they (18) engage in physical activity of more than 15 minutes per day and whether they are (19) house owners. Appendix Table A.1 provides details on each measure.

The controls used in the regressions with CCHS data are the sex of the respondent; dummies for the highest level of education of the respondent –less than a high school diploma, high school diploma, other postsecondary education, with a postsecondary diploma; dummies for the age of the respondent; dummies for the marital status of the respondent – married/common-law, single/never married, widowed/separated/divorced; dummies for the size of the respondent's household – from 1 to 5 or more; dummies for the language the respondent can speak – English, French, English and French, neither; and, finally, dummies for years. Summary statistics for Quebec and for the rest of Canada for immigrants and Canadian-born individuals are presented in Appendix Table A.2.

4 Empirical strategy

For each well-being and health indicator, we estimate the following model:

$$Y_{it} = \alpha + \beta_1 Que_{it} + \beta_2 Imm_{it} + \beta_3 Que_{it} \times Imm_{it} + \beta_4 X_{it} + \varepsilon_{it}$$

where Y_{it} represents the well-being/health indicator considered for respondent i in wave t. The term Que_{it} is a dummy variable taking the value of 1 if the respondent lives in Quebec in wave t and 0 otherwise. The term Imm_{it} equals one if the respondent was not born in Canada (immigrant) and 0 otherwise. The term $Que_{it} \times Imm_{it}$ equals 1 if the respondent resides in Quebec and is an immigrant; it is 0 otherwise. Finally, the term X_{it} is a vector of socioeconomic control variables, and ε_{it} is an error term.

If β_1 is statistically significant, respondents living in Quebec differ from those in other Canadian provinces for the measure studied. Similarly, if β_2 is statistically significant, immigrants differ from those born in Canada. Finally, if β_3 is statistically significant, immigrants in Quebec differ from immigrants in other Canadian provinces and Canadian-born individuals in Canada overall.

For dichotomous variables (e.g., hypertension), we estimate probit regressions (marginal effects are presented); for those with more than two categories (e.g., overall health), we use ordered probit regressions. For continuous variables (e.g., fruit and vegetable consumption), we estimate linear regressions via ordinary least squares. All statistical analyses are weighted using sample weights from Statistics Canada. We also report the direction of each measure for which the independent variable has a beneficial effect on the respondent.

5 Results

Table 1 presents the estimates of the above model. We show that Quebec residents have better life satisfaction and overall, mental and oral health compared to their counterparts in the rest of Canada. However, for these same variables, immigrants, regardless of geography, are in poorer health than Canadian-born individuals. This is surprising because several studies show that immigrants are healthier than the Canadian-born as a result of the immigration selection process. However, when stratifying by length of stay in Canada (results available on demand), we found that only immigrants who have been in the country for 10 years or more are less healthy than the Canadian-born; the effect is zero for immigrants who have been in the country for 0-9 years. This confirms the healthy immigrant effect hypothesis, according to which recent immigrants are healthier than their Canadian-born counterparts but experience a decrease in this health status advantage over time (Gee et al., 2004; De

Maio et al., 2010). In Table 1, we also show that life satisfaction and overall, mental and oral health worsen significantly for immigrants in Quebec compared to their counterparts in the rest of Canada and Canadian-born individuals.

We found no statistically significant differences between immigrants in Quebec and their counterparts in the rest of Canada and Canadian-born individuals in the likelihood of developing asthma, diabetes or heart disease (Table 1). For hypertension and cancer, immigrants in Quebec are less likely to report these diseases, but the effects are very small (decreased by 1 percentage point and 0.1 percentage point, respectively). Table 1 also shows that anxiety and mood disorders are more prevalent among immigrants in Quebec despite the small size of the effects (between 1.1 and 1.9 percentage point). Living in Quebec decreases the likelihood of having a regular doctor by 15.6 percentage points. This is not surprising because several studies have showed difficulty in access to health care in Quebec, in particular for having a family doctor (CIHI, 2016). For immigrants in Quebec, the likelihood of having a regular doctor also decreases.

