The effect of job characteristics on the self-rated health of immigrants to Canada

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ABSTRACT *The objective of this paper is to look at the effect of income and job characteristics as 'fundamental causes' of health, and to compare those key determinants on immigrants and non-immigrants in Canada. We consider the effects of employment, education and qualifications (including those received prior to migration), and labour outcomes on measures of self-rated health. The data used in this study comes from the Survey of Labour and Income Dynamics (SLID), which is a panel study collected yearly by Statistics Canada. An event history analysis is conducted using a piecewise constant hazard model with time-varying covariates. Results show small differences between native-born and immigrant Canadian workers with respect to health. There is also a strong correlation between working and likelihood of worse health, and important differences in the gender effects of degradation in health for immigrants, though no effect is obvious among native-born Canadians.*

There is varying support in Canada for the idea that recent immigrants are healthier than the populace as a whole and that they converge to the population's health upon arrival (McDonald and Kennedy 2004; Hyman, 2004; Ng et al.: 2005; Ali et al.: 2004). Recent immigrants tend to be in better health than the general population due to the "healthy immigrant effect" (Chen, Ng and Wilkins 1996). This trend has two components: 1) a self-selection process where healthy, motivated and able individuals are more likely to make the move to immigrate, compared to those who are sick, disabled or in institutions, and 2) a selection bias where over 60% of new immigrants to Canada are selected as "the best" immigrants based on their qualifications, language proficiency and education (skilled immigrants); all characteristics that fit with a healthy lifestyle (Ali et al.: 2004, Hyman: 2004). Results from the Longitudinal Survey of Immigrants to Canada reveal that six months after their arrival, 97% of immigrants reported their health as good, very good or excellent (Statistics Canada: 2003), compared to 89% of the Canadian population overall (Statistics Canada: 2004).

Yet, immigrants' self-perceived health deteriorates over time, more so than non-immigrants. Immigrants are more likely than non-immigrants to change their self-reported health status from excellent, very good or good, to fair or poor health (Ng et al.: 2005). The causes for this deterioration may include the stress related to the experience of immigration (Newbold and Danforth: 2003, Hyman: 2004), the lack of social and family support (Dunn and Dyck: 2000), adopting an unhealthy lifestyle (Ng et al.: 2005), or difficulties in stepping into a new labour market with differential opportunities most often weighted towards low-prestige jobs.[1] Migration and labour may therefore act in

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[1] Immigrants in Canada seem to make slightly better use of the healthcare system, if any significant difference is present (Chen, Ng and Wilkins 1996)

accordance to generalized fundamental cause theory, where migration is the impetus and labour outcomes in relation to educational background the lens in creating inequalities in migrant health after migration (Link and Phelan 1995).

The Changing Role of Labour

The development of information technology, along with globalization, has changed today's workplace. Obstacles to free market were diminished, and whole sections of the economy were privatised to make easier the integration of the national economies into this global economy (Pettrella: 1997). Liberalised trade having replaced political regulations (Simard: 2001), national governments have been less able to protect local workers as regards to job security and the local companies as to international competition (Brown and Lauder: 2001). To face this new world competition, firms have had to find new ways to manage their human resources and reduce costs. This has taken the form of delocalisation, massive downsizing and the expansion of non-standard work. Flexible work arrangements were developed that easily adapt to the constantly changing needs of the market (Tremblay 1994). The main consequence of delocalisation, disintegration of the production process (Feenstra: 1998), for developed countries has been the decline of the primary and secondary sectors leading to the development of the tertiary sector (Richmond: 1992, Tremblay: 1994). In 2001, about half of the jobs ended within the first year of starting (Statistics Canada 2005).

Standard work refers to a situation where an employee works full-time, year-round, has one employer, has a permanent position, and enjoys extensive statutory benefits and entitlements, and expects to be employed indefinitely (Cranford, Vosko, and

Zukewhich 2003). In the definition of non-standard work, Statistics Canada includes part-time work, temporary employment, holding multiple jobs and own-account (self-employed without paid employees). The number of people with non-standard work is increasing and there are no signs that this situation will change (Townson 2003; Krahn 1995; Vosko, Zukewich, and Cranford 2003). Krahn (1995), for instance, shows that the prevalence of non-standard work increased by 1% per year between 1989 and 1994. Yet, this growth is not experienced equally, with women and immigrants taking up the vast majority of non-standard work (Cranford, Vosko, and Zukewhich 2003).

