University of Alberta

When skills don't matter: Occupational status recovery inequalities within Canada's highly skilled immigrant population

by

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For the young man

who left the cobblestones and cotton mills of Northern England

to forge a new life, and legacy, in Canada.

Abstract

This dissertation explores potential explanations for why occupational status recovery inequalities develop within Canada's highly skilled immigrant population during the first four years of settlement. Using a nationally representative dataset, the Longitudinal Survey of Immigrants to Canada, the first empirical chapter establishes a gender/race hierarchy of outcomes despite accounting for human capital and other labour market differences (Chapter 2). Upon identification of this hierarchy, the remaining chapters explore possible causes for the disadvantaged position of immigrant women and non-white immigrants, including the influence of credential source area, and occupational clustering by ethno-racial background (Chapter 3) and gender processes within and outside of the domestic home (Chapter 4). Chapter results reveal that the disadvantaged position of non-white immigrants remains largely unexplained. A number of possibilities for this unexplained difference are discussed. Although ethnic social networks or ethnic economic enclaves may account for the economic underperformance of non-white immigrants relative to white immigrants, outcomes also provide support for claims that non-white immigrants face labour market discrimination in Canada. Furthermore, the especially disadvantaged position of non-white immigrant women appears to be due to the additive effects of an "unexplained" effect experienced by all non-white immigrants and gendered responsibilities within the domestic home (i.e., childcare). Principal conclusions, future research directions, and policy implications are discussed at the end of each chapter as well as within the main discussion section (Chapter 5).

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Chapter 1
Introduction

In 1967, Canada unveiled its points system, a new immigration program facilitating the flow of independent migrants into the country. The development of the points system was guided by two major forces: the public's demands for a non-discriminatory immigration program and the country's need for highly skilled workers (Hawkins, 1988; Li, 2003). Thus, contrary to previous selection practices, national origin no longer determined applicant suitability. Those wishing to immigrate to Canada as skilled workers were, and continue to be, assessed on the basis of their human capital portfolio and labour market skills.

The institution of Canada's points system coincided with another migration trend: the steady decline of emigration from Europe (Akbari, 1999). This, partnered with the non-discriminatory nature of Canada's points system, has culminated in Canada's acceptance of large numbers of highly-educated immigrants from non-traditional source countries. For over forty years the points system has facilitated the migration of the world's intellectual elite to Canada (Akbari, 1999; Bauder, 2003).[1-1] The percentage of immigrants with low-levels of education (high school or less) has dwindled while the proportion of immigrants with university credentials has continued to increase. Li (2003) shows that the percentage of newcomers with university credentials nearly doubled between the

[1-1] Even though the points system was instituted a little over forty years ago, little has changed to its general formulation. Over the years, restrictions to skilled worker entry have been implemented and then retracted, including restrictions that limited admittance to immigrants with skills in particular occupation types as well as insisting that immigrants arrange employment before migrating (Green & Green, 1999). Despite such alterations, today's points system is very similar to the one implemented in 1967.

years 1995 and 2000 (1995: 24.7% of immigrants over the age of 15 years at time of admission possessed university credentials compared to 44.0% in 2000). The ethnic composition of Canada's immigrant population has also changed dramatically. While nine out of ten immigrants who entered Canada prior to 1961 originated from Europe,[1-2] the 2006 Canada census reveals that three out of four people who entered Canada between the years 2001-2006 is a visible minority with the majority reporting Chinese or South Asian origins.[1-3,1-4]

Although this shift in immigrant composition is indicative of Canada's commitment to non-discriminatory selection practices, labour market trends reveal a disconnect between the neoclassical economic logic of the points system and the economic welfare of skilled immigrants in the Canadian labour market. Human capital theory, an integral part of neoclassical economics, suggests that employers will recognize the benefit of hiring workers with a proven capacity to produce, thus highly skilled workers will rapidly be absorbed into the labour market (Becker, 1962). Troublingly, despite possessing impressive human capital profiles, labour market returns to foreign human capital appear to be declining for successive cohorts of Canadian immigrants (Aydemir & Skuterud, 2005; Bloom, Grenier & Gunderson, 1995; Frenette & Morissette, 2005; Hum & Simpson, 2000; 2004; Li, 2001; Picot & Hou, 2003; Picot, Hou & Coulombe, 2007; Picot &

[1-2] Source: 1996 Canada Census (http://www12.statcan.gc.ca/english/census01/info/census96.cfm)
[1-3] Source: 2006 Canada Census (http://www12.statcan.ca/census-recensement/2006/rt-td/immcit-eng.cfm)
[1-4] Specifically, 58.3% of the immigrants captured in the 2006 Canadian Census report originating from Asia (including the Middle East); 10.8% originating from the Carribean, Central or South America and another 10.6% identifying as coming from Africa (Chui, Tran & Maheux, 2007).

Sweetman, 2005; Reitz, 2001; Schaafsma & Sweetman, 2001; Warman & Worswick, 2004; Waslander, 2003).

Several possible explanations for the downturn in immigrant economic performance exist. The first possibility is that since the majority of recent immigrants originate from non-traditional source countries, newer cohorts experience declining returns to foreign human capital due to language barriers (Aydemir & Skuterud, 2005; Boyd, 1999; Boyd & Cao, 2009). A second possibility is that the foreign work experience and educational credentials held by immigrants from non-traditional source countries do not suit the needs of Canadian employers (Reitz, 2001). Such explanations focus on human capital quality concerns, suggesting the fit between foreign human capital and what Canadian employers desire has diminished in recent years (Picot & Sweetman, 2005).

Notwithstanding the merit of explanations linking the diminished economic outcomes of immigrants to actual deficiencies in human capital quality (Borjas, 1985; 1993), these same explanations fail to explain labour market outcomes that continuously plague particular groups of immigrants. For example, explanations that centre on employer concerns with language fluency and wariness regarding non-Western degrees do not aid in answering why diminishment to occupational status or earnings in the Canadian labour market are greater for immigrant women than immigrant men (Beach & Worswick, 1993; Boyd, 1984; Gilmore, 2008). These discrepancies, as well as the diminished returns for non-white immigrants (Buzdugan & Halli, 2009; Ferrer & Riddell,

2008), lend support to claims that employers qualify human capital profiles using social markers of difference, which can include a person's gender, ethno-racial background and immigrant status (Adamuti-Trache & Sweet, 2005; Creese, 2009; Galabuzi, 2006; Williams, 1984). Thus, labour market discrimination comprises another rationale for the decreased labour market performance of contemporary immigrants in Canada (Picot & Sweetman, 2005).

My dissertation uses data from the Longitudinal Survey of Immigrants to Canada (LSIC) to inspect the validity of several common explanations for the underperformance of specific immigrant groups. While other studies have concentrated on immigrant earnings, I inspect occupational status recovery trends for highly skilled immigrants during their first four years in Canada. Since a person's occupation is intimately linked to a person's social station in a class-based society (Blau & Duncan, 1967; Boyd, 2008; Porter, 1965), my focus on occupational status instead of earnings allows for discussions of both economic and social inequalities. The majority of labour market scholarship relies on cross-sectional data, which is vulnerable to the entangling of age and cohort effects (Borjas, 1994). Since the LSIC is a longitudinal dataset, my dissertation is more conducive to discussions about how time in Canada impacts the economic station of immigrants.

Background Literature

In 1966, the Liberal government transferred the management of Canada's immigration program to the newly formed Department of Manpower and

Immigration (Hawkins, 1988). In an address to the House of Commons in May 1966, Prime Minister Pearson explained the logic supporting this decision:

> The government has … decided that it would be a wise course to place immigration under the same minister dealing with manpower generally. Immigration policy must be administered in the interests of the country and of the immigrants themselves in a context that takes into account the entire position of employment, training and placement in Canada. The association of the various aspects of manpower policies under the same minister should make it easier to implement programs and to implement them more effectively (Knowles, 2007, p.192).

This restructuring reveals the political opinion of the day: immigration must be economically beneficial to Canada. Out of concern with the skill-level of Canada's workforce (Knowles, 2007), the points system was designed to be both non-discriminatory and to fit the Department's desire to recruit "skilled, technical and professional workers" (Government of Canada, 1968, p.2).

Despite Pearson's address explicitly stating the government's economic goals with respect to Canada's immigration program, the family reunification program remained the principal migration scheme for Canada's newcomers until the mid-1980s. Approximately half of all immigrants who entered Canada in 1983 and 1984 did so via the family reunification program (Li, 2003, p.40). Not until the early 1990s did the Canadian government demonstrate an interest in ramping up admissions under the economic program. The annual report to parliament in 1991 reveals this interest:

> [T]he numbers of independent immigrants will be significantly increased over the five-year period. Immigration is an important source of highly skilled workers for Canadian

> business and industry. Under the 1991-95 Immigration Plan, the government will gradually increase the number and proportion of skilled workers, and a number of initiatives will make the program more responsive to national and regional labour market needs (Employment and Immigration Canada, 1991).

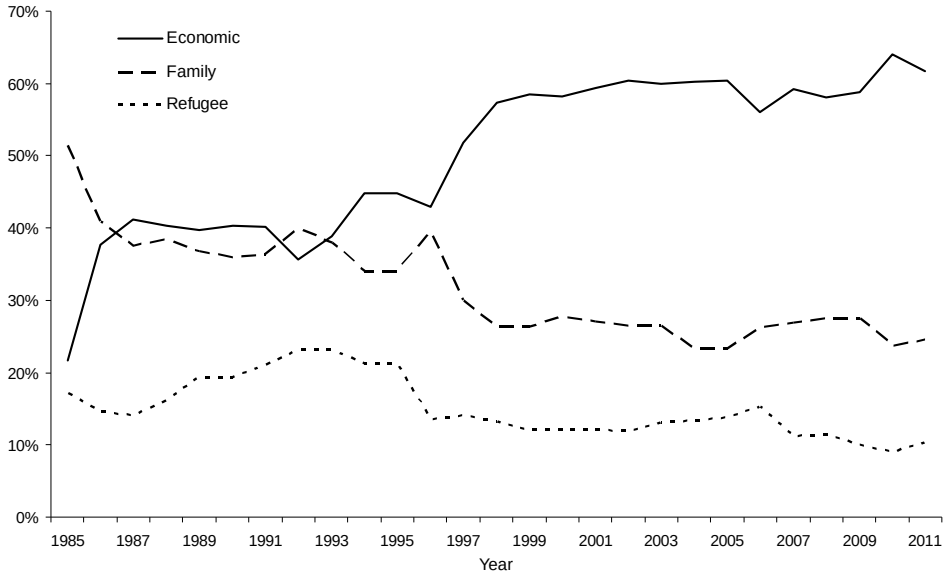
Even though total admission allotments were comparable to those established in the latter part of the 1980s, the 1990s witnessed a surge of support for the recruitment of economic immigrants to Canada as the proposed levels of economic immigrants spiked relative to the target quota for family-class immigrants. Figure 1-1 shows approximately 50% of immigrants who entered Canada in 1985 entered via the family reunification program; a representation much higher than the roughly 20% who entered under an economic program.[1-5] However, since the early 1990s, economic immigrants have claimed a larger share of total intake (Green & Green, 1999), with the majority entering as skilled workers.[1-6] By the late 1990s a substantial gap in proposed intake levels emerged between the three entry classes. Government interest in skilled workers is obviated by the substantially higher allotments for economic immigrants versus family or humanitarian classes.

In complete contrast to the government's hopes for the Canadian labour market, studies examining immigrant economic integration have demonstrated that recent cohorts of immigrants are not faring as well in the Canadian labour

[1-5] The 1984-1985 Annual Report was the first to propose specific levels of immigration according to particular entry classes.

[1-6] Of the 251,649 immigrants admitted to Canada in 2006, 138,257 or 55% were catalogued as economic immigrants. The remaining 45% of the immigrant total represented all other immigrant classes including family class immigrants, refugees, and others (Statistics obtained from cic.gc.ca homepage, August 13, 2008).

Figure 1-1
Proposed Immigrant Levels by Class of Entry 1985-2011[1-7]



market when compared to earlier generations of immigrants (Frenette & Morissette, 2005; Picot & Sweetman, 2005; Reitz, 2001; Schellenberg, 2004). Although it is expected that immigrants will experience initial setbacks upon arrival in a host labour market, assimilation theory posits that given time immigrants will regain their economic foothold relative to native-born workers who share similar human capital profiles (Chiswick, 1978).[1-8] Disconcertingly, Canadian labour economists and sociologists have noted that assimilation times are increasing with each successive cohort of immigrants, suggesting that foreign human capital is not as desirable to employers in contemporary markets (Frenette

[1-7] Data for Figure 1-1 were retrieved from: (Annual Report to Parliament on Future Immigration levels: 1984-1989; 1990 Annual Report to Parliament – Immigration Plan for 1991-1995; Citizenship and Immigration Canada Report on Plan and Priorities: 1996-2000; Citizenship and Immigration Canada Performance Report for the period ending March 31, 2003: 2002; Citizenship and Immigration Canada Annual Report to Parliament on Immigration: 2003-2010). Data for 2001 was estimated using averages for 2000 and 2002.

[1-8] Assimilation theory asserts that securing employment commensurate to skills is a time-sensitive endeavor. Economic establishment often relies upon processes that unfold over time, such as gaining familiarity with the host culture's employment practices and fulfilling accreditation demands, which oftentimes requires retraining (Chiswick, 1978).

& Morissette, 2005; Li, 2001; Picot & Sweetman, 2005; Schaafsma & Sweetman, 2001).