For drinking, we found no statistically significant difference between immigrants in Quebec and their counterparts in the rest of Canada. However, immigrants in Quebec are more likely to engage in binge drinking. Table 1 indicates that immigrants overall are much more likely to be never smokers, but the opposite is true in Quebec. We also show that immigrants in Quebec consume less fruits and vegetables on average and are more likely to become overweight or obese. However, there is no statistically significant difference between immigrants in Quebec and their counterparts in the rest of Canada for physical activity. Finally, immigrants in Quebec are less likely to own a house. This is not surprising given that immigrants are at a disadvantage in the labour market and take some time to adjust.

Table 2 shows the estimated effects for Quebec and Ontario only by the sex of the respondent and by length of time in Canada since immigration. We first present the results comparing Quebec and Ontario. We show that the results remain similar: Several well-being and health indicators worsen significantly for immigrants in Quebec compared to their counterparts in the rest of Canada and Canadian-born individuals.

When stratifying by the sex of respondent, we show that female and male immigrants in Quebec are both affected, but men are more affected in terms of mental health.

We also stratify by length of time in Canada since immigration: 0-9 years and 10 years and more. We show that negative effects on health and well-being are more pronounced for immigrants who have been in Quebec for 10 years and more than for those who have recently immigrated to Quebec. This is not surprising because several studies have showed the healthy immigrant effect in Canada (Wang et al., 2017).

In sum, it appears that well-being and health indicators worsen significantly for immi-

grants in Quebec compared to their counterparts in the rest of Canada and Canadian-born individuals. This is particularly true for mental health and life satisfaction.

Table 1 – Probit, ordered and linear regression estimates for the full sample.

Variables	Model	Quebec	Immigrant	Quebec*Immigrant	
Overall health (-)	Ordered probit regression	regression -0.066***		0.104***	
	N = 282,410	(0.025)	(0.015)	(0.017)	
Mental health (-)	Ordered probit regression	-0.119***	0.018	0.107***	
	N = 279,615	(0.022)	(0.015)	(0.014)	
Life satisfaction (-)	Ordered probit regression	-0.024**	0.245***	0.101***	
	N = 279, 195	(0.012)	(0.026)	(0.025)	
Oral health (-)	Ordered probit regression	-0.034***	0.188***	0.191***	
	N = 141,902	(0.012)	(0.036)	(0.0323)	
Hypertension (-)	Probit regression	-0.006	0.001	-0.010**	
	N=281,908	(0.004)	(0.005)	(0.004)	
Asthma (-)	Probit regression	-0.006*	-0.040***	0.001	
	N = 282,423	(0.004)	(0.003)	(0.004)	
Diabetes (-)	Probit regression	-0.002	0.007**	0.002	
	$N = 282,\!376$	(0.002)	(0.004)	(0.003)	
Heart disease (-)	Probit regression	0.002*	-0.003	-0.001	
	$N = 282,\!247$	(0.001)	(0.002)	(0.002)	
Cancer (-)	Probit regression	-0.002*	-0.002***	-0.001**	
	N = 282,344	(0.001)	(0.001)	(0.001)	
Anxiety disorders (-)	Probit regression	-0.010***	-0.027***	0.011***	
	$N = 282,\!294$	(0.002)	(0.002)	(0.003)	
Mood disorders (-)	Probit regression	-0.026***	-0.027***	0.019***	
	N = 282,337	(0.002)	(0.003)	(0.003)	
Regular medical doctor $(+)$	Probit regression	-0.156***	-0.015***	-0.084***	
	N = 282,449	(0.012)	(0.005)	(0.012)	
Drinking- type of drinking (+)	Ordered probit regression	-0.142***	0.548***	0.041	
	N=281,769	(0.041)	(0.041)	(0.043)	
Drinking- binge drinking (-)	Probit regression	-0.017***	-0.118***	0.014***	
	$N = 237,\!642$	(0.006)	(0.004)	(0.004)	
${\rm Smoking}\ (+)$	Ordered probit regression	-0.098***	0.531***	-0.064***	
	$N = 282,\!255$	(0.020)	(0.007)	(0.011)	
Fruit and vegetable	Linear regression	0.314***	0.140*	-0.375***	
consumption $(+)$	N=240,598	(0.053)	(0.063)	(0.064)	
Obesity and overweight (-)	Probit regression	-0.056***	-0.122***	0.099***	
	$N = 270,\!686$	(0.013)	(0.018)	(0.017)	
Physical activity (+)	N=Probit regression	-0.096***	-0.072***	0.030	
	N = 279,666	(0.013)	(0.017)	(0.019)	
Home ownership $(+)$	Probit regression	-0.073***	-0.131***	-0.101***	
	$N = 281,\!803$	(0.014)	(0.013)	(0.017)	