Table 1 presents the proportions of people living in Canada working in the four types of non-standard work, with updates from 2005 (Statistics Canada 2006). The proportions of Canadians working in three of the four forms of non-standard work increased from 1989 to 2005: part-time employment (from 15% in 1989 to 20% in 2005), temporary employment (8% in 1989, 13% in 2005) and own account (7% in 1989, 16% in 2005).

****************** Table 1 ******************

The amount of part-time labour has increased from about 4% of total employment in the 1950s to almost 19% in the second half of the 1990s (Smith: 1999, Marshall: 2001). The increase in part-time work has been across all industries, even those with higher baseline levels such as the service industry. Temporary employment is the newest and fastest growing form of non-standard work in Canada (Lowe: 2001). In 2000, 13 percent of the workforce was in temporary positions, up from 11 percent in 1997 (Picot, Heisz

and Nakamura: 2001, OECD: 2002). Self employment also rose during the 1980s and 1990s, even during the strong economic growth in 1997-1998 (Picot, Heisz & Nakamura: 2001; Picot & Heisz: 2000). Average annual growth in self-employment was 3.7% in the 1980s and 3.4% during the 1980s (Picot, Heisz & Nakamura: 2001). "Full-time paid jobs accounted for only 18% of all net job creation in Canada. […] Self-employment accounted for about 58% of the net change during the 1990s" (Picot & Heisz: 2000). Some believe these changes are due to a fundamental change in human resource management and not slack labour demand or other push factors (Picot & Heisz: 2000).

Other forms of non-standard work include working on shifts, working long hours, and having a flex-time schedule. Three out of ten employed Canadians worked some type of shift in 2000-2001 (Statistics Canada 2002), and one-third of Canadian employees report having flex-time schedules (Comfort et al. 2003). Blue-collar workers or those in sales and service occupations are more likely to work shifts than those in white-collar or clerical jobs. Flex-time arrangements are most prevalent in small establishments, non-unionized settings, low-skill occupations, retail and commercial industries. Still, about one full-time employee in five works weekends (Silver and Compton 2002).

All of these non-standard work arrangements (part-time work, shift work, flexible hours, working long hours, self-employed, temporary work, multiple job holding, etc.) are not exclusive. Those working part-time or long hours are more likely to have non-standard schedules (Statistics Canada 2002). As well, people working on weekends are more likely to be shift workers. Relatively few self-employed individuals have an evening, night or rotating schedule, but a high proportion of self-employed work irregular hours (Statistics Canada 2002).

Social Determinants of Immigrant Health

Differences among immigrant sub-groups exist, whether we look at socio-economic status, region of origin or period of immigration. People with a higher socioeconomic status (upper middle or high income adequacy, postsecondary education, being employed, without welfare as a major source of income) are less likely to be unhealthy, regardless of immigration status (Newbold: 2005, Newbold and Danforth: 2003, Dunn and Dyck: 2000). There also seems to be a difference based on the region of origin: immigrants from European origins have similar self-reported health than non-immigrants, whereas immigrants from non-European origins have worse health (Ng et al.: 2005, Dunn and Dyck: 2000). This finding is contestable as period of immigration (highly related to place of immigrant origins) plays a similar role in determining self-perceived health: non-European immigrants who arrived starting since the mid-1980s have fewer chronic conditions and less disability than longer-term European immigrants irrespective of age (Chen, Ng and Wilkins 1996). Long-term European immigrants are also more likely to report a deterioration of their health than are recent European immigrants (Ng et al.: 2005). One thing that remains unclear is whether the effect of the period of employment is a cohort effect or part of the immigration process. Put differently, is it how living in Canada affects the health of immigrants or the effect of immigrating in the 60s, 70s or 80s (Ali et al.: 2004)?