With the exception of Grant (1999), who demonstrated that the earnings of immigrants relative to native-born Canadians stopped deteriorating between the years 1985-1990, studies from the 1990s demonstrate that immigrants are taking longer to integrate into the Canadian labour market (Bloom, Grenier & Gunderson, 1995; Frenette & Morissette, 2005; Picot and Sweetman, 2005). Frenette and Morissette (2005) have demonstrated that initial gaps in earnings between immigrants and Canadian-born workers have widened so greatly in recent decades that immigrant earnings trajectories will have to grow at unusually high rates to allow convergence with Canadian-born counterparts.[1-9] This observation is echoed by Picot and Sweetman (2005) who report that although immigrant cohorts from the 1970s initially earned less than native-born Canadians, they were able to demonstrate a favourable trajectory, effectively

[1-9] The majority of immigrant economic performance scholarship employs large cross-sectional surveys to track changes in the average earnings disparity between sequential immigrant cohorts and age-matched native-born workers (Hum & Simpson, 2004). The two groups are typically age-matched as age serves as an excellent proxy of work experience (Borjas, 1994). Even so, the practice of comparing immigrant economic performance to that of age-matched native-born workers has been challenged in recent years. Green and Worswick (2004) argue that it is unreasonable to expect immigrants to catch-up to an age-matched native-born population as immigrants, no matter their age at time of entry, are new enterers to the Canadian labour market. As such, the economic performance of recent immigrant cohorts may be more in-keeping with other new enterers to the Canadian labour market, such as recent university graduates. Similar to university-graduates, recent immigrants also lack developed networks and experience with labour market culture in Canada (Bauder, 2005).

Rather than focusing on earnings performance, this dissertation inspects whether immigrants are able to regain pre-migration occupational status after migrating to Canada. Finding an appropriate reference category in the native-born population is a non-issue in this case as the economic outcome of interest is a phenomenon unique to an immigrant population. Instead, this dissertation makes comparisons between different subgroups of immigrants. The noted vulnerability of non-white and particularly non-white and female immigrants (Galabuzi, 2006) in the existing literature supports the use of white immigrant men as an appropriate reference category when inspecting occupational status recovery.

catching up to the earnings of their Canadian-born counterparts within twenty years, a finding that does not hold true for more recent cohorts (Frenette & Morissette, 2005). Immigrants entering during the 1980s still remain approximately 15% below that of native-born workers' earnings some 16-20 years since entering Canada (Picot & Sweetman, 2005).

The dramatic increase in immigrant economic assimilation times has fuelled questions about whether the human capital profiles of recent cohorts are of inferior quality compared to previous generations, a possibility due to the increased recruitment of immigrants from non-traditional source countries. The impact of poor language skills on the integration of immigrants into the labour market is indeed concerning especially for highly skilled immigrants (Boyd 1999, Boyd & Cao, 2009). Ferrer, Green and Riddell (2006) have recently demonstrated that literacy skills can account for as much as two-thirds of the earnings gap between university-educated immigrants and native-born Canadians. Further, human capital factors which include foreign university training (Li, 2001; Schaafsma & Sweetman, 2001) and foreign work experience (Aydemir & Skuterud, 2005; Green & Worswick, 2004) do not seem to possess the same degree of "worth" as they did in previous decades. Foreign degrees have been calculated as having approximately one-third the return as Western degrees, with this return diminishing further as a function of an immigrant's age (Schaafsma & Sweetman, 2001). Work experience yields even worse returns with recent research suggesting that Canadian employers view foreign work experience as essentially worthless (Schaafsma & Sweetman, 2001).

These recent findings lead to a controversial set of questions: do Canadian employers disregard immigrant human capital because the *quality* of the human capital is inferior to years prior? Or, are new immigrants *discriminated* against due to their country of origin or visible minority status? Frustratingly, these two possibilities are inextricably linked as both relate to the fact that the majority of Canadian immigrants originate from non-traditional source countries (Chui, Tran & Maheux, 2007; Li, 2001). Nevertheless, narrowing down the cause(s) for the devaluation of immigrant human capital is of great importance given that the majority of contemporary immigrants enter Canada via the skilled workers program (Hiebert, 2006), a program that selects newcomers on the basis of their human capital achievements.

Certainly, arguments that employers qualify human capital profiles in a discriminatory fashion based upon a person's nationality or ethnicity are not new (Peck, 1996). Even the human capital model of labour market relations, as Becker originally proposed in 1962, was heavily critiqued for this very reason. For example, Williams, an American economist trained in both neoclassical and heterodox economic theories (Figart, 2001), adamantly opposed the main tenets of Becker's (1962) human capital theory, arguing that it does not adequately explain the economic outcomes for all labour force enterers and that discrimination along racial, gender and class lines establishes and maintains economic inequalities in modern labour markets (Williams, 1984). Especially concerned with race oppression in the United States, Williams (1984) outlined the tension between

neoclassical economic theory and the labour market outcomes of blacks in the American labour market:

> One of the more obvious implications of the human capital explanation is that blacks and whites with similar characteristics should experience similar success in the labor market. Neither the evidence on earnings nor unemployment supports this hypothesis (p.35).

Indeed, there is mounting evidence suggesting Canadian employers discriminate against non-white immigrants (Dietz, Esses, Joshi & Bennett-AbuAyyash, 2009; Galabuzi, 2006; Oreopoulos, 2009; Pratt, 1999; Reitz & Banerjee, 2007; Stasiulis & Bakan, 2005).

The domestic home: A barrier to immigrant women's labour market success?

Although the notable underperformance of immigrant women in the labour market relative to men may also be due to employer bias (Galabuzi, 2006), gender roles and responsibilities in the domestic home may also interfere with the economic wellbeing of immigrant women following international migration. If migrating as part of a family unit, immigrant women have been shown to ensure their children's and husband's wellbeing before their own. With the wife's employment success placed second to that of the husband's, more of the family resources are devoted to the husband's employment success (Salaff & Greve, 2004). Facing obstacles such as lack of resources for childcare (Graham & Thurston, 2005; Spitzer, Neufeld, Harrison, Hughes & Stewart, 2003) or transportation difficulties, women have voiced an inability to upgrade skills or

credentials (Mojab, 1999; Salaff & Greve, 2004). The culmination of these factors may also explain the overrepresentation of immigrant women in various forms of precarious employment such as part-time (Cranford & Vosko, 2006) or casual work (Fuller & Vosko, 2008). Long-term exposure to low-skill work can lead to permanent deskilling (Pratt, 1999) and the eventual entrenchment of immigrant women in a cycle of low-paying, low-status jobs (Hiebert, 1999; Hiebert & Pendakur, 2003).

My dissertation contributes to this literature by investigating whether particular immigrant attributes or social processes appear especially salient to the occupational status recovery achievements for highly skilled immigrants in Canada. By using a unique dataset, the Longitudinal Survey of Immigrants to Canada, and following occupational status recovery instead of earnings trends, my dissertation offers new considerations into the quality versus discrimination debate. Although an initial fall in occupational status is expected following international migration (Chiswick, Lee & Miller, 2003; 2005), my dissertation explores whether emergent group differences in recovery trends are a result of human capital differences, or whether there is evidence that occupational status recovery is contingent upon other processes such as gendered responsibilities in the domestic home or the privileging of particular ethno-racial groups in the labour market.

Significance of the dissertation

My dissertation furthers our knowledge of economic inequalities within the immigrant community as it is the first comprehensive Canadian study of immigrant occupational status recovery using a nationally-representative, longitudinal dataset. Typically, the monitoring of immigrant performance in the labour market is performed by labour economists. As such, most studies report earnings as the primary indicator of immigrant economic welfare, a metric central to discussions of national productivity. More precisely, economists typically report how the earnings gap between immigrants and native-born Canadians changes when cohort comparisons are made. My dissertation differs from these studies in that it focuses on occupational status recovery instead of earnings. Influenced by Weber's theory of social stratification (Gerth & Mills, 1958), my dissertation acknowledges both the economic *and* social realities faced by contemporary Canadian immigrants. An occupational title not only serves as a powerful predictor of a person's class standing, it also captures the "underlying dimension" of social stratification (Blau & Duncan, 1967, p.7). An occupation simultaneously belies a person's economic and social position due to its reliable association with income (Haug, 1977) and capacity to connote prestige rankings by community members (Duncan, 1961).

Seeing that occupation acts as a convincing proxy for a person's overall station in society (Duncan, 1961; Haug, 1977), we are able to glean whether social inequalities exist by examining group occupational characteristics. By considering occupational attainment over time, the social mobility of a group, the

movement up or down the rank order of a stratified society (Porter, 1965), is obviated. An egalitarian class society permits groups to move between different strata as a function of personal achievements, such as investment in education (Porter, 1965). Conversely, unequal recompense for individual efforts or unequal access to the mechanisms supporting the upper echelons of a stratified society results in the establishment of or maintenance of social inequalities (Lenski, 1966). By focusing on the occupational status achievements of distinct immigrants groups during their first four years of settlement in Canada, my dissertation is able to speak to the manifestation and maintenance of group inequalities over time.

Tracking occupational status trends also allows for diagrammatic representations of U-shaped trends, something earnings studies are unable to do. Since earnings are geographically specific, a comparison between immigrants' post-migration earnings in Canada and pre-migration earnings achievements are not possible. This however is not a limitation with occupational status studies. The occupational status of pre-migration jobs may be compared to post-migration jobs to pictorially demonstrate the shape of the occupational status recovery trajectory. Thus, my dissertation is able to speak directly to U-shaped assimilation claims (Chiswick, 1978).

In addition to earnings profiles, the economic welfare of immigrants may also be determined using underemployment studies (Galarneau & Morissette, 2004; 2008). This metric differs from earnings comparisons in that it more directly addresses concerns of human capital waste (Reitz, 2003); whether the

intellectual elite from other countries are working jobs in Canada that reflect their specialized training. Typically, these studies group occupations according to skill level and skill type with Canadian studies relying upon the National Occupation Classification (NOC) matrix.[1-10] Nine different sectors or skill types are included in the NOC matrix as well as four different educational skill levels: Skill level A (occupations that usually require university-education); Skill level B (occupations that usually require college education or apprentice training); Skill level C (occupations that usually require a high school diploma or occupation-specific training); Skill level D (occupations that usually require on-the-job training). Underemployment studies typically define the underemployed as those who hold a university credential yet work a job requiring at most a high school education (Galarneau & Morissette, 2004; 2008).

Disconcertingly, even though management jobs are diverse in terms of educational requirements, the NOC classification system groups these jobs into a fifth skill level. Although management jobs are still divided according to the nine sectors, the educational heterogeneity present within this category is lost. Consequently, managers are usually dropped from underemployment studies. My dissertation addresses this methodological weakness. Instead of relying upon a classification convention that groups all managers together and all other workers across four broad-level educational categories, my dissertation assigns an occupational status score that is estimated using average education and earnings profiles from the general population (Boyd, 2008). As such, the skill-level

[1-10] The 2006 NOC matrix is available from the Human Resource and Skills Development Canada (HRSDC) website: http://www5.hrsdc.gc.ca/NOC/English/NOC/2006/pdf/Matrix.pdf

heterogeneity present in management occupations is accounted for. For example, instead of collapsing low-skill managers and high-skill mangers into the same skill-level (the only possibility with underemployment studies that rely on the NOC matrix), my dissertation assigns these managers occupational status scores reflective of national educational and economic recompense averages. Specifically, "senior government managers and officials" (NOCS: A012) and "restaurant and food service manager", two occupations that are allotted the same skill-level in the NOC matrix, are assigned status scores of 93 points (out of a possible 100 points) and 43 points respectively.

Much of the immigrant labour market performance literature relies upon cohort comparisons using census data. Every five years Canadian households are randomly selected to complete the long form (which includes a question on immigrant status) and as such immigrant cohorts are typically defined as those who migrated to Canada within a certain census period (i.e., those who entered Canada after the 2001 but before the 2006 census collection date). Time effects are estimated by aging entry cohorts 5 years for each successive census cycle. Labour economists are able to approximate the impact of continual time in Canada on the immigrant/native-born earnings gap and how this changes with each passing entry cohort (Frenette & Morissette, 2005; Warman & Worswick, 2004; Waslander, 2003).

Although this methodology allows for general claims to be made about immigrant economic performance over time, it is subject to multiple complications due to the cross-sectional nature of the census (Borjas, 1994). Even

with Borjas' recommendation of using a quasi-panel design, a strategy that helps separate duration effects from year of entry effects, studies relying upon cross-sectional data cannot account for membership changes over time. For example, comparisons between repeated cross-sections of a population cannot account for permanent out-migration (Lubotsky, 2007) or immigrants who drop out of the labour market. In these cases, the benefit of increased time in Canada on overall group performance is exaggerated as only the "success stories" are accounted for. My dissertation is not susceptible to these cohort changes as it relies on the LSIC, a longitudinal survey. As a methodology, longitudinal studies are preferred to cross-sectional as the former tracks the same individuals over time. Ultimately, the use of longitudinal studies when studying the causal effect of time on immigrant economic performance allow for more conclusive statements as concerns about changing group membership are assuaged.[1-11]

Finally, my dissertation is unique in its approach to untangling whether labour market inequalities are due to ethno-racial differences or credential source country differences. By transforming the dataset into a person-month dataset I am afforded a greater sample size with which intricate intersections may be inspected. For example, Chapter 4 calculates predicted probabilities for 16 different groups based on ethno-racial background, credential source and gender. Further still, Chapter 3 compares occupational status recovery odds between foreign-trained

[1-11] Despite this advantage, longitudinal designs are also prone to limitations; most notably, they are vulnerable to period effects (Twisk, 2003). Since LSIC respondents vary in terms of their time since entry to Canada (to be eligible for the study, entry to Canada must have taken place between October 1, 2001 and October 1, 2002), it is possible that immigrants who entered earlier in the recruitment phase experienced a more or less forgiving labour market compared to those who entered later. As such, it is possible that study results are biased due to period effects.

engineers and IT professionals, a comparison that allows me to inspect whether inequalities are especially prevalent within particular job sectors.