Notes: Standard errors are clustered by province (reported in parentheses). All estimates are weighted. We also report the direction of each indicators for which the variable has a beneficial effect on the respondent.

***: significant at 1%; **: significant at 5%;*: significant at 10%

Table 2 – Probit, ordered and linear regression estimates for several sub-samples.

TABLE 2	Quebec vs Ontario Gender				Length of time in Canada since immigration					
	Only Ontario		Male Fem.		· ·		ears 10 years and more		nd more	
VARIABLES	Que*Imm	N	Que*Imm	N	Que*Imm	N	Que*Imm	N	Que*Imm	N
Overall health (-)	0.085***	151,320	0.120***	130,927	0.095***	151,483	0.052**	256,031	0.138***	271,352
	(0.031)		(0.018)		(0.016)		(0.025)		(0.015)	
Mental health (-)	0.083***	149,954	0.124***	129,136	0.094***	$150,\!479$	0.099***	$253,\!587$	0.114***	268,779
	(0.030)		(0.014)		(0.015)		(0.024)		(0.012)	
Life satisfaction (-)	0.070**	149,739	0.122***	128,905	0.0820***	$150,\!290$	0.062	253,244	0.099***	268,402
	(0.030)		(0.034)		(0.017)		(0.049)		(0.016)	
Oral health (-)	0.138***	$75,\!291$	0.208***	$65,\!461$	0.185***	76,441	0.086**	128,720	0.232***	$136,\!802$
	(0.043)		(0.050)		(0.017)		(0.036)		(0.033)	
Hypertension (-)	-0.014*	$151,\!092$	-0.009**	$130,\!533$	-0.010***	$151,\!375$	-0.023***	$255,\!559$	-0.004	$270,\!860$
	(0.008)		(0.005)		(0.004)		(0.006)		(0.004)	
Asthma (-)	0.007	$151,\!325$	0.004	130,936	-0.003	151,487	0.002	256,026	0.005	271,370
	(0.009)		(0.005)		(0.004)		(0.008)		(0.003)	
Diabetes (-)	-0.002	$151,\!279$	-0.008**	130,914	0.014***	$151,\!462$	-0.012***	$255,\!988$	0.001**	271,323
	(0.005)		(0.004)		(0.003)		(0.002)		(0.003)	
Heart disease (-)	-0.003	$151,\!240$	-0.003*	130,847	0.002	151,400	-0.006***	$255,\!881$	0.001	271,194
	(0.005)		(0.002)		(0.002)		(0.001)		(0.002)	
Cancer (-)	-0.001	$151,\!257$	0.002**	130,916	-0.004***	$151,\!428$	-0.001	$255,\!958$	-0.001***	271,287
	(0.003)		(0.001)		(0.001)		(0.002)		(0.000)	
Anxiety disorders (-)	0.014*	$151,\!258$	0.007*	130,877	0.014***	151,417	0.028***	$255,\!928$	0.011***	$271,\!260$
	(0.008)		(0.004)		(0.002)		(0.004)		(0.003)	
Mood disorders (-)	0.017**	$151,\!275$	0.013***	130,875	0.024***	151,462	0.031***	$255,\!959$	0.018***	$271,\!291$
	(0.009)		(0.001)		(0.004)		(0.005)		(0.003)	
Regular medical doctor (+)	-0.072***	$151,\!334$	-0.100***	130,920	-0.069***	$151,\!529$	-0.106***	$256,\!051$	-0.062***	271,387
	(0.011)		(0.022)		(0.010)		(0.012)		(0.012)	
Drinking-type of drinking (+)	-0.029	151,096	0.064	130,591	0.018	151,178	0.013	$255,\!440$	-0.011	270,735
	(0.035)		(0.048)		(0.0380)		(0.087)		(0.030)	
Drinking- binge drinking (-)	0.014	128,741	0.022***	$113,\!593$	0.007*	124,049	0.054***	$217,\!534$	0.004	$230,\!830$
	(0.015)		(0.005)		(0.004)		(0.0120)		(0.003)	
Smoking (+)	-0.061*	$151,\!275$	-0.052***	130,837	-0.066***	151,418	-0.125***	$255,\!883$	-0.054***	$271,\!198$
	(0.032)		(0.015)		(0.011)		(0.009)		(0.014)	
Fruit and vegetable	-0.364**	$130,\!375$	-0.257***	110,783	-0.516***	$129,\!815$	-0.253***	$216,\!783$	-0.443***	$230,\!952$
consumption $(+)$	(0.019)		(0.060)		(0.072)		(0.073)		(0.060)	
Obesity and overweight (-)	0.075***	$145,\!633$	0.103***	$129,\!292$	0.091***	$141,\!394$	0.095***	$245,\!273$	0.112***	$260,\!363$
	(0.013)		(0.012)		(0.022)		(0.014)		(0.018)	
Physical activity (+)	0.056***	$150,\!035$	0.010	129,151	0.052***	$150,\!515$	0.034	$253,\!627$	0.034*	268,841
	(0.014)		(0.020)		(0.020)		(0.022)		(0.019)	
Home ownership $(+)$	-0.085***	$151,\!117$	-0.126***	130,653	-0.072***	$151,\!150$	-0.133***	$255,\!508$	-0.069***	$270,\!799$
	(0.012)		(0.016)		(0.017)		(0.019)		(0.018)	