Education, labour, and income are all determinants of the health of a population. The effect of education on health is well documented so that people with better education tend to have better health habits and better health (Lynch et al.: 1997). Equally important

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are the two ways that labour affects health: 1) being employed is better for your health than not, and being stably employed is better for your health than job insecurity irrespective of the level of job (Wilkinson and Marmot: 2003); and 2) the class of employment, especially with respect to the amount of authority and control that people are given at work, is integral to maintaining good health (Marmot: 2004). In Canada, people with post-secondary education are 15% less likely than anyone else to report poor health, and those who are employed are 61% less likely than those who are unemployed to report poor health (Newbold: 2005).

Labour Markets and Health

The labour market outcomes of immigrants to Canada have worsened over the past 25 years, whether compared to previous cohorts of immigrants or to Canadian-born workers. Despite a massive increase in their educational attainment, the earning gap between immigrants entering the Canadian labour market and native-born Canadians has increased during the 1990s, as compared to those of the 1970s (Picot: 2004). "Recent immigrant men employed on a full-year, full-time basis saw their real earnings fall 7% on average from 1980 to 2000 (Statistics Canada: 2003)." One reason for this disparity is that immigrants are more likely to work as self-employed (Li: 1997) and part-time workers (Badets and Howatson-Leo: 1999), whose non-standard work is regularly correlated to worse health outcomes in Canada (Jamal 2004).

A report from Statistics Canada (2002) examined the effects of shift work on health, revealing a variety of negative complex effects. Having an evening shift one year can be associated with an increase in psychological distress for the following two years.

Night workers and those working rotating schedules were more likely to perceive a lack of control in their lives than day-time workers. Those men working irregular shifts, on the other hand, had a high sense of mastery, which may reflect the high proportion of self-employed workers among irregular shift workers. For women, those working an irregular shift were more likely than daytime female workers to report high personal stress.

Part-time work offers certain advantages for women, especially for mothers. Zuzanek (2000) studied the work-family balance of part-time employed mothers with children under the age of 5. She found that, compared to full-time working mothers and homemakers, part-time employed mothers: 1) Worry less about not spending enough time with family and friends; 2) Are less likely to cut back on sleep to save time; 3) Less frequently report not having time for fun or that they feel trapped in their daily routine; 4) Are more likely to report feeling "very happy"; 5) Show greater satisfaction with their use of time; 6) Their self assessment of their health is higher; 7) Report fewer sleeping problems than those working full-time or at home.

Objective

Little is known of the health outcomes of migrants in relation to their occupational experiences upon arrival. More studies are needed on socio-economic factors related to the health of immigrants (Ali et al.: 2004), such as job characteristics. Cross-sectional surveys appear to be a limitation when studying complex experiences like the integration of immigrants (Dunn and Dyck: 2000, Hyman: 2004). There is therefore a need for longitudinal analysis over a large sample of immigrants to account for the

differences between recent and long-term immigrants, especially in comparison to non-migrants with respect to health (Ali et al.: 2004).

The objective of this paper is to look at the effect of job characteristics as key social determinants of immigrant health, and to compare those key determinants on immigrants and non-immigrants in Canada. Since education is so important in much of the literature on both labour outcomes and health, we are going to fill the aforementioned gap by considering the effects of employment, education and qualifications (including those received prior to migration), and labour outcomes on measures of self-rated health.

Data

The data used in this study comes from the Survey of Labour and Income Dynamics (SLID), which is collected yearly by Statistics Canada. SLID is a household panel study that follows individuals in households over a period of six years. The data for this study comes from panel 4 which started in 2002 and ended in 2006. The data presented are weighted to the population. Data will be drawn specifically from SLID because it includes detailed information on job history (unlike the National Population Health Survey), has a self-reported health status variable (unlike the Labour Force Survey), and enables comparison with non-immigrants (unlike the Longitudinal Study of Immigrants to Canada). The SLID follows an average of 28000 individuals in 15000 households over each six-year panel. It has response rates starting at 76% for the first wave, and between 85 and 95% in each year thereafter.

The sample in this study includes all respondents who had at least one job during the study period, since our main focus is on the effects of job characteristics on self-rated

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health. We also selected respondents aged 25 to 64, which corresponds to the "working-age" group. They are more likely to have completed school and less likely to have entered retirement (Gilmore and Le Petit: 2008).