Dataset: The Longitudinal Survey of Immigrants to Canada

Research questions posed within each empirical chapter are answered using the Longitudinal Survey of Immigrants to Canada (LSIC) dataset. A panel study jointly designed by Statistics Canada and Citizenship and Immigration Canada, the LSIC captures information on the immigrant settlement experience for the first four years following migration to Canada (Justus & MacDonald, 2003). Immigrants who entered Canada between October 1, 2000 and September 30, 2001, landed from abroad, and were at least 15 years of age at time of landing were randomly selected and interviewed six months, two years and four years after arrival (Justus & MacDonald, 2003). Responses from approximately 12,000 immigrants were collected during the first wave of data collection. By the final interview approximately 7,700 respondents remained, representing a 35.8% attrition rate. Despite sample attrition, the final sample is felt to be representative of the immigrant cohort who entered Canada between October 1, 2000 and September, 30 2001 (Houle & Schellenberg, 2010).[1-12]

To better answer the study questions, a series of sample restrictions was imposed on the LSIC. First, analysis was limited to immigrants who either entered Canada as a principal applicant to one of Canada's economic programs or held a bachelor's degree (with the exception of those who had any Canadian educational

[1-12] Concerns about representativeness of the sample due to attrition are discussed in detail in the concluding chapter.

content[1-13] or entered Canada as a refugee or provincial nominee). Given the nature of the project, analysis was further restricted to those that: reported holding a job prior to migration; held a job for at least one month in Canada; and were between the ages of 18 and 65 years for the entire term of the study. These upper and lower bounds on age concentrates the analysis on those who are most likely to be full participants in the labour market. Although the economic performance of young adults is commonly limited due to post-secondary pursuits, the lower bound of 18 years is not felt to be problematic given that the study already restricts analysis to an older, more accomplished group: those who were university-educated prior to migration or principal applicants to an economic program (i.e., bound for the labour market). Due to the number of other restrictions in this study the upper bound on age was set to 65 years to maximize as many cases as possible. This upper bound has recently been used by: Frenette and Morissette (2005); Hou and Picot (2003); and, Picot and Sweetman (2005).[1-14]

Following these sample restrictions, the LSIC data was further manipulated by transforming the dataset from a person-wave dataset (3 data points per respondent) to a person-month dataset (48 data points per respondent;

[1-13] According to Li (2001), when immigrants with Canadian degrees are compared to those with foreign degrees, the former appear to be received more favourably by Canadian employers: they outperform those who hold foreign degrees in the Canadian labour market. This restriction addresses the potentially confounding effects of including immigrants who received some or all of their education in Canada.

[1-14] Summary statistics from the Longitudinal Survey of Immigrants to Canada show that the number of skilled worker principal applicants, spouses or dependents who were 65 years of age or older when they entered Canada is negligible; there are so few cases that these statistics are considered by Statistics Canada to be "too unreliable to be reported" (Statistics Canada, 2005). Eighty-nine percent of the skilled worker principal applicants who participated in the Longitudinal Survey of Immigrants to Canada study were between the ages of 25 and 44 years when they entered Canada and another 10% were between the ages of 45 and 64 years.

one for each study month). This dataset transformation is possible as each the exact start and stop dates for each job worked in Canada were reported by study participants. Inflating the data was conducted so that the sample size would be large enough to accommodate investigation of very specific groups (i.e., intersections between multiple subject positions). Following this, the data were further modified by limiting the number of data rows per person.[1-15] Those achieving occupational status recovery contributed data rows until the point that recovery was achieved (i.e., event completion). A person who experienced occupational status recovery within the first month in Canada was restricted to a single data record while those who did not experience recovery by the end of the fourth year contributed 48 records. In the end, my dissertation captures the experiences of approximately 3,030 highly skilled immigrants whom contribute to a final sample size of 103,782 person-months.

Measure: Occupational status recovery

All three empirical chapters employ the same operational definition of occupational status. While the LSIC does not provide a measure of occupational status, this score is easily constructed using information provided by respondents about each job worked in Canada. The LSIC codes occupations according to both Standard Occupational Classification 1991 (SOC) and North American Industry Classification System (NAICS) conventions. Using a concordance table provided

[1-15] A thorough discussion of survival analysis including the managing of records due to event completion is found in the section describing the analytical technique.

by Statistics Canada,[1-16] the occupational title of the main job[1-17] worked in a given month is easily converted from SOC codes into National Occupational Classification for Statistics 2001 (NOCS) codes.[1-18] This conversion makes it possible to assign each occupational title an occupational status score using the Boyd-NP socioeconomic scale which relies upon NOCS codes (Boyd, 2008).

The Boyd-NP scale belongs to a family of socioeconomic scales that originates with the contributions of Charles B. Nam and Mary Powers (Boyd, 2008; Nam & Boyd, 2004). True to the Weberian concept of "class", the original socioeconomic index produced by Nam and colleagues (US Bureau of the Census, 1963) determined "the level of living" an occupation afforded using median income and education profiles (Nam & Boyd, 2004). In contrast to the Blishen (1958) method, which calculates status scores based on average occupation-specific earnings and education standard scores, the Nam and Powers method weights the median income and education values according to the number of people that work a given job (Boyd, 2008). Thus, a Nam-Powers occupational status score reflects the percentage of the working population with lower median earnings and education profiles than those of a person working a particular occupation. This method is superior to the Blishen (1958) method in that it belies

[1-16] The concordance table between SOC 1991 and NOCS is available at http://www.statcan.gc.ca/subjects-sujets/standard-norme/concordances/soc-ctp91-nocs-cnps01-eng.htm

[1-17] If the respondent worked more than one job in a month, the main job was determined to be the one with the most number of hours worked in a week. The job with the highest Boyd-NP status score was selected as the main job if the respondent held more than one job in a month and worked the same number of hours per week at each job.

[1-18] The NOCS 2001 is a classification system developed by Statistics Canada while the National Occupational Classification (NOC) system is a classification system used by Human Resources and Skills Development Canada (HRSDC). The two systems differ in terms of how occupations are aggregated.

the hierarchical nature of society; each occupation is assigned a score in relation to all other occupations (Boyd, 2008). As such, the Boyd-NP status scores range from a low of 0 to a high of 100 with hunters and trappers receiving the lowest score and physicians and surgeons the highest. The Boyd-NP scale (Boyd, 2008) and the 2000 Nam-Powers-Boyd scale (Nam & Boyd, 2004) represent the most up-to-date Canadian and American socioeconomic scales that follow in the Nam and Powers tradition.

This study tracks whether group inequalities exist with respect to *recovery* from downward economic mobility following migration to Canada. To do this, each respondent is coded as either recovering from downward occupational status mobility or not at each monthly time point. Those working jobs in Canada with lower occupational status scores than the job worked pre-migration are coded with a "0" (has not achieved occupational status recovery) while those working jobs in Canada with occupational status scores that are higher or equal to the occupational status score of the pre-migration job are coded with a "1" (occupational status recovery). The coding structure of the outcome variable is presented in Table 1-1.

Analytical technique: Discrete-time survival analysis

Given the binary nature of the dependent variable[1-19] and the longitudinal design of the dataset, all three empirical chapters employ discrete- time survival analysis (Allison, 1982). Although continuous time survival analysis is more

[1-19] Each event is mutually exclusive and collectively exhaustive (Wright, 2000).

Table 1-1: List of study variables by chapter

Variable	Level of Measurement	Variable description	Chapter 2	Chapter 3	Chapter 4
Dependent variable					
Occupational status recovery	Dichotomous	0 = Has not achieved occupational status recovery 1 = Has achieved occupational status recovery	X	X	X
Time since migration					
Months	Scale	Number of months since entering Canada	X	X	X
Months^2	Scale	Months^2	X	X	X
Human capital variables					
Age					
18-29 years (Reference category)	Dichotomous	0 = Otherwise 1 = 18 to <30 years	X	X	X
30-39 years	Dichotomous	0 = Otherwise 1 = 30 to <40 years	X	X	X
40-49 years	Dichotomous	0 = Otherwise 1 = 40 to <50 years	X	X	X
50-65 years	Dichotomous	0 = Otherwise 1 = 50-65 years.	X	X	X
Language Fluency	Scale	Continuous (0.00-1.00)	X	X	X
Language Fluency					
High level of fluency (Reference category)	Dichotomous	0 = Otherwise 1 = $\geq$ 0.84		X	
Low level of fluency	Dichotomous	0 = Otherwise 1 = 0.00 - <0.675		X	
Mid-level of fluency	Dichotomous	0 = Otherwise 1 = $\geq$ 0.675 - <0.84		X	
Level of Education					
Bachelor's degree (Reference category)	Dichotomous	0 = Otherwise 1 = Holds a foreign bachelor's degree	X	X	X
High school or less	Dichotomous	0 = Otherwise 1 = Holds at most a foreign high school diploma	X	X	X

Table 1-1: *Continued*

Variable	Level of Measurement	Variable description	Chapter 2	Chapter 3	Chapter 4
College or Trades	Dichotomous	0 = Otherwise 1 = Holds a foreign college diploma or trades Certificate	X	X	X
Master's degree	Dichotomous	0 = Otherwise 1 = Holds a foreign master's degree	X	X	X
Doctorate	Dichotomous	0 = Otherwise 1 = Holds a foreign doctorate	X	X	X
Immigrant characteristics					
Female	Dichotomous	0 = Male 1 = Female	X	X	X
Visible minority	Dichotomous	0 = White 1 = Non-White	X		
Western credential	Dichotomous	0 = Otherwise 1 = Credential from the United States, British Isles, Western/Northern Europe, Australia, or New Zealand	X		
Arranged employment	Dichotomous	0 = Otherwise 1 = Arranged employment prior to migrating	X	X	X
Principal applicant	Dichotomous	0 = Otherwise 1 = Principal applicant to one of Canada's economic immigration programs	X	X	X
Settlement CMA					
Toronto (Reference category)	Dichotomous	0 = Otherwise 1 = Lives in Toronto	X	X	X
Montréal	Dichotomous	0 = Otherwise 1 = Lives in Montréal	X	X	X
Vancouver	Dichotomous	0 = Otherwise 1 = Lives in Vancouver	X	X	X

Table 1-1: *Continued*

Variable	Level of Measurement	Variable description	Chapter 2	Chapter 3	Chapter 4
Other CMA	Dichotomous	0 = Otherwise 1 = Lives in a CMA other than Toronto, Montréal or Vancouver	X	X	X
Ethno-racial groups					
White with western credentials (Reference category)	Dichotomous	0 = Otherwise 1 = Self-Identifies as white with a western credential		X	X
Chinese	Dichotomous	0 = Otherwise 1 = Self-Identifies as ethnically Chinese and highest credential is from the People's Republic of China		X	X
South Asian	Dichotomous	0 = Otherwise 1 = Self-Identifies as South Asian and highest credential is from India, Pakistan, Bangladesh, Sri Lanka or other South Asian country		X	X
Filipino	Dichotomous	0 = Otherwise 1 = Self-Identifies as Filipino and highest credential is from the Philippines		X	X
Eastern European	Dichotomous	0 = Otherwise 1 = Self-Identifies as white, Eastern European and highest credential is from Romania, Russia, Ukraine, or other Eastern European country		X	X
White with non-western credentials	Dichotomous	0 = Otherwise 1 = Self-Identifies as white and highest credential is from a non-western country. Excludes those captured in the Eastern European category		X	X
Non-white with western credentials	Dichotomous	0 = Otherwise 1 = Self-Identifies as non-white with a western credential		X	X

Table 1-1: *Continued*

Variable	Level of Measurement	Variable description	Chapter 2	Chapter 3	Chapter 4
Non-white with non-western credentials	Dichotomous	0 = Otherwise 1 = Self-identifies as non-white with a credential from a non-western country (excludes those captured in the Chinese, South Asian or Filipino categories)		X	X
Pre-migration occupation	Categorical				
IT professional (Reference category)	Dichotomous	0 = Otherwise 1 = IT professional (includes IT managers)		X	X
Engineer	Dichotomous	0 = Otherwise 1 = Engineer (includes engineering managers)		X	X
Sciences (Other)	Dichotomous	0 = Otherwise 1 = Sciences (excludes engineers and IT professionals)		X	X
Finance (Skill level A)	Dichotomous	0 = Otherwise 1 = Finance job requiring a university education		X	X
Finance (Other)	Dichotomous	0 = Otherwise 1 = Finance job that does not require a university education		X	X
Health (Skill level A)	Dichotomous	0 = Otherwise 1 = Health job requiring a university education		X	X
Health (Skill level B or C)	Dichotomous	0 = Otherwise 1 = Health job that does not require a university education		X	X
Teacher (Primary/Secondary)	Dichotomous	0 = Otherwise 1 = Elementary or secondary school teacher		X	X
Professor	Dichotomous	0 = Otherwise 1 = College or university professor		X	X
Social Sciences (Other)	Dichotomous	0 = Otherwise 1 = Social sciences (excludes teachers and professors)		X	X
Arts	Dichotomous	0 = Otherwise 1 = Arts		X	X

Table 1-1: *Continued*

Variable	Level of Measurement	Variable description	Chapter 2	Chapter 3	Chapter 4
Sales or Service	Dichotomous	0 = Otherwise 1 = Sales or service		X	X
Trades	Dichotomous	0 = Otherwise 1 = Trades		X	X
Industry	Dichotomous	0 = Otherwise 1 = Industry		X	X
Manufacturing	Dichotomous	0 = Otherwise 1 = Manufacturing		X	X
Household factors					
Married/Common-law	Dichotomous	0 = Otherwise 1 = Married or common-law			X
Provider of childcare	Dichotomous	0 = Otherwise 1 = Primary caretaker of children within the domestic home			X
Married/Common-law (x) Female	Dichotomous	0 = Otherwise 1 = Woman who is married or lives with a common-law partner			X
Provider of childcare (x) Female	Dichotomous	0 = Otherwise 1 = Woman who self-identifies as the primary caretaker of children within the domestic home			X

widely used in the social sciences (Singer & Willett, 1993), discrete-time survival analysis is a more appropriate technique when time is crudely measured. When time units such as years or months are used it is very likely that more than one person will experience the event of interest within a particular unit of time (Singer & Willett, 1993). These "ties" are more adequately handled by discrete-time survival analysis as they create computational problems for continuous-time survival analysis (Allison, 1982).