Notes: Standard errors are clustered by province (reported in parentheses). All estimates are weighted. We also report the direction of each indicator for which the variable has a beneficial effect on the respondent. Statistically different estimates between males and females and between 0-9 years and 10 years or more are presented in bold face. *** : significant at 1%; ** : significant at 5%; * : significant at 10%

6 Discussion

Several studies show that immigrants in Quebec have higher unemployment rates, lower wages and less-skilled jobs than immigrants from the rest of Canada and Canadian-born individuals (Boudarbat & Connolly (2013); Boudarbat & Boulet (2015a)). Having a good job could improve the health conditions of immigrants. Indeed, job quality may have a strong impact on preservation of mental health among immigrants ³ (Boulet & Boudarbat, 2015a).

Public policies put in place to reduce health inequalities for immigrants in Quebec could be related to the improvement in integrating those immigrants into the labour market. Conventional macroeconomic policies to increase overall economic activity may help but may not be enough to reduce health inequalities, especially during recessions ⁴. Improving education may help, but it is not sufficient. In fact, immigrants are selected in part based on their level of schooling and the demand for the type of job they are qualified to do. As shown by Boulet & Boudarbat (2015b), even if lack of recognition of human capital acquired outside Canada is a factor that can reduce the probability of having a job or increase the probability of facing wage discrimination, returning to school and obtaining a Canadian diploma ⁵ cannot solve that problem.