Methods

SLID is a panel survey, so longitudinal analysis is possible. Using the piecewise constant exponential model (PCE), we look the time taken to experience a deterioration in self-assessed health of Canadians aged 25 to 64. In some tables, the hazard rate is estimated separately for immigrants and native-born Canadians. In PCE models, the hazard is assumed constant within pre-specified survival time intervals but the constants may differ for different intervals (Powers and Yn: 2009). In this study, an interval was defined for each year of the study, for two main reasons: 1) self-rated health is measured once a year (at the end of each year), therefore a transition (experiencing lower self-rated health) is impossible <u>during</u> a given year; 2) time-varying covariates (such as job characteristics) varies throughout the study-period (not just once a year).

The transition rate is to be interpreted as the probability of the transition from the origin self-rated health to a lower self-rated health. Covariates in the model may be time-invariant or time-varying. A transition rate is "the probability that an event occurs in the time interval from t to t', given that no event (transition) has occurred before, that is, in the interval from 0 to t." (Blossfeld and Rohwer: 2001: 32)

One of the strength of survival analysis is its capacity to deal with censored cases, as long as censoring times are random (Luke: 1993). Censored cases have not experienced the event during the observed period. The cases are part of the population at risk, and are taken off when their observed period is over. Censored cases are not

calculated in the transition rate. There are two types of censoring: left censoring and right censoring. Right censoring occurs when the study is closed or when the subject is lost from follow-up (Yu: 2007). Left censoring occurs when the event was experienced before the observed period. In our case, some respondents may have experienced deterioration in self-rated health before or after the study period.

Measures

Self Rated Health

Self Rated Health is a commonly used general measure of overall health at the population level. It is a strong predictor of mortality and morbidity early in life as well as later (Idler & Benyamini: 1997; Miilunpano *et al*: 1997; Mossey & Shapiro: 1982). The literature is pretty clear on self-rated health being a good measure of general health. However, it is oft criticized for a variety of reasons. One of the problems that may come up here is its short range (1-5) and inability of people who are currently in poor helath to get worse. Another is that we really don't know what it means a lot of the time (Krause & Jay: 1994): it definitely takes into account some concept of mental health, and does relate to likelihood of seeing a doctor (Miilunpano *et al*: 1997). Importantly, it may not actually relate to practical issues of health such as limitations in ability to work, or necessity of taking days off. However, it is the most used epidemiologic measure, it is available at all years, is easily understood by respondents from a variety of backgrounds, including immigrants, and can be used irrespective of histories of healthcare use, or ability to receive days off work for sickness, different policy environments, *etc*. It is measured on the common five-point scale: 5 being 'poor', and 1 being 'excellent'. However, here

health is included in the models as *likelihood of first degradation in self-rated health score* conditional on lack of censure. This is particularly important as it allows us to study the impact of important variation while controlling for the fixed-effect implicit in health at baseline for individuals.

Immigration Status

Immigrants arrive healthier on average than the Canadian population. This is an advantage that slowly regresses towards the Canadian average. However, over time this is lost due in part, we content, to worse employment experiences. As such, immigration status has been included as time-invariant variables. In some tables, a comparison between recent immigrants (those who arrived less than 10 years before 2002) and long-term immigrants (those who arrived prior to 1992) is made.

Predictors

Hourly Rate

Health has been related to income in a variety of situations, both in Canada and abroad (Humphries & Doorslaer: 2000).For workers, salary is the criteria that defines best the quality of a job. It is also the most popular and more often measures indicator of job quality (Lowe: 2000). Because hourly rate is a job-specific characteristics, and because respondents may have had more than one job during the study-period, it is a time-varying covariate.

Non-Standard Employment

Non-standard work is related to heterogeneity in benefits, and in pay, with most non-standard workers receiving fewer benefits and lower pay. This analysis includes

many measures of non-standard employment: 1) part-time work, 2) temporary work, 3) irregular work schedule, and 4) multiple job holding.