Survival analysis has two principle advantages over standard regression techniques. First, it is able to handle time-varying variables (Allison, 1982). Although regression techniques can incorporate a series of dummy variables, each corresponding to the value of a time-varying variable during each time interval, this option results in a very cumbersome model and encounters issues with reverse causation (Allison, 2004); it is impossible to determine whether the event of interest took place due to a value change in the time-varying variable or vice versa.

The second advantage of survival analysis over standard regression techniques is its ability to address right censoring: when an event occurs after an observation period ends (Allison, 1995). Instead of depending on techniques that contain a great deal of error such as deleting censored cases from the data record; imputing unknown event times; or constructing event completion dummy variables at an arbitrary yet observed time point, survival analysis calculates hazard functions (Singer & Willett, 1993). A hazard function reflects the distribution or pattern of hazard probabilities over time where hazard probabilities

represent the conditional probability that an individual will experience the event of interest within a particular time period provided the individual has not yet experienced the event of interest (Allison, 1982; Singer & Willett, 1993). As time elapses, the population at risk, known as the risk set, grows smaller as more people experience the event. As long as the censoring of individuals is independent of the event itself, hazard probabilities for right censored cases may be estimated using the hazard function (Singer & Willett, 1993).[1-20]

Since hazard probabilities range in value from 0-1, a logit link function may be introduced so that the outcome becomes unbounded and suitable for regression analyses (Allison, 1984). Model (1) outlines the basic hazard model used by the three empirical chapters in its log-odds format. This equation calculates the probability of event occurrence within a particular time period where a single time period is represented by a single dummy variable.

$$\text{Model (1):} \qquad \text{logit}_e(h) = (\alpha_1 t_1 + \alpha_2 t_2 + \alpha_3 t_3 \ldots. + \alpha_{48} t_{48})$$

where,

t = a sequence of dummy variables indexing individual time periods (i.e., 1-48 months)
α = multiple intercepts, one per time period (i.e., represents the baseline logit-hazard function)

Although time-to-event completion calculations are integral to any longitudinal study, the role of covariates is also central. It is important to

[1-20] The sample survival probability (the proportion of an initial population that survives through each of several successive time periods) in any year is one minus the hazard probability for that year multiplied by the sample survival probability from the previous year (see pages 157-162 in Singer and Willett (1993) for a thorough discussion of right-censoring and estimation of survival and hazard probabilities).

determine whether the hazard profile differs between subpopulations (for example, between men and women). Model (2) outlines the full model which calculates the log-odds of event occurrence as a function of time period and covariates (Xie, McHugo, Drake & Sengupta, 2003).

$$\text{Model (2):} \qquad \text{logit}_e(h) = \sum \alpha T + \sum bX$$

where,

- T = a sequence of dummy variables indexing individual time periods (i.e., 1-48 months)
- α = multiple intercepts, one per time period (i.e., represents the baseline logit-hazard function).
- b = slope parameters. The sum of these parameters capture the effect of the predictors on the baseline hazard model.
- X = covariates

Since each dissertation chapter considers different subpopulation comparisons, each chapter will specify a different Model (2). For illustrative purposes a simple gender model is demonstrated here:

$$\text{Example:} \qquad \text{logit}_e(h) = (\alpha_1 t_1 + \alpha_2 t_2 + \ldots + \alpha_{48} t_{48}) + b_1 \text{Female}$$

Female is a categorical variable with males coded as "0" (the reference category) and females coded as "1". By setting *Female* to "0" the baseline logit-hazard function is calculated, which in this case is the hazard function for males. When *Female* is set to "1" b_1 is a parameter estimate of how much the reference (i.e., male) hazard function changes when we consider the female subpopulation.

The results in Models (1) and (2) are easily converted into odds ratios by exponentiating the Model (2) equation. By doing so, odds for one group are

expressed in relation to the reference category. In the case of the gender model, the exponentiated model allows us to discuss whether the odds of occupational status recovery for females are higher or lower than the odds of occupational status recovery for men.

Each empirical chapter will employ an equation similar to that shown in Model (2). Statistical model similarities between empirical chapters results from a steady focus on the same outcome variable throughout the dissertation (i.e., whether or not an immigrant recovers from occupational status declines due to migration) and tracking immigrant outcomes across the same 48 time-points with each time-point representing another month in Canada since time of entry. However, since each empirical chapter focuses on a different series of research questions, statistical models will vary across chapters as the effects of different covariate combinations are considered. We now turn to an overview of each empirical chapter, the research questions asked by each, and a summary of key findings.

Empirical chapters

Chapter 2: "I've fallen and I can't get back up": Occupational status recovery for highly skilled immigrants in Canada

The fundamental tenet of assimilation theory is that time in a host labour market is beneficial to the economic performance of immigrants (Chiswick, 1978). Assimilation theory hypothesizes that immigrants will follow a U-shaped recovery trajectory following migration, with earnings steadily improving following an initial decline. Originally formulated using earnings data, the U-

shaped pattern of economic recovery has recently been evidenced by studies inspecting immigrant occupational status recovery (Akresh, 2008; Chiswick, Lee & Miller, 2003; 2005; Rooth & Ekberg, 2006).

Interestingly, the economic recovery trends for recent immigrants in Canada do not appear to support U-shaped assimilation assumptions. In addition to a slowing convergence rate between the immigrant and native-born Canadian earnings (Frenette & Morissette, 2005), select immigrant groups describe an alternate labour market reality given time in Canada: economic entrenchment. It appears that when immigrants work low status, low pay jobs, future labour market opportunities are stunted. When viewed as a function of time, occupational status achievements plateau quickly – a stark contrast to assimilation assumptions. This alternate reality is one that appears especially salient to visible minority immigrants, in particular visible minority women (Galabuzi, 2006; Man, 2004).

By testing assimilation theory assumptions the first empirical chapter acts as a foundation for the remaining chapters. To determine whether immigrants steadily secure higher status jobs as time in Canada increases, this chapter modeled the effect of time on odds of occupational status recovery. In light of the established gender/race hierarchy (Li, 2000; Boyd, 1992), occupational status trajectories were plotted for white men, non-white men, white women and non-white women. Questions explored within this chapter include: does increased time in Canada have an equivalent effect on the chances of occupational status recovery for each immigrant group? Do immigrant group occupational status

scores cluster in a similar fashion post-migration when compared to pre-migration patterns?

Key findings

Results from this chapter do not support assimilation assumptions as time does not prove to have a beneficial effect on occupational status recovery. A critical period of 12 months is apparent after which groups make minimal improvements to average group scores. Since recovery trajectories plateau after modest gains, the results from this chapter instead support an economic entrenchment view of immigrant labour market integration.

This chapter also shows that group inequalities manifest immediately following migration to Canada when the highly skilled immigrant population is analyzed according to gender and visible minority status. Similar to other Canadian studies, a gender/race hierarchy emerges: white men appear to have an advantage over all other groups while non-white women emerge the most disadvantaged. Since this first empirical chapter already controls for human capital differences within the sample, initial findings motivate the remaining chapters which explore potential explanations for these emergent group differences.[1-21] Specifically, subsequent chapters consider how processes related to ethno-racial status; source country of credentials; occupational clustering of ethno-racial groups; occupational sex segregation and characteristics within the domestic home influence the occupational status recovery achievements of highly skilled immigrants in Canada.

[1-21] A complete list of study variables used in Chapter 2 is outlined in Table 1-1.

Chapter 3: Does the Canadian labour market privilege white immigrants?

Since labour market discrimination is difficult to prove empirically, this chapter explores alternate explanations for why non-white immigrants have lower odds of occupational status recovery compared to white immigrants; a finding noted in the previous chapter. Alternate explanations include concerns with inferior language skills (Boyd & Cao, 2009) – which have particularly damaging consequences for highly-educated immigrants (Ferrer, Green & Riddell, 2006) – and the devaluation of non-western credentials by Canadian employers due to quality concerns (Sweetman, 2004). These two alternate explanations centre on consequences arising from increased recruitment of immigrants from non-traditional sources countries. The occupational clustering of ethno-racial groups could also explain group differences since employment opportunities are subject to industry-specific labour demands (Picot & Hou, 2009). Further, immigrants with skills in regulated occupations may experience barriers to employment due to state and professional association requirements (Ogilvie, Leung, Gushuliak, McGuire & Burgess-Pinto, 2007).

To explore the validity of these alternate explanations, this chapter calculated the odds of occupational status recovery for eight different ethno-racial groups while controlling for a host of labour market characteristics.[1-22] A series of predicted probabilities were calculated to determine whether inequalities apparent at time of entry disappear with increased time in Canada. Finally, outcomes for

[1-22] A complete list of study variables used in Chapter 3 is outlined in Table 1-1.

two different occupation groups were compared: engineers and IT professionals.[1-23] Questions explored within this chapter include: are the occupational status recovery odds at time of entry and after four years similar for immigrants who belong to different ethno-racial groups? Are there ethno-racial group differences in occupational status recovery odds when the outcomes of engineers (i.e., those working in a regulated profession) and IT professionals (i.e., those working in an unregulated profession) are considered?

Key findings

Results from this chapter support claims that non-white immigrants face undue discrimination in the Canadian labour market (Reitz & Banerjee, 2007). Despite controlling for human capital factors and pre-migration occupation, Chinese, South Asian and Filipino immigrants report significantly lower odds of occupational status recovery when compared to Eastern European and other white immigrants with non-western credentials. A series of predicted probabilities reveal that the eight ethno-racial groups may be organized into three economic strata. The top-performing group, those with the highest probability of occupational status recovery by the end of the fourth year in Canada, is occupied by white immigrants with western credentials. The second group, those with the second highest probabilities of occupational status recovery, is constituted of non-

[1-23] Since the IT industry is unregulated, assessment of foreign credentials is carried out on an individual basis by IT employers – an exercise which is often informed by racial bias (Creese, 2009). Contrastingly, the engineering profession is regulated and all immigrants, no matter ethno-racial background, must fulfill minimum professional requirements before credentials are recognized. Thus, detection of a non-white disadvantage will most likely occur within the IT industry, given the greater degree of employer control over the hiring process.

white immigrants with western credentials, Eastern European immigrants and white immigrants with non-western credentials. Finally, Chinese, South Asian, Filipinos and other non-white immigrants with non-western credentials report the poorest recovery probabilities. The difference between the highest performing ethno-racial group (i.e., 61.2% of white immigrants with western credentials are predicted to experience occupational status recovery by the end of the fourth year in Canada) and the lowest (i.e., 37.0% of Filipino immigrants are predicted to experience occupational status recovery by the end of the fourth year in Canada) is a substantial 24.2 percentage points.

An inspection of group differences within the regulated engineering profession and the unregulated IT sector reveals further support for claims that inequalities are more likely to manifest in unregulated industries due to the subjective nature of the hiring process. While no one group reports an advantage over the others in the tightly regulated engineering profession, white immigrants with either western or non-western credentials, including Eastern European immigrants, demonstrate a significant advantage over Chinese, South Asian and Filipino immigrants. Unlike their white counterparts, non-white immigrants with western IT credentials also report lower odds of occupational status recovery. This finding counters the work of Dietz et al. (2009) who find that western credentials provide a protective quality against labour market discrimination towards non-white immigrants.

Chapter 4: Pink collars and the baby blues: Gendering the occupational status recovery of highly skilled immigrants in Canada

In addition to the notable underperformance of non-white immigrants relative to white immigrants, the first empirical chapter also demonstrates that highly skilled immigrant women underperform when compared to their male peers. Descriptive accounts of life in Canada after migration reveal filial demands to be a significant burden on women's economic performance (Man, 2004; Spitzer et al., 2003). Commonly cited activities impinging women's competitiveness in the labour market include caring for children and securing "survival jobs" to support the labour market efforts of husbands. This chapter also includes controls for the pre-migration job as it is possible the gender gap noted at the end of Chapter 2 is a consequence of occupational sex segregation. The clustering of women in female-dominated professions, such as nursing or teaching, may account for the poor labour market performance of women as the credential recognition process in these occupations has proven challenging for newcomers (Ogilvie et al., 2007; Schmidt, Young & Mandzuk, 2010).