7 Conclusion

This paper compares health and well-being indicators among immigrants in Quebec, immigrants in the rest of Canada and Canadian-born individuals. Data used in our analysis are large microdata from the Canadian Community Health Survey conducted by Statistics Canada. After controlling for a large number of relevant variables, our results show that well-being and health indicators worsen significantly for immigrants in Quebec compared to their counterparts in the rest of Canada and Canadian-born individuals. The difference is greater for mental health and life satisfaction. We suggest improving the integration of immigrants in the labour force to reduce that health gap.

^{3.} Data used by Boulet & Boudarbat (2015a) come from the Quebec Survey on Working and Employment Conditions and Occupational Health and Safety (EQCOTESST).

^{4.} For a theoretical framework on why it is difficult to improve economic activity during a recession, see Mao Takongmo (2017a); for empirical evidence, see Mao Takongmo (2017b).

^{5.} Boulet & Boudarbat (2015b) used the Canadian National Graduates Survey (NGS) in their study.

Bibliography

- [1] Beiser, M. (2005). The health of immigrants and refugees in Canada. Canadian Journal of Public Health/Revue Canadienne de Santé Publique, S30-S44.
- [2] Boudarbat, B., & Connolly, M. (2013). Évolution de l'accès à l'emploi et des conditions de travail des immigrants au Québec, en Ontario et en Colombie-Britannique entre 2006 et 2012 (No. 2013s-28). CIRANO.
- [3] Boulet, M., & Boudarbat, B. (2015a). Qualité de l'emploi et santé mentale des travailleurs au Québec : une comparaison entre les immigrants et les natifs. Canadian Public Policy, 41(2), S53-S60.
- [4] Boulet, M., & Boudarbat, B. (2015b). The economic performance of immigrants with Canadian education. Regional and Sectoral Economic Studies, 15(2), 23-40.
- [5] Bradshaw, J., Hoelscher, P., & Richardson, D. (2007). An index of child well-being in the European Union. Social Indicators Research, 80(1), 133-177.
- [6] Canadian Institute for Health Information (CIHI). (2016). How Canada Compares: Results From The Commonwealth Fund 2015 International Health Policy Survey of Primary Care Physicians. Retrieved 02/12/2017 from https://www.cihi.ca/en/health-system-performance/performance-reporting/international/commonwealth-fund-survey-2015
- [7] De Maio, F. G., & Kemp, E. (2010). The deterioration of health status among immigrants to Canada. Global Public Health, 5(5), 462-478.
- [8] Flegel, K., MacDonald, N., & Hébert, P. C. (2011). Binge drinking: all too prevalent and hazardous. CMAJ, 183(4), 411.
- [9] Gee, E. M. T., Kobayashi, K. M., & Prus, S. G. (2004). Examining the healthy immigrant effect in mid-to later life: findings from the Canadian Community Health Survey. Canadian Journal on Aging/La Revue canadienne du vieillissement, 23(5), S55-S63.
- [10] Government of Canada. (1984). Canada Health Act. Retrieved 02/12/2017 from http://laws-lois.justice.gc.ca/eng/acts/C-6/page-1.html
- [11] Government of Canada. (2002). Immigration and Refugee Protection Regulations (SOR/2002-227). Retrieved 10/06/2017 from http://laws-lois.justice.gc.ca/eng/regulations/SOR-2002-227/20060322/P1TT3xt3.html
- [12] Government of Canada. (2017). Medical exam for permanent residents. Retrieved 10/06/2017 from http://www.cic.gc.ca/english/information/medical/medexams-perm.asp