Education

Education is one of the most important determinants of health and inequalities in health. Selection as an immigrant to Canada depends to a large extent on education received prior to application. This education along with education received at a Canadian institution will determine the types of health trajectories, and employment opportunities, that any immigrant undergoes while in Canada. Education has been coded here on a four-part ordinal scale going from less than high school to university degree.

Gender

Working long hours is more common among men than among women. In the mid-1990s, 50% of men reported working 41 or more hours per week, whereas 28% of women did. Among those who worked long hours, 32% of men and 19% of women reported working 60 hours or more (Shield 2000). The proportion of those who reported having flex-time arrangements is higher among men than among women (43.6% and 42.4% of men, compared with 34.7% and 40.8% of women). Here, gender has been included as a dichotomous measure based on respondent's declared gender. Gender is a time-invariant measure.

Age

There is a negative relationship between a non-standard work schedule and age: older workers are less likely to do shift work than their younger counterparts (Statistics Canada 2002; Presser 2003). Age is also heavily correlated to health. Here age has been included as number of years since birth.

Relationship Status

Unmarried workers (never married and those previously married) are more likely to have non-standard work schedules (Statistics Canada 2002; Presser 2003). Marriage and couple-hood are often correlated to a variety of health and behavioural benefits (Travato & Lauris: 1989; Waite: 1995). Here, relationship status has been included as a dichotomous variable: "couple" includes married and common law couples, and "single" includes never married and those previously married.

Preliminary Results

Table 2 presents a description of the sample. About one respondent out five is foreign-born (21.3%). Most of immigrants are long-term immigrants (14.5% long-term immigrants, compared with 6.4% recent immigrants). The vast majority of immigrants in Canada live in Toronto (Ontario), Vancouver (British Columbia) or Montreal (Quebec); the results reflect this reality. Almost three quarter of the sample is either married or common law; the proportion being higher among immigrants (78.2%) than among native-born (70.8%). The mean work experience is 18 years. Not surprisingly, most immigrants completed their education outside Canada (74.5%), whereas most native-born completed their studies in Canada (95.2%). A little over half of the respondents occupied only one job during the study period.

Table 3 presents results pertaining to the dependent variable. Over 90% of the sample rated their health as excellent, very good or good, whether they are immigrants or non-immigrants, whether it is in 2002 or 2006. Over 40% of the respondents experienced

deterioration in health between 2002 and 2006. Of those who did experience deterioration in health, almost half of them did it in 12 months.

The clearest deviation from the literature is that there was no evident advantage in self-rated health to being an immigrant in Canada. As can be seen from table 3, the differences in measures of beginning the period with good health, ending with poor health, deterioration, and rapidity of deterioration were all significantly different. These differences, however, were such that immigrants were worse off on every measure. However, if we consider the descriptive found in table 2, we can see that some obvious differences, such as the heightened age of the immigrant sample, may attenuate these differences.

The survival analysis is separated into three tables. Table 4 presents the transition rate of all respondents in the sample. Its purpose is to account for the effect of immigration status on the transition rate. In tables 5 and 6, separate analyses were conducted for immigrants and native-born Canadians to account for the effects of independent variables on the transition rate of each sub-group. Table 6 focuses on the respondents who are working. All tables include individual characteristics, such as age, gender and province of residence, as well as human capital characteristics, such as work experience, education level and place of education. Tables 4 and 5 include a time-varying variable to indicate whether a respondent is, at any point in time, working or not. In Table 6 job characteristics were added: 1) measures of non-standard work, 2) the number of employees at a person's workplace, 3) whether or not the job involves a supervision of employees, and 4) an indication of whether the employer is in the private or public sector.

The first model of table 4 looks at the gross effect of immigration status on the transition rate into a deterioration of self-rated health. As can be seen from model 1 in table

4, immigrants seem significantly better off than are native-born Canadians. Model 2 of table 4 shows that in controlling for major demographic differences including age, that this difference is reduced though it remains significant. The addition of important education and employment variables, however, reduces differences between Native-born and Immigrant Canadians to insignificance. Specifically, higher education, not including non-university education, plays a strong role in the protection of health in the population as a whole, and this in addition to employment status accounts for the difference between native-born and immigrant Canadians. Age affects the transition into worse self-rated health. Not surprisingly, as people age, they are more likely to experience deterioration in health. Age remains significant when human capital attributes are added.