This chapter ends with a series of predicted probabilities which calculate the likelihood of occupational status recovery for men and women belonging to each ethno-racial group. Comparing likelihoods for co-ethnic men and women allows insight into whether the positioning of non-white immigrant women at the bottom of the gender/race hierarchy, as noted in the literature (Boyd, 1992; Li, 2000) and in Chapter 2, is due to the additive effects of being female and non-white or whether there is evidence of additional subordination for non-white women due to gendered racism (Galabuzi, 2006). A significant female

disadvantage, despite controlling for events known to have a gendered effect in the labour market, provides support for claims that non-white immigrant women face labour market barriers beyond what may be explained through the additive gender and race effects.

Key findings

This chapter shows that the residual gender gap is almost entirely a result of women's role within the domestic home as the primary caretaker of children. When variable sets were added in a hierarchical fashion, the residual gender gap from the first model decreased minimally when pre-migration occupation and human capital controls were added. However, the residual difference completely disappeared once household characteristics were included. An interaction effect between gender and caretaking responsibilities was tested and revealed a non-significant relationship. This result suggests that childcare responsibilities within the domestic home have a deleterious effect on the labour market success of the caretaker, regardless of their gender. However, since women are more likely than men to adopt the caretaking role, this filial demand has a gendered effect.

Upon establishing a gender model of occupational status recovery, a series of predicted probabilities was then conducted to determine whether non-white immigrant women endure labour market barriers in excess to those experienced by their co-ethnic male peers despite controlling for the aforementioned gender effects. Comparisons between co-ethnic men and women reveal there to be no significant differences. This finding suggests that the positioning of non-white

immigrant women at the bottom of the race/gender hierarchy is due to the additive effects of gender processes both in the labour market (human capital, occupational clustering) and in the domestic home (filial responsibilities) as well as "unexplained" events that also negatively impact their male counterparts.

Conclusion

The worsening economic position of recent immigrant cohorts is predominately based upon studies that focus on Canada's immigrant population as a whole. My dissertation is unique in that I do not model nor conceptualize Canada's immigrant population as homogeneous. Instead, I attend to subject positions within the highly skilled immigrant population to determine whether intersecting axes of inequality result in the particular economic vulnerability of some immigrants. Although *average* immigrant economic performance has decreased over recent years, my review of the literature lends me to suspect that some immigrants have not suffered as greatly as others when comparisons are made between men and women from different ethno-racial backgrounds. Ultimately, my dissertation considers the following concern: *Are the occupational status recovery achievements for highly skilled immigrants similar regardless of subject position, or do some fare better than others*?

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Chapter 2
"I've fallen and I can't get back up": Occupational status recovery for highly skilled immigrants in Canada

Introduction

Although international migrants typically experience downward mobility immediately following migration, assimilation theory posits that economic performance declines are temporary and immigrant economic wellbeing improves with time in a host country (Bloom & Gunderson, 1991; Chiswick, 1978). Employment prospects improve as newcomers learn about local labour market practices (Chiswick, 1978) and invest in human capital projects, such as upgrading skills, obtaining recognition for foreign credentials, and improving language fluency (Chiswick, Lee & Miller, 2005; Chiswick & Miller, 2001). This gradual reinstatement of economic positioning following an initial post-migration drop is often described as U-shaped (Chiswick, Lee & Miller, 2003; 2005), and has recently been demonstrated for immigrants in the United States (Akresh, 2008), Australia (Chiswick, Lee & Miller, 2003; 2005), and Sweden (Rooth & Ekberg, 2006).

Contrastingly, descriptive accounts of post-migration experiences for highly skilled immigrants in Canada indicate an alternate economic experience. Instead of improved prospects given time in Canada, many newcomers demonstrate economic entrenchment: the inability to recover from downward mobility and the continual engagement in low paying, low status jobs many years after arrival (Hiebert, 1999; Man, 2004). Unlike the U-shaped curve characteristic

of immigrant assimilation and economic recovery, economic entrenchment is demarcated by a trajectory that plateaus after minimal or no improvement following substantial post-migration declines, signifying the cementing of highly skilled immigrants in low-status jobs. Furthermore, when group constitution is inspected, the economic entrenchment literature upholds assertions that Canadian employers engage in gendered racism (Galabuzi, 2006), as non-white immigrant women appear especially vulnerable to long-term engagement in low status work (Man, 2004; Pratt, 1999).

In light of these divergent accounts of immigrant economic prospects, the focus of this chapter is to empirically determine whether highly skilled immigrants in Canada demonstrate U-shaped assimilation curves or recovery trajectories indicative of economic entrenchment. Using a nationally-representative dataset, the Longitudinal Survey of Immigrants to Canada, this study documents the occupational status trajectories for highly skilled immigrants[2-1] during their first four years of settlement. Since non-white immigrant women routinely demonstrate greater vulnerability in the Canadian labour market compared to other immigrant groups (Boyd, 1992; Boyd & Yiu, 2009; Li, 2000), this chapter considers the outcomes for white men, non-white men, white women and non-white women. To determine whether results are more consistent with U-shaped assimilation or economic entrenchment patterns, the following research questions are investigated: Do immigrant group occupational status scores cluster in a similar fashion post-migration when compared to pre-

[2-1] Highly skilled immigrants are defined as immigrants who entered Canada as the principal applicant to one of Canada's economic programs (skilled workers and professionals program or business program) and/or immigrants who held a foreign university credential at time of entry.

migration patterns? Does increased time in Canada have an equivalent effect on the chances of occupational status recovery for each immigrant group?

Employing a series of descriptive tests as well as survival analysis, chapter results show that the labour market experiences of highly skilled immigrants in Canada do not parallel the U-shaped assimilation experiences of highly skilled immigrants settling in other destination countries (Akresh, 2008; Chiswick, Lee & Miller, 2003; 2005; Rooth & Ekberg, 2006). A hierarchy emerges whereby white men report the smallest decline in occupational status following migration as well as the greatest rate of improvement with increased time in Canada. Non-white women, despite matching all other immigrant groups in terms of human capital and other socio-demographic characteristics, report the greatest labour market difficulties. Policy recommendations and insights for future research are discussed.

Literature Review

Immigrant human capital and implications for economic assimilation

Human capital theory (Becker, 1962) postulates that employers recognize the economic benefit or cost-effectiveness of hiring workers who already possess skills, whether from formal education, or time and resource investments made by a previous employer in the form of on-the-job training. Hiring an employee with an established skill set reduces training time, ultimately netting an economic gain for employers (Becker, 1962). Simply put, human capital investment entails "activities that influence future real income through the embedding of resources

in people" (Becker, 1962, p.9). Personal investment in education, health, on-the-job training, searching for information about job opportunities, and migration all constitute key factors integral to a theory of human capital investment (Becker, 1962; Miller, 1960; Mincer, 1962; Schultz, 1961; 1962).

When estimating the economic productivity of immigrants, the traditional list of human capital factors is typically expanded to include time-sensitive processes (Chiswick, 1978). As new entrants to the labour market (Green & Worswick, 2004), the economic reestablishment of immigrants relies upon time-dependent processes such as: familiarization with a host country's official language(s), upgrading job-specific skills, as well as learning employment practices specific to a host country (Chiswick, 1978). Since language proficiency facilitates the application of other human capital qualities such as work experience or advanced education (Chiswick & Miller, 2001; 2003), consideration of this time-dependent act is key. Further still, since age is inversely related to the ability to learn a new language (Schaafsma & Sweetman, 2001), immigrant age at time of entry is also telling of economic improvement over time, especially for newcomers who are not fluent in English or French (Schaafsma & Sweetman, 2001).

Assimilation theory is associated with a U-shaped curve when pre/post-migration economic outcomes are charted (Chiswick, 1978). The left-side of the U-shape relates to a decrease in overall economic status upon arrival due to post-migration barriers such as the inability to perfectly transfer foreign credentials and work experience to a host country's labour market (Friedberg, 2000). The bottom

portion of the U-shaped curve indicates the passage of time during which immigrants make investments in human capital projects that aid their eventual occupational reinstatement (right-hand side of U-shaped curve). The U-shaped assimilation curve has been documented in numerous longitudinal studies, including recent investigations for American (Akresh, 2008), Australian (Chiswick, Lee & Miller, 2005) and Swedish (Rooth & Ekberg, 2006) immigrants. Also, since time in a host country is negatively correlated with the size of the immigrant/native-born economic gap, a U-shaped assimilation pattern is also supported by cross-sectional studies that measure the catch-up rate of immigrants to native-borns (Bloom, Grenier & Gunderson, 1995; Li, 2003; Warman & Worswick, 2004).

However, despite considerable support for a human capital theory of immigrant assimilation, there is growing concern that more recent generations of immigrants are taking much longer to integrate into the Canadian labour market (Baker & Benjamin, 1994; Frenette & Morissette, 2005). Specifically, initial gaps in earnings between immigrants and Canadian-born workers have widened so greatly in recent decades that immigrant earnings trajectories will have to grow at abnormally high rates in order to converge with Canadian-born levels (Frenette & Morissette, 2005). Specifically, the earnings of the 1995-1999 immigrant cohort would have to grow at a rate almost triple that of the fastest conversion rate evidenced in the past 25 years (Frenette & Morissette, 2005). This observation is echoed by Picot and Sweetman (2005) who report that although immigrant cohorts from the 1970s initially earned less than native-born Canadians, they

followed a favourable trajectory and effectively caught up to the earnings of their Canadian-born counterparts within twenty years, a finding that does not appear to hold true for more recent immigrant cohorts. Immigrants entering during the 1980s still remain approximately 15% shy of native-born workers' earnings some 16-20 years after entering Canada (Picot & Sweetman, 2005). These more recent economic analyses, although still in support of an overall U-shaped assimilation curve, suggest that the trough between newcomers and native-born Canadians is expanding.

Immigrant economic entrenchment

Increasingly, newcomers to Canada are reporting labour market conditions indicative of economic entrenchment. Unlike the U-shaped model of immigrant assimilation, prospects for these immigrants do not appear to improve appreciably as time in Canada progresses (Man, 2004; Pratt, 1999; Salaff & Greve, 2003). Analogous to U-shaped immigrant trajectories, an economically entrenched immigrant population also experiences depreciation in employment outcomes immediately following migration; an economic condition that may also be represented by the left-hand side of a U-shaped curve. However, unlike the recovery assumptions of assimilation theory, instead of experiencing labour market betterment as a function of time, an entrenched population will plateau after minimal gains, a consequence of deskilling following downward mobility.

After experiencing a range of barriers to securing work commensurate to that held prior to migration, a recent immigrant, often due to economic pressures,

will work a "survival job" (Graham & Thurston, 2005; McCoy & Masuch, 2007; Maitra & Sangha, 2005; Preston & Man, 1999). Survival jobs are often low-status, undesirable jobs readily available due to a higher demand for workers than a host country can support with its native-born population. The acceptance of a survival job usually results in reduced earnings capacity and decreased occupational status compared to work held pre-migration, therefore signifying a state of downward mobility. The downward trajectory on the left-hand side of the U-shaped assimilation model adequately represents the acquisition of a survival job.

As increased time is spent working a low status survival job, previously held skill-sets begin to grow stale due to non-utilization. It is this loss of specialized skills through disuse that is referred to as "deskilling". Pratt's (1999) interviews with professional Filipino women working as live-in caregivers illustrates how deskilling emerges. Fulfillment of the live-in caregiver program requirements typically takes two years. Unfortunately, the non-practice of advanced skills while working as a live-in caregiver proves burdensome for eventually securing higher skilled work. In addition to employer concerns about dated credentials and work experience, the fading of advanced knowledge and skill-sets has psychological impacts, which includes doubts about previous capabilities, since these skills seem to have been replaced by lower job status skills. One respondent in Pratt's (1999) study of live-in caregivers articulated the apparent replacement of her nursing knowledge with homemaking skills: "What you know now is only how to clean and polish the bathroom" (p.223).

Working a survival job on a long-term basis often leads to entrenchment, or ghettoization: a deskilled worker's inability to recover from a downward economic trajectory (Pratt, 1999). For those working low-skilled jobs for extended periods of time, remedying the situation proves overwhelmingly difficult. In order to meet immediate financial needs, entrenched workers spend long hours working low-paying jobs, exhausting the time and energy necessary for upgrading or retraining (Man, 2004). For some, entrenchment is further solidified because of increased filial responsibilities after migration (Man, 2004; Preston & Man, 1999; Salaff & Greve, 2004), transportation constraints (Mojab, 1999), as well as difficulty navigating professional association certification systems (Grant & Nadin, 2007). Additionally, prolonged periods of substantial underemployment have been linked to numerous negative health effects including manifestation of anxiety and depression (Asanin Dean & Wilson, 2009; Grant & Nadin, 2007), which further exacerbate the situation.

Although all immigrants are expected to demonstrate downward mobility immediately following migration, non-white women appear particularly sensitive to economic entrenchment. For example, the disadvantaged position of professional Chinese women (Man, 2004; Preston & Man, 1999; Salaff & Greve, 2003; 2004), Filipino live-in caregivers (Pratt, 1997; 1999) and non-white nurses (Stasiulis & Bakan, 2005) have all been documented. One possible explanation for the increased vulnerability of non-white immigrant women compared to other newcomer groups is that these women are subject to gendered racialization in the Canadian labour market (Galabuzi, 2006).