- [13] Mao Takongmo, C. O. (2017a). Government-spending multipliers and the zero lower bound in an open economy. Review of International Economics, https://doi.org/10.1111/roie.12295
- [14] Mao Takongmo, C. O. (2017b). Government spending, GDP and exchange rate in Zero Lower Bound: measuring causality at multiple horizons. MPRA Working Paper No. 79703
- [15] Statistics Canada. (2005). Canadian Community Health Survey (CCHS)- Main file.
- [16] Statistics Canada. (2011). Immigration and Ethnocultural Diversity in Canada. National Household survey, 2001, Catalogue no. 99-010-X2011001
- [17] UNICEF Office of Research. (2013). Child well-being in rich countries: A comparative overview. Innocenti Report Card 11. Florence: UNICEF Office of Research.
- [18] Wang, L., & Palacios, E. L. (2017). The Social and Spatial Patterning of Life Stress Among Immigrants in Canada. Journal of Immigrant and Minority Health, 19(3), 665-673.

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APPENDIX

Table A.1 – Well-Being and Health Measures (CCHS)

Overall health	In general, would you say your health is:
(Range: 1-5)	1) excellent
	2) very good
	3) good
	4) fair
	5) poor
Mental health	In general, would you say your mental health is:
(Range: 1-5)	1) excellent
	2) very good
	3) good
	4) fair
	5) poor
Life satisfaction	How satisfied are you with your life in general:
(Range: 1-5)	1) very satisfied
	2) satisfied
	3) neither satisfied nor dissatisfied
	4) dissatisfied
	5) very dissatisfied
Oral health	In general, would you say the health of your teeth and mouth is:
(Range: 1-5)	1) excellent
	2) very good
	3) good
	4) fair
	5) poor
Drinking- Type of drinking	During the past 12 months, have you had beer, wine, liquor or any other alcoholic beverage? :
(Range : 1-3)	1) Regularly (once a month to every day)
	2) Occasionally (less than once a month)
	3) Not at all
Smoking	Type of smoker:
(Range : 1-3)	1) Regularly (daily)
	2) Occasionally
	3) Not at all
Daily consumption	Total fruits and vegetables :
	The CCHS measures the number of times (frequency), not the amount consumed.