The literature shows that being employed is better for your health. However, our results in table 4 show a positive association between working and deterioration in health. Two explanations are possible: 1) It may be an artifact of the health measure: people who are in worse health are much less likely to be working, and as such are much more likely to be barred from experiencing worse health on the five-point scale (worse health than poor is still poor), or 2) The sample selection may be another explanation. Our sample includes those who have had at least one job during the study period; therefore, it does not include those who are out of the labour market for a long period of time (e.g. social welfare, stay-at-home mothers, full-time students with no part-time jobs, retirees) and who may be more likely to have poor health.

The Wald chi-square indicates the relative importance of a group of covariates in a given regression model. When we compare the Wald chi-square of the three models in table 4, we can see that the model 2, which includes the immigration status and other individual

characteristics, better explains the dependent variable, because it has the highest Wald chi-square.

Table 5 shows the findings for table 4 done separately for immigrant and native-born Canadians. These show a similar if more nuanced picture. Age is a significant predictor of deterioration in health in both immigrants and native born, but the effect is stronger for immigrants (0.14 for immigrants versus 0.01 for non-immigrants). Variation around gender and region does not show any significant patterning that may be worth further study. Finally, working is highly significant predicting worse health.

Table 6 attempts to get around the truncation and healthy-worker effects by focusing the analyses on those who are currently working. What we get here is a more robust view of the actual workforce in both the Native-born and Immigrant populations. Non-Immigrants see strong educational protection and worse income relations to health in model 1. The addition of multiple jobs in model 2 shows that much of this effect is likely to do with the ability for education to provide more stable employment. Greater deterioration in health due to income is shown to be related to the heightened income related to holding more than one job, as this effect disappears upon the addition of multiple job holding. Immigrants do not experience these same patterns.

As can be seen in table 6, higher incomes are related to worse health. However, the inclusion of a variety of employment variables reduces this effect significantly. The important effects in the full model turn out to be gender and region rather than working conditions. Being female was significantly related to deterioration in health for those immigrants who were working. Similarly, being in Quebec was significantly related to deterioration in health for immigrants though not native-born. Education has a large protective effect, though due to large variance these effects are non-significant.

Interestingly, unlike for native-born Canadians, immigrants in Canada do not show significant deterioration effects due to holding multiple jobs.

Discussion

The most significant finding presented here focuses on the truly small differences between Native-born and Immigrant Canadians with respect to health. A difference that predicts worse health is seen at first, suggesting that immigrants are more likely to suffer from degradation in health. This is explained away by the inclusion of educational and employment differences. Educational differences show protective effects, suggesting that in fact much of the increase in degradation is due to differences in employment routines. We showed here that such differences are not related to disparate working conditions. Instead, this can be related to the trajectories of employment that immigrants are more likely to experience. This includes such things as jumping in and out of employment. This finding is further strengthened by the difference in strength of relationship between holding multiple jobs and health.

Some of the interesting findings were non-occupational in nature. There is a strong correlation between working and likelihood of worse health. This is likely an artefact of the data due to truncation of the scale at poor: we know that people who are not working are much more likely to be in worse health (the 'Healthy Worker Effect'), but because they are already in bad health they cannot get worse on a scale such as this. However, it does suggest that we take a closer look at exactly what this means.

There are important differences in the gender effects of degradation in health for immigrants, though no effect is obvious among native-born Canadians. This belies an

interesting problem that should be looked at more carefully. Is there something about being an immigrant woman that is worse than being an immigrant male?

Policy Implications

The results here suggest a variety of important strengths to the Canadian immigration structure. The first is that some equality in outcome is achieved in the employment and educational sphere: once working, there is little difference in the health of workers. The second is that the employment sphere in Canada does not seem to be hurting immigrants. Degradation in health was not tied to any forms of employment differentially to Canadians. Finally, the lack of importance in the implications of where education was received implies that the health benefits of education both for native-born and immigrant Canadians do not depend on the place that such an education was received. However, the increased importance of employment to the immigrant population suggests an area that may need some work. If one of the major differences predicting poorer immigrant health trajectories is an elevated non-working status, policies need to consider these effects and open up more opportunities to finding stable and consistent work.