Racialized immigrant women and the Canadian labour market

Racialization may be defined as "the social process whereby groups are singled out for unequal treatments on the basis of real or imagined phenotypical characteristics" (Li, 1999, p.8). One phenotypic characteristic routinely used to categorize people into racial groups is skin colour (Galabuzi, 2006; Reitz & Sklar, 1997); however, other markers have also been identified such as English spoken with an accent (Creese & Kambere, 2003). Although non-white men also experience compromised economic welfare due to racialization, non-white women are further subjugated due to the added complexity of their gender. Gendered racism or racialization, involves the stereotyping of visible minority women in accordance with gender roles as well as generalizations about their race or perceived culture (Galabuzi, 2006; Pratt, 1997). One outcome of gendered racism, when considered within the context of the labour market, is the assignment of white and non-white men and women to different occupations. Thus, gendered racism creates another layer of bifurcation within the Canadian labour market, further dividing already sex-segregated occupations along racial lines; more often than not, relegating non-white women to the most undesirable jobs with the bleakest economic potential.

Stasiulis and Bakan (2005) reveal that the racialization of non-white immigrant women within the nursing profession results in the racial stratification of an already heavily gendered occupation. In this case, nurses from the West Indies and the Philippines report disparate treatment by management. Systematically, Filipino nurses find themselves assigned administrative duties

while West Indian nurses are relegated to training tasks and heavy workloads. Additionally, many Filipino nurses report being stereotyped as nurturing and self-sacrificing, character judgments based solely on their nationality. "*I am assigned the most difficult patients and the worst shift. They think I am more compassionate and patient, being a Filipino*." (Stasiulis & Bakan, 2005, p.131). This passage demonstrates how on-the-job opportunities for racialized nurses are altered, deemed suitable for particular nursing roles, a consequence of management stereotyping.

The gendered racialization of newcomers is also evident when the intersection of gender and race is considered empirically. When immigrant groups are ordered, a hierarchy of economic wellbeing emerges. White immigrant men routinely demonstrate the most favourable returns to foreign human capital in the Canadian labour market while non-white immigrant women demonstrate the least favourable returns (Boyd & Yiu, 2009; Pendakur & Pendakur, 1998). Specifically, data from the 1996 census reveal that foreign-born white women and foreign-born non-white men underperform when compared to foreign-born white men, while foreign-born non-white women report the largest earnings penalty compared to the other groups (Li, 2000).

The present study

Using the Longitudinal Survey of Immigrants to Canada (LSIC), the present study will inspect the occupational status recovery of highly skilled immigrants who migrated to Canada between October 1, 2000 and September 30,

2001. Given that highly skilled immigrants suffer the largest drops in status due to their higher pre-migration status positions (Chiswick, Lee & Miller, 2003), and given that Canada has an increased interest in recruiting economic immigrants (Green & Green, 1999), the majority of whom are skilled workers, the principal focus of this study will be to track occupational status changes for principal applicants to Canada's economic migration programs. Additionally, since highly skilled women are rarely listed as principal applicants when engaged in family migration projects, the labour market experiences of immigrants holding at least one university degree at time of entry to Canada, regardless of principal applicant status, will also be considered. This latter analysis addresses the gender implications of restricting focus solely to principal applicants (Boyd & Grieco, 2003). And finally, occupational status mobility will be inspected with special attention paid to the markers of gender and visible minority status, as non-white immigrant women demonstrate particularly poor returns to foreign human capital in Canada, especially when compared to white men.

To determine whether recent newcomers to Canada are recovering according to U-shaped patterns or are experiencing recovery plateaus in keeping with the economic entrenchment literature, two research questions will be inspected:

Study Question #1: Do immigrant group occupational status scores cluster in a similar fashion post-migration when compared to pre-migration patterns?

The first study question will be addressed by calculating the difference between the occupational status score of the first job secured in Canada and the

score of the job held immediately prior to migration for each immigrant group. Vulnerable groups will be identified by comparing the spread in average pre-migration occupational status scores with the post-migration point spread as well as inspecting the rank ordering of each group before and after migration. It is expected that more vulnerable groups will experience greater status score declines following migration as well as a drop in rank order.

Multivariate analysis will also be used to answer the first question. In accordance with assimilation theory, barring differences in human capital backgrounds, gender and visible minority status should not impact labour market outcomes. Economic entrenchment assumptions on the other hand, acknowledge the connection between diminished economic wellbeing and positive identification as a woman or visible minority; despite possessing equivalent human capital profiles, it is expected that upon arrival in Canada, women and visible minorities, when compared to men and whites, will report significantly lower odds of securing a job that is as high in status as the job held prior to migration. To differentiate between assimilation and economic entrenchment assumptions, gender and visible minority main effects will be calculated while controlling for human capital and other socio-demographic factors.

Study Question #2: Does increased time in Canada have an equivalent effect on the chances of occupational status recovery for each immigrant group?

Assimilation theory argues that time in a host country is beneficial for immigrants and that a U-shaped recovery distribution will emerge when economic outcomes are plotted. This U-shape is produced by an increasing number of

immigrants achieving status recovery as a function of time-sensitive human capital investment. While assimilation theory predicts emergence of a U-shaped curve, recovery trajectories that taper off after minimal gains are indicative of economic entrenchment. Due to the vulnerability of immigrant women and visible minorities in the labour market, it is also expected that especially disadvantaged groups (i.e., non-white immigrant women), are more likely to show evidence of an economic entrenchment model whereas white men are more likely to show evidence of an assimilation model.

This study will ascertain the shape of occupational status trajectories by plotting each immigrant group's average pre-migration and monthly post-migration occupational status scores. In addition to plotted averages, the impact of time on the odds of occupational status recovery will be calculated with a multivariate model. Unlike assimilation theory, which views time as beneficial to economic outcomes, the economic entrenchment literature views time as detrimental to reinstatement of occupational status. Thus, a multivariate model in which monthly time increments are associated with higher than 1.00 odds of occupational status recovery will be interpreted as support for an assimilation model, while survival models will be interpreted as supportive of economic entrenchment conclusions should monthly time increments associate with lower than 1.00 odds of occupational status recovery. Finally, to facilitate interpretation of a three-way interaction between time, gender and visible minority status, predicted probabilities of occupational status recovery will be calculated for white men, non-white men, white women and non-white women while controlling for

human capital differences. Should each group report comparable predicted probabilities of occupational status recovery for each time interval, assimilation theory will be supported. However, support for economic entrenchment will be warranted if white men have higher and non-white women have lower predicted probabilities of status recovery over time when compared to other groups.

Methodology

Data Source

The Longitudinal Survey of Immigrants to Canada (LSIC) dataset captures the first four years of immigrant experiences in Canada (Justus & MacDonald, 2003). Eligibility criteria for the LSIC restricts study to those who: immigrated to Canada between October 1, 2000 and September 30, 2001; were 15 years of age or older at the time of landing or, if landed from abroad, must have applied through Canadian Mission Abroad. Approximately 12,000 immigrants of the over 20,000 Canadian immigrants initially contacted to participate in the study were selected. Study participants were interviewed on three separate occasions: six months (wave 1), two years (wave 2) and four years (wave 3) after their date of arrival in Canada. Although approximately 12,000 respondents were interviewed during the first interview, participant attrition across the three waves of data collection resulted in a final sample size of approximately 7,700 participants, representing a total attrition rate of 37% (Schellenberg & Maheux, 2007). Extrapolating study results to the Canadian immigrant population is reasonable as

the LSIC is felt to adequately represent immigrants who entered Canada during the study timeframe (Schellenberg & Maheux, 2007).

A number of sample restrictions and modifications to the LSIC dataset were performed. First, the dataset was transformed from a person-wave to a person-month dataset. Since respondents were asked for exact start and stop dates for all jobs worked, identification of precise occupational status scores for each month since time of entry to Canada was feasible. If a respondent worked more than one job in a particular month, the job with the highest number of hours worked in a week was selected as the reference job for that month. If after this selection, a particular month still had record of two active jobs, the job with the highest status score (i.e., higher status job) was selected as the primary occupation.

After transforming the dataset into a person-month format, a series of sample restrictions was imposed. Specifically, analysis was limited to those who did not have any Canadian educational content;[2-2] those who were 18 years of age or older at time of entry to Canada and younger than 65 years by study end; and those who reported a pre-migration job as well as worked at least one month post-migration. Only those who entered Canada as a principal applicant to an economic program or held a university credential prior to migration were included. Even if they held a university credential, provincial nominees and refugees were dropped from the dataset due to the unique conditions of their

[2-2] This restriction is imposed on the dataset to avoid the potentially confounding effects of immigrants who received some or all of their education in Canada. The literature suggests that immigrants holding Canadian credentials are received more favourably by Canadian employers and outperform those holding foreign degrees (Ferrer & Riddell, 2004; Li, 2001).

migration experience (Krahn, Derwing, Mulder & Wilkinson, 2000). Upon making sample restrictions and transforming the original dataset into one with a person-month unit of analysis, the final sample size totaled 140,382 person-months.

Measures

Independent Variables

As previously mentioned, when modeling the economic welfare of immigrants, it is important to consider human capital and socio-demographic factors known to impact labour market outcomes. Thus, age, language proficiency, level of education at time of entry to Canada, western credential status,[2-3] arrangement of employment prior to migration, principal applicant status, and Census Metropolitan Area (CMA) of residence were included as control variables. A complete list of study variables, along with their coding structures, is outlined in Table 2-1.

Dependent Variable

Multiple operations were conducted to identify newcomers who experienced a post-migration decrease in occupational status (i.e., downward mobility) or no change/an increase in occupational status (i.e., stable or upward mobility). First, by employing a Statistics Canada concordance table,[2-4] pre-

[2-3] Multiple studies have demonstrated that immigrants fare better in the Canadian labour market when credentials have been granted by a Western European region (Boyd & Thomas, 2002); a pattern perhaps linked to the varying quality of educational programs across different source countries (Sweetman, 2004), or undue discrimination by Canadian employers and professional associations (Dietz, Esses, Joshi & Bennett-AbuAyyash, 2009; Oreopoulos, 2009).
[2-4] http://www.statcan.gc.ca/subjects-sujets/standard-norme/concordances/noc2001-soc1999-cnp2001-ctp1999-eng.htm

migration and post-migration job codes were transformed from the original format found in the LSIC, 1991 Standard Occupational Classification (SOC) codes, into National Occupational Classification for Statistics (NOCS) codes. This step was conducted so that pre-migration and post-migration occupation codes could be

Table 2-1: Study variables and coding key

Independent Variables	
Time	
Months	Continuous
Months^2	Continuous
Human capital factors	
Age	
18-29 years	Reference category
30-39 years	1 = 30-39 years
40-49 years	1 = 40-49 years
50-65 years	1 = 50-65 years
Language Fluency	Continuous (0.00-1.00)
Level of Education	
Bachelor's degree	Reference category
High school or less	1 = holds a foreign high school diploma
College or Trades certificate	1 = holds a foreign college diploma or trades certificate
Master's degree	1 = holds a foreign master's degree
Doctorate	1 = holds a foreign doctorate
Arranged employment	Dichotomous, 1 = yes
Principal applicant	Dichotomous, 1 = yes
Immigrant characteristics	
Female	1 = Female
CMA of residence	
Toronto	Reference category
Montréal	1 = Lives in Montréal
Vancouver	1 = Lives in Vancouver
Other CMA	1 = Lives in a CMA other than Toronto, Montréal or Vancouver
Dependent Variable	
Occupational Status Recovery	Dichotomous, 1=yes

paired with occupational status scores established by the Boyd-NP scale;[2-5] a scale developed using the NOCS system (Boyd, 2008). Second, the dependent variable, change in occupational status, was calculated by subtracting the pre-migration Boyd-NP score from the post-migration Boyd-NP score, with a negative value signifying a situation of downward mobility, a score of zero signifying a person who did not encounter a job status change due to migration and a positive score signifying a situation of upward mobility.

The Boyd-NP scale reduces the 520 occupations listed by the NOCS to a scale ranging from 0-100 (Boyd, 2008). By subtracting the pre-migration score from the post-migration score, change in occupational status scores are more likely to be negative, an indication of downward social mobility, which according to assimilation theory (Chiswick, 1978), is the typical immigrant experience. Since the Boyd-NP scores range from 0 to 100, the largest possible drop in status is –100, and corresponds to an individual who worked as a specialist physician or general practitioner prior to migration (score: 100), yet is working in Canada as a trapper/hunter (score: 0).

It must be acknowledged that a one-point status decrease is not as dramatic as a downward shift of 10, 20 or even 30 points. Since the occupations are scaled with respect to average earnings and education requirements, the greater the decrease in status score, the greater the decrease of "life chances".

[2-5] Although the Boyd-NP scale is a new scale, its construction is similar to the design of the Nam-Powers scale (recently updated by Nam and Boyd in 2004), a scale used for the past forty-odd years to measure socioeconomic status in the United States. Correlations between the Boyd-NP occupational status scores and the education and earnings percentiles are .89 and .84 respectively. Readers are encouraged to consult Boyd's (2008) article for more detailed information on the Boyd-NP scale as well as an overview of the history of socioeconomic scale development.

Therefore, an immigrant who drops a couple of points, although technically downwardly mobile, is essentially able to afford very similar "life chances" after migrating. However, a foreign-trained dentist who works in Canada as a dental hygienist (status change = -24) will not be able to afford as many "life chances" post-migration. Additionally, it is expected that those who experience large drops in occupational status post-migration will more likely encounter psychological ramifications such as depression and anxiety, brought about by the pressures of reduced earnings, deskilling and loss of social status (Asanin Dean & Wilson, 2009).