Table A.2 – Summary Statistics

	Q	uebec	(1)	Rest o	f Canada	(2)	(1)- (2)
	Immigrant	Non-immigrant	Difference	Immigrant	Non-immigrant	Difference	Prob>Chi2
			Imm-Non imm			Imm-Non imm	
Sex							
Male	0.528 (0.499)	0.497 (0.500)	0.030 (0.012)**	0.486 (0.500)	0.501 (0.499)	-0.016 (0.005)***	0.000
Age							
20-24	0.080 (0.272)	0.121 (0.326)	-0.040 (0.007)***	0.086 (0.280)	0.134 (0.340)	-0.048 (0.003)***	0.309
25-29	$0.117 \ (0.321)$	0.117 (0.321)	-0.001 (0.007)	$0.095 \ (0.293)$	0.127 (0.332)	-0.031 (0.003)***	0.000
30-34	$0.161\ (0.367)$	$0.109 \ (0.312)$	0.052 (0.008)***	0.109 (0.312)	$0.114\ (0.318)$	-0.005 (0.003)**	0.000
35-39	$0.162\ (0.368)$	$0.112\ (0.315)$	0.050 (0.008)***	$0.142\ (0.349)$	$0.122\ (0.328)$	0.020 (0.003) ***	0.000
40-44	$0.144\ (0.352)$	$0.138 \ (0.345)$	$0.006\ (0.008)$	$0.163\ (0.369)$	$0.141\ (0.347)$	0.023 (0.004) ***	0.067
45-49	$0.119\ (0.324)$	$0.139\ (0.346)$	-0.020 (0.009)**	$0.142\ (0.349)$	$0.136 \ (0.343)$	0.006 (0.004) *	0.006
50-54	$0.109 \ (0.312)$	$0.143\ (0.350)$	-0.034 (0.008)***	$0.131\ (0.338)$	$0.123\ (0.328)$	0.009 (0.003)***	0.000
55-59	$0.108\ (0.310)$	$0.122\ (0.327)$	-0.014 (0.008)*	$0.131\ (0.337)$	$0.103\ (0.304)$	0.027 (0.003)***	0.000
Household size							
1 person	0.131 (0.337)	0.146 (0.349)	-0.011 (0.006)*	0.081 (0.272)	0.110 (0.313)	-0.029 0.002)***	0.002
2 persons	$0.248\ (0.432)$	$0.333 \ (0.471)$	-0.086 (0.009)***	$0.214\ (0.410)$	$0.303 \ (0.459)$	-0.089 (0.003)***	0.713
3 persons	$0.233\ (0.423)$	$0.221\ (0.415)$	$0.012\ (0.010)$	$0.220\ (0.414)$	$0.218 \ (0.413)$	$0.002\ (0.004)$	0.375
4 persons	$0.230\ (0.421)$	$0.211\ (0.408)$	0.019 (0.011)*	$0.270 \ (0.444)$	$0.241\ (0.427)$	0.029 (0.005)***	0.381
5 + persons	$0.159\ (0.366)$	$0.093\ (0.291)$	0.066 (0.009)***	$0.216\ (0.412)$	$0.129\ (0.335)$	0.087 (0.004)***	0.037
Highest level of education atta-	ined						
Less than high school	0.106 (0.308)	0.135 (0.342)	-0.029 (0.008)***	0.090 (0.286)	0.097 (0.296)	-0.007 (0.003)***	0.010
High school diploma	$0.108\ (0.310)$	$0.136 \ (0.343)$	-0.029 (0.008)***	$0.169\ (0.375)$	$0.193\ (0.395)$	-0.024 (0.004)***	0.560
Some college	$0.047\ (0.212)$	$0.069 \ (0.254)$	-0.022 (0.005)***	$0.072\ (0.258)$	$0.099\ (0.298)$	-0.027 (0.003)***	0.409
Bachelor's and above	$0.739\ (0.244)$	$0.659 \ (0.474)$	0.080 (0.011)***	$0.669\ (0.471)$	$0.611\ (0.488)$	0.058 (0.005)***	0.064
Marital status							
Married/common-law	0.689 (0.463)	0.638 (0.481)	0.051 (0.011)***	0.731 (0.443)	0.648 (0.478)	0.084 (0.004)***	0.004
Single/never married	$0.214\ (0.410)$	$0.269 \ (0.443)$	-0.055 (0.009)***	$0.188\ (0.391)$	$0.268 \; (0.444)$	-0.080 (0.004)***	0.011
Widowed/divorced/separated	$0.098\ (0.297)$	$0.093\ (0.291)$	$0.005\ (0.007)$	$0.081\ (0.272)$	$0.084\ (0.277)$	-0.004 (0.002)	0.266
Language in which the respond	lent can convers	e					
English	0.152 (0.359)	0.016 (0.126)	0.136 (0.009)***	0.857 (0.350)	0.839 (0.367)	0.018 (0.003)***	0.000
French	$0.245\ (0.430)$	$0.486\ (0.500)$	-0.242 (0.010)***	0.110 (0.033)	$0.004\ (0.060)$	-0.003 (0.000)***	0.000
English and French	$0.565\ (0.496)$	$0.497\ (0.500)$	0.069 (0.012)***	$0.079\ (0.270)$	$0.155 \ (0.362)$	-0.076 (0.003)***	0.000
Neither	$0.038\ (0.190)$	$0.080\ (0.028)$	0.037 (0.006)***	$0.063\ (0.243)$	$0.020\ (0.045)$	0.061 (0.002)***	0.000
N	4,599	53,703		33,348	193,665		

Notes: This table displays the weighted (sample weights from Statistics Canada) summary statistics for independent variables. The statistics are presented by region, Quebec and the rest of Canada, for immigrants and non-immigrants. Standard deviations are in parentheses (standard errors for the Differences columns).

^{*** :} significant at 1%; ** : significant at 5%; * : significant at 10%