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Table 1 *Proportions of Canadians working in four forms of non-standard work, Canadians aged 15 and over, 1989, 1994 and 2005*

	Part-time Employment	Temporary Employment	Multiple Jobholding	Own Account
1989	15%	8%	5%	7%
1994	15%	9%	7%	9%
2005	18%	13%	5%	16%

Sources: Results of 1989 and 1994: Krahn (1995). Data come from the General Social Survey (GSS)
Results of 2005: Statistics Canada (2006). Data come from the Labour Force Survey (LFS)

Table 2: Description of the sample, Canada, 25 to 64 years old, 2002 to 2006 (panel 4)

	Immigrants	Native-born Canadians	Total
Immigrants			21.3
Recent Immigrants	30.4	.	6.4
Long-term Immigrants	69.6	.	14.5
Age			
25 to 34	21.7	28.2	26.8
35 to 44	31.8	32.8	32.6
45 to 54	30.9	27.7	28.4
55 to 64	15.6	11.3	12.3
Sex			
Male	52.8	52.6	52.8
Female	47.2	47.4	47.2
Province of Residence			
Maritimes	1.2	9.5	7.0
Quebec	13.2	27.3	24.0
Ontario	55.5	33.6	38.5
The Prairies	12.3	18.3	16.9
British-Columbia	17.9	11.5	12.9
Relationship Status			
Couple (Married or Common Law)	78.2	70.8	72.4
Single	21.8	29.2	27.6
Mean Work Experience (Years)	17.0	18.5	18.2
Education Level			
Less than high school graduation	12.9	13.5	13.4
Graduated high school	25.2	28.4	27.8
Non-university postsecondary certificate	29.2	35.8	34.5
University degree or certificate	32.7	22.3	24.4
Place of Education of Highest Degree			
Canada	25.5	95.2	84.4
Outside Canada	74.5	4.8	15.6
Number of Jobs between 2002 and 2006			
1	55.1	52.9	53.4
2	27.1	25.8	26.2
3	10.0	11.4	11.0
4	4.1	4.8	4.6
5 or more	3.7	5.1	4.7
Total	100%	100%	100%

Source: SLID, panel 4

Table 3: Self-Rated Health in 2002 and 2006, and Number of Months until Deterioration in Health, by Immigrant Status, Canada, 25 to 64 Years Old

	Immigrants	Non-Immigrants	Total
Self-Rated Health in 2002			
Excellent	28.8	32.9	32.1
Very good	32.9	37.4	36.5
Good	31.0	23.2	24.8
Fair	6.1	5.3	5.5
Poor	1.2	1.2	1.2
Self-Rated Health in 2006			
Excellent	25.1	28.3	27.5
Very good	30.7	38.4	36.9
Good	30.1	26.4	27.0
Fair	9.8	5.5	6.5
Poor	4.4	1.4	2.1
Self-Rated Health Comparison – 2002 and 2006			
Improvement	20.5	23.6	23.5
Stayed the Same	30.9	34.2	34.1
Deterioration	48.6	42.2	42.4
Number of Months until Deterioration in Health			
12 months	51.8	45.9	47.1
24 months	21.0	24.9	24.1
36 months	15.3	17.3	16.9
48 months	11.8	11.9	11.9
Difference between Immigrants and Non-Immigrants			Difference
At 12 Months of Deterioration in Health	51.8	45.9	5.9*
At Deterioration between 2002 and 2006	48.6	42.2	6.4*
At Excellent or Very Good in 2002	61.7	70.3	-8.6*
At Fair or Poor in 2006	14.2	6.9	7.3*

Source: SLID, panel 4

*$p \leq 0.05$

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Table 4: Coefficient Estimates for Transition into Worse Self-Rated Health, Canada, 25 to 64 Years Old