Concerns regarding the grouping of immigrants who experience a minor drop in status with those suffering substantial points loss are mitigated by the rarity of the former's occurrence. It has been noted that when an immigrant is unable to secure work commensurate to his/her training, the fall in occupational status is usually dire (Reitz, 2003). That is, professionals who are unable to find suitable work will most likely experience substantial decreases in occupational status, not minor ones. For example, even though specialist physicians, general practitioners, dentists, medical lab technicians and orderlies are all occupations belonging to the same job sector, if a trained specialist physician does not locate work in Canada as either a specialist physician (0 unit change) or general practitioner (0 unit change), any other change in status while remaining in the same sector will result in a substantial point difference, given that a specialist physician cannot simply apply his/her skills as a dentist (-1 point) or veterinarian

(-6 points). Instead, it is more likely that the drop will be -30 points (secures work as a medical lab technician) or -60 points (secures work as an orderly).

Even though post-migration drops in occupational status are typically quite pronounced (Reitz, 2003), a sensitivity analysis was performed. Immigrants who experienced an occupational status drop smaller than 10-points were grouped with those who reported no change or an increase in occupational status following migration to Canada. Results from this sensitivity analysis substantiate the findings reported by this and subsequent chapters.

Analytical technique

Given the longitudinal nature of the LSIC dataset, study assumptions were tested using survival analysis. Although survival analysis can handle both continuous and discrete measurements of time, the likely potential of ties between respondents due to the coarse measurement of time (i.e., months), lends to the use of discrete-time survival analysis (Allison, 1982). Pre- and post-migration job comparisons were made for each passing month of study with a Canadian job commensurate in status to the one held prior to migration signifying event completion. Upon event completion, respondents were dropped from further analysis as the calculation of the risk of event occurrence assumes the event did not occur during a previous time record. Therefore, each study respondent contributed at minimum 1 observational record and at maximum 48 observational records. Given the dichotomous nature of the outcome variable, logit link functions were employed.

Discrete-time logistic regression survival analysis enables the handling of both fixed (tombstone) and time-varying variables (Allison, 1982). Fixed variables (i.e., constant over time) include: gender, visible minority status, whether the person entered Canada as a principal applicant, level of education achieved prior to migrating, whether a credential was earned in a western country and whether employment in Canada was arranged prior to migration. Time-varying variables are those characteristics that change value between observation times and include: age of respondent, language proficiency, CMA of residence and occupational status recovery.

Results

Study Question #1: Do immigrant group occupational status scores cluster in a similar fashion post-migration when compared to pre-migration patterns?

Answering the first study question requires an inspection of how similar the occupational status drops are for white men, non-white men, white women and non-white women when the first job secured in Canada is compared to the job held immediately prior to migration. Table 2-2 reports the corresponding occupational status scores as well as a calculation of the point difference between both scores (i.e., drop in status).

The occupational status scores for white men, non-white men, white women and non-white women cluster closely together prior to migration, a pattern which is not replicated following migration to Canada. Prior to migration there is a 4-point spread separating the university-educated immigrant groups, with non-

white men occupying the highest status position (score = 82) and non-white women occupying the lowest status position (score = 78). The spread in scores widens to one spanning 17 points when the average scores for the first job held in Canada by each immigrant group is compared; an approximate fourfold increase. Principal applicants show parallel trends. Prior to migration the four groups of

Table 2-2: Occupational status scores for the pre-migration job and first job in Canada

	Sample Size	Pre-migration (PM) job [95% C.I.]	First job in Canada [95% C.I.]	Change in Status
University-Educated Immigrants				
Non-White Men	1,210	82 [81.0, 82.7]	51 [49.4, 52.3]	-31
White Men	440	81 [79.6, 82.6]	63 [60.3, 65.0]	-18
White Women	300	79 [77.2, 81.0]	52 [48.6, 54.4]	-27
Non-White Women	750	78 [76.8, 79.4]	46 [43.7, 47.3]	-32
Principal Applicants				
Non-White Men	1,140	82 [80.7, 82.4]	52 [50.4, 53.4]	-30
Non-White Women	270	78 [76.1, 80.0]	50 [47.0, 53.0]	-28
White Men	470	77 [75.6, 79.2]	61 [58.6, 63.2]	-16
White Women	130	76 [72.9, 79.2]	56 [56.2, 60.6]	-20

Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: Occupational status scores were calculated using the Boyd-NP socioeconomic scale (Boyd, 2008). The Boyd-NP scale assigns each of the 520 occupations listed by the National Occupational Classification a status score ranging from 0 (lowest status) to 100 (highest status). Same-gender racial groups are ordered in descending order of pre-migration occupational status.
Note: Sample sizes denote the number of people within each category (not person/months as in the case for survival models and predicted probability estimates). To ensure anonymity, all sample sizes have been rounded according to LSIC guidelines.

principal applicants demonstrate a 6-point spread. Non-white men report the highest pre-migration status score average (score=82), while white women hold the lowest average occupational status score prior to migration (score=76). As with university-educated immigrants, the range between the principal applicant immigrant groups widens considerably following migration. In this case, the

initial 6-point spread doubles to 11 points with white men securing higher status first jobs and non-white women securing lower status first jobs than any other immigrant group.

These results suggest that a substantial status divide between immigrant groups is introduced following migration to Canada. Economic entrenchment assumptions are supported over U-shaped assimilation assumptions as both visible minorities and women demonstrate economic vulnerability. For example, non-white men and women report larger drops in status than white men and women. This is especially noticeable in the case of principal applicants as white immigrants drop between 16 and 20 points while non-white immigrants suffer losses of 28 and 30 points. The loss of occupational status upon migrating also appears to be a gendered phenomenon as men routinely outperform their female counterparts. Specifically, white men not only average higher status first jobs after migration compared to white women, they also suffer much lower occupational status losses. Non-white men also report higher status post-migration jobs than non-white women and university-educated non-white men demonstrate a smaller decline in status after migration. Non-white men who identify as principal applicants present the one exception to this overall gender pattern, as they suffer a greater decline in status when compared to non-white women.

Although these descriptive results do reveal the relative disadvantage of women and visible minorities in the Canadian labour market, such disparity could hinge upon human capital differences between the groups. A survival analysis was conducted to test whether the post-migration spread in status scores between

white men, non-white men, white women and non-white women persists despite accounting for differences in human capital qualities.

According to assimilation theory, if immigrants are matched in terms of human capital, labour market performance should be unaffected by gender and visible minority status. This logic however is not supported by the survival model in Table 2-3 as positive identification as a female or non-white is associated with hampered occupational status upon arrival to Canada. Despite matching their male counterparts with respect to the human capital and socio-demographic variables listed above, immigrant women have lower odds of securing a job equivalent in status to the one held prior to migration (university-educated OR=0.790, $p \leq 0.001$; principal applicant OR=0.749, $p \leq 0.01$). Non-white immigrants also show lower odds of securing work upon arrival to Canada commensurate in status to that worked prior to migrating (university-educated OR=0.715, $p \leq 0.001$; principal applicant OR=0.692, $p \leq 0.001$).

Study Question #2: Does increased time in Canada have an equivalent effect on the chances of occupational status recovery for each immigrant group?

Question #2 concerns the impact of time in Canada on the odds of securing a job commensurate in status to the job held pre-migration. As mentioned previously, assimilation theory conceptualizes the immigrant economic assimilation experience as U-shaped. Accordingly, skilled immigrants settling in the United States (Akresh, 2008) and Australia (Chiswick, Lee & Miller, 2003) demonstrate U-shaped assimilation curves when pre and post-migration

Table 2-3: Odds ratios of occupational status recovery

	University-Educated Immigrants n = 94,149 person-months **Odds Ratio**	**Principal Applicants** n = 65,382 person-months **Odds Ratio**
Time in Canada		
Months	0.844 ***	0.837 ***
Months^2	1.003 ***	1.003 ***
Human Capital Factors		
Age		
(Reference: 18-29 years)		
30-39 years	0.807 **	0.779 **
40-49 years	0.634 ***	0.606 ***
≥ 50 years	0.534 **	0.696 *(n.s.)*
Language Fluency	5.097 ***	3.899 ***
Level of Education		
(Reference: Bachelor's degree)		
High School or less		1.510 **
College or Trades		1.121 *(n.s.)*
Master's degree	1.199 **	1.189 *(n.s.)*
Doctorate	1.194 *(n.s.)*	1.405 *
Immigrant Characteristics		
Female	0.790 ***	0.749 **
Visible minority	0.715 ***	0.692 ***
Western credential	1.280 *(n.s.)*	1.175 *(n.s.)*
Arranged employment	3.402 ***	3.265 ***
Principal applicant	0.997 *(n.s.)*	
Settlement CMA		
(Reference: Toronto)		
Montréal	1.022 *(n.s.)*	0.913 *(n.s.)*
Vancouver	0.902 *(n.s.)*	0.966 *(n.s.)*
Other CMA	1.057 *(n.s.)*	1.012 *(n.s.)*

Source: Longitudinal Survey of Immigrants to Canada, 2005
*p ≤ 0.05 **p ≤ 0.01 ***p ≤ 0.001
Note: Standard error estimates calculated using 500 bootstrap weights

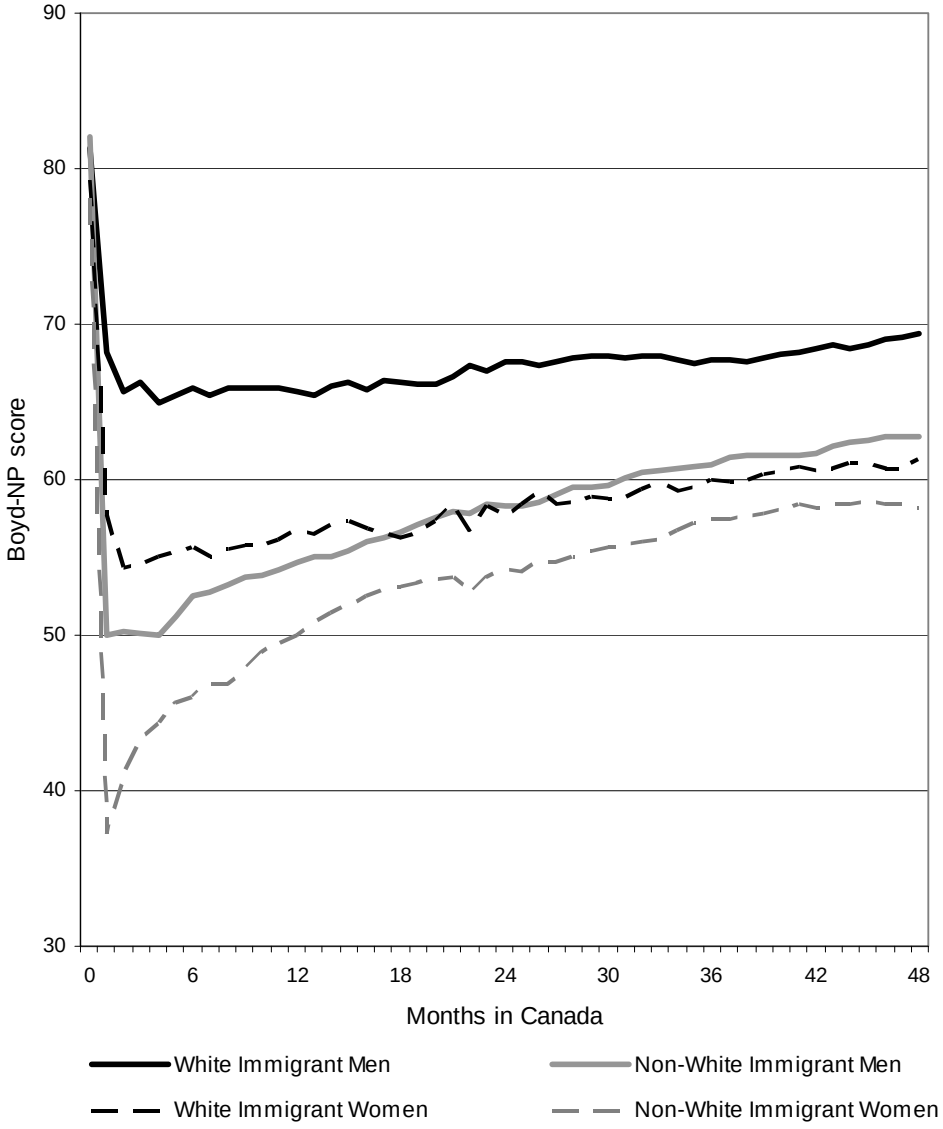
occupational status scores are graphed. To complement the graphs produced by these studies, these studies, the recovery trajectories for highly skilled immigrants who entered Canada between October 1, 2000 and September 30, 2001 are

charted in Figures 2-1 and 2-2.[2-6] For both university-educated immigrants (Figure 2-1) as well as principal applicants (Figure 2-2), the groups are much more tightly clustered prior to migration (i.e., months=0) than upon entry into Canada's labour market. The depressed returns in the Canadian labour market for women and visible minorities are not only evident in these figures, but are also substantiated by the aforementioned survival analysis.

Although other projects have noted a U-shaped assimilation curve for immigrants, it is difficult to determine from the trajectories in Figures 2-1 and 2-2 whether time acts favourably on immigrant status recovery. Although all groups demonstrate great strides in recovery following initial drops within the first six months to a year, a marked reduction in rate of occupational status recovery is apparent with the continued passing of time in Canada. It appears from Figures 2-1 and 2-2 that the recovery trajectories approach a ceiling or plateau; a pattern especially noticeable for non-white women. To determine whether status recovery is indeed aided or hampered by continual time in Canada, the survival analysis results in Table 2-3 are again consulted. Although the trajectories depicted in Figures 2-1 and 2-2 reflect the lived experiences for each immigrant group, the results in Table 2-3 determine whether these experiences are explainable as a result of human capital differences between the groups.

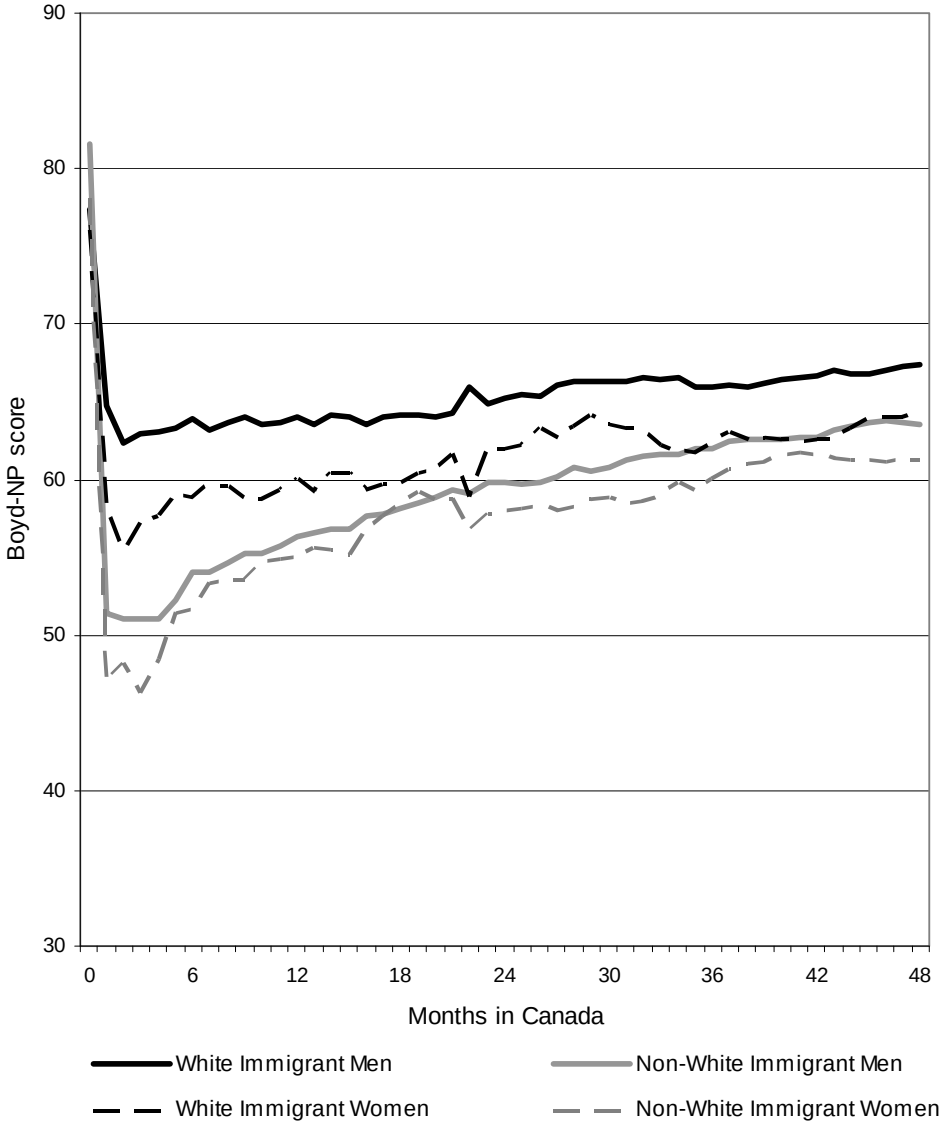
[2-6] Figures 2-1 and 2-2 chart the mean Boyd-NP occupational status scores for white men, non-white men, white women and non-white women for each month since arrival in Canada. Figure 2-1 charts the experiences of university-educated immigrants and Figure 2-2 charts the experiences of principal applicants. For both, as time progresses the recovery rate for each immigrant group slows. White men occupy the least disadvantaged position post-migration while non-white women occupy the most disadvantaged position post-migration. These trajectories do not account for human capital differences between groups.

Figure 2-1
Occupational status recovery trajectories for university-educated immigrants



Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: Occupational recovery trajectories for immigrants who held a university-degree at time of entry to Canada. Month '0' denotes the occupational status (Boyd-NP status score) of the job held immediately prior to migration.
Note: Sample sizes: (White men: 440, Non-white men: 1,210, White women: 300, Non-white women: 750). Sample sizes denote the number of people within each category (not person/months as in the case for survival models and predicted probability estimates). To ensure anonymity, all sample sizes have been rounded according to LSIC guidelines.

Figure 2-2
Occupational status recovery trajectories for principal applicants



Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: Occupational recovery trajectories for immigrants who migrated as the principal applicant to one of Canada's economic programs. Month '0' denotes the occupational status (Boyd-NP status score) of the job held immediately prior to migration.
Note: Sample sizes: (White men: 470, Non-white men: 1,140, White women: 130, Non-white women: 270). Sample sizes denote the number of people within each category (not person/months as in the case for survival models and predicted probability estimates). To ensure anonymity, all sample sizes have been rounded according to LSIC guidelines.

According to Table 2-3, time in Canada is unfavourable for the occupational status recovery of all immigrant groups (OR=0.844, $p \leq 0.001$). The quadratic function for time is also significant for both groups, indicating that immigrants likely experience occupational status recovery in a non-linear fashion. Ultimately, the unfavourable effect of time on occupational status recovery contradicts the logic of U-shaped assimilation, instead supporting an economic entrenchment model; immigrants approach a status recovery ceiling or plateau with increased time in Canada. To understand the impact of time on each immigrant group of interest (i.e., the effect of time on white men, non-white men, etc.), a series of conditional predicted probabilities was generated, the results of which are presented in Table 2-4.

Whether discussing the trends for white men, non-white women, or others, university-educated immigrants and principal applicants demonstrate similar trends with respect to the overall impact time has on the rate of occupational status recovery. For all immigrant groups, the first six months in Canada appears most favourable for status recovery, with the conditional probability of occupational status recovery steadily declining with each subsequent 6-month interval of time in Canada. Overall, white men outperform the other groups, reporting the strongest rates of improvement. Specifically, for each month that passes during the first six months in Canada, white men report status recovery rates of approximately 3.9% (university-educated) and 4.8% (principal applicants) per month. However, chances of occupational status recovery are much lower by the fourth year in Canada, as the rate of improvement (i.e., conditional

probability) slows to 0.3% (university-educated) and 0.1% (principal applicant) per month. As predicted by an economic entrenchment model, non-white immigrant women report the slowest recovery rates compared to the other groups.

Table 2-4: Conditional probabilities of occupational status recovery for each six-month time increment following migration to Canada

Months in Canada	**University-Educated Immigrants**			
	White Men	Non-White Men	White Women	Non-White Women
6	0.0393	0.0247	0.0267	0.0167
12	0.0132	0.0075	0.0120	0.0068
18	0.0034	0.0049	0.0028	0.0041
24	0.0058	0.0043	0.0056	0.0042
30	0.0068	0.0052	0.0053	0.0040
36	0.0039	0.0045	0.0028	0.0032
42	0.0040	0.0030	0.0050	0.0038
48	0.0027	0.0021	0.0036	0.0028
Months in Canada	**Principal Applicants**			
	White Men	Non-White Men	White Women	Non-White Women
6	0.0475	0.0277	0.0294	0.0170
12	0.0147	0.0092	0.0153	0.0096
18	0.0042	0.0052	0.0048	0.0059
24	0.0047	0.0049	0.0043	0.0045
30	0.0056	0.0049	0.0031	0.0028
36	0.0055	0.0046	0.0024	0.0020
42	0.0006	0.0004	0.0008	0.0005
48	0.0012	0.0008	0.0014	0.0010

Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: A conditional probability of occupational status recovery is defined as the probability of occupational status recovery occurring within a given segment of time provided recovery did not occur in earlier months. Conditional probability calculations include controls for months and months^2 since arrival in Canada; age; language proficiency; whether employment was arranged prior to migration; level of education; whether a credential was earned in a western country; CMA of residence; gender; and, visible minority status

Despite holding human capital and socio-demographic factors constant, non-white women report recovery chances of 1.7% for each passing month during the first six months; a rate less than half that of white immigrant men's. By the end of the fourth year in Canada, recovery rates slow considerably. Both white men and non-

white women report equivalent recovery rates of 0.3% (university-educated) and 0.1% (principal applicants) per month by study end. These results support claims that a gender/visible minority hierarchy indeed exists in the Canadian labour market. Whether initial starting points in the Canadian labour market are considered, or trends over time, white men outperform the other immigrant groups while non-white women underperform.

Discussion

The impact of settlement time upon immigrant economic wellbeing serves as the main point of departure between economic entrenchment claims and assimilation theory. While assimilation theory views time since arrival as beneficial for immigrants, the economic entrenchment literature describes time as detrimental for poorly employed immigrants; the more time immigrants spend working low status jobs, the more difficult it is for underemployed immigrants to improve their economic position (Man, 2004; Mojab, 1999; Pratt, 1999). In support of the economic entrenchment literature, this study finds that time imparts a deleterious effect upon occupational status recovery. Specifically, the greatest improvements occur within the first six months following migration to Canada, with the rate of recovery steadily decreasing for each subsequent six-month interval of time.

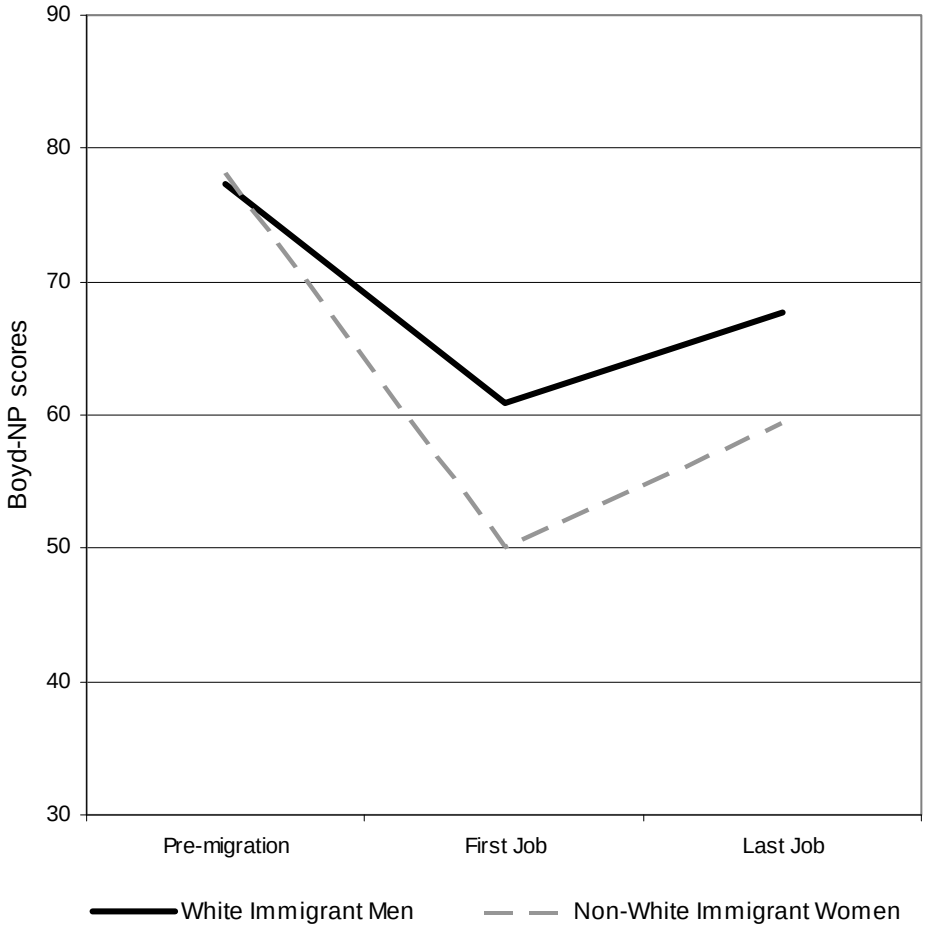
It is possible that the findings from this chapter diverge from the findings of recent international work (Akresh, 2008; Chiswick, Lee & Miller, 2003; Rooth & Ekberg, 2006) due to the use of different increments of time during the follow-

up period. Compared to previous investigations, this study uses much finer time increments when assessing the economic wellbeing of immigrants, thereby allowing for a more detailed mobility trajectory to be calculated. Previous assimilation studies have typically studied immigrant recovery trajectories with three distinct time-points: pre-migration occupational status, occupational status for the first job obtained in a host country, and occupational status in a host country at study end (Akresh, 2008; Rooth & Ekberg, 2006). Figure 2-3 illustrates the impact of using fewer time-points when plotting recovery trajectories. Using the same data that was used to plot Figure 2-2, Figure 2-3 charts the trajectories for principal applicant white men and non-white women when data points for the pre-migration, first job and last job are used.

Figure 2-3 shows that the detail that monthly measurements offers is lost when only three time points are charted, which ultimately results in a more favourable outlook of immigrant economic improvement than that diagrammed in Figure 2-2. By plotting immigrant group averages for each month since arrival, as was done in Figure 2-2, the improvement in status at a decreasing rate is obvious. Therefore, even though Figure 2-3 supports assimilation theory – that immigrants continually improve their economic station given increased time in a host labour market – we know from Figures 2-1 and 2-2 (as well as the survival analysis) that richer data presents an alternate outlook