	Model 1	Model 2	Model 3
Native-Born (ref. Imm.)	0.19*	0.12*	0.09
Age (Continuous)		0.01***	0.01**
Female (ref. Male)		-0.02	0.02
Single (ref. Couple)		0.15	0.04
Province (ref. Ontario)			
Maritimes		0.12	-0.03
Quebec		-0.001	-0.03
Prairies		0.02	-0.02
British-Columbia		0.01	0.01
Educated outside Canada (ref. Canada)			0.08
Work Experience (Years)			-0.0003
Education Level (ref. Less than high school graduation)			
Graduated high school			-0.10*
Non-university Post-Secondary			-0.06
University degree			-0.15**
Working			0.88***
Log pseudo-likelihood			
Wald chi2			
Number of Respondents			12,872

Source: SLID, panel 4
***$p \leq 0.01$, **$p \leq 0.05$, *$p \leq 0.10$

Table 5: Coefficient Estimates for Transition into Worse Self-Rated Health, by
Immigration Status, Canada, 25 to 64 Years Old

	Immigrants		Non-Immigrants	
	Model 1	Model 2	Model 1	Model 2
Age (Years)	0.14***	0.01*	0.01**	0.01*
Female (ref. Male)	0.07	0.17	-0.04	-0.02
Single (ref. Couple)	-0.01	-0.02	0.02	0.05
Province (ref. Ontario)				
Maritimes	0.23	0.12	-0.02	-0.06
Quebec	0.14	0.20	-0.03	-0.06
Prairies	0.19	0.09	-0.03	-0.05
British-Columbia	0.15	0.12	-0.05	-0.02
Work Experience (Years)		0.0008		-0.002
Education Level (ref. Less than high school graduation)				
Graduated high school		-0.14		-0.10
Non-university Post-Secondary		-0.04		-0.06
University degree		-0.15		-0.15**
Educated outside Canada (ref. Canada)		0.09		-0.04
Working		0.93***		0.87***
Log pseudo-likelihood				
Wald chi2				
Number of Respondents		1,468		11,404

Source: SLID, panel 4

***$p \leq 0.01$, **$p \leq 0.05$, *$p \leq 0.10$

Table 6: Coefficient Estimates for Transition into Worse Self-Rated Health for those working, by Immigration Status, Canada, 25 to 64 Years Old

	Immigrants			Non-Immigrants		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Age (Years)	0.02*	0.01	0.01	0.01*	0.003	0.003
Female (ref. Male)	0.27*	0.18	0.28*	0.04	-0.06	-0.09
Single (ref. Couple)	0.03	0.08	0.08	0.03	-0.01	-0.04
Province (ref. Ontario)						
Maritimes	0.27	0.06	0.04	0.03	-0.11*	-0.13*
Quebec	0.26	0.44	0.50*	-0.001	-0.08	-0.07
Prairies	0.14	0.17	0.22	-0.03	-0.11*	-0.12*
British-Columbia	0.17	0.01	0.07	-0.03	-0.08	-0.08
Work Experience (Years)	-0.01	0.01	0.01	-0.003	-0.001	-0.002
Education Level (ref. Less than high school graduation)						
Graduated high school	-0.26	-0.14	-0.35	-0.15**	-0.04	-0.07
Non-university postsec.	-0.18	0.02	-0.19	-0.13*	-0.06	-0.08
University degree	-0.39	-0.15	-0.28	-0.36***	-0.12	-0.12
Educated outside Canada (ref. Canada)	0.05	-0.01	0.05	0.004	0.15	-0.02
Hourly Rate ($)	0.02***	0.001	0.0003	0.01***	-0.0001	-0.0005
Multiple Job Holding		-0.15	-0.04		0.21**	0.21**
Permanent Position		0.15	0.11		0.09	0.10
Part-time job		0.08	0.18		-0.03	-0.07
Irregular work schedule		0.02	-0.07		-0.009	-0.02
Supervision of Employees			-0.04			-0.07
N ~ Employees (ref. Less than 20)						
20 to 99			0.04			-0.0005
100 to 499			0.23			-0.08
500 to 999			0.17			-0.17
1000 and over			0.11			0.07
Employee: Private Sector			-0.10			0.02
Log pseudolikelihood						
Wald chi2						
Number of Respondents	1,328	1,206	1,137	10,561	9,944	9,611

Source: SLID, panel 4
***$p \leq 0.01$, **$p \leq 0.05$, *$p \leq 0.10$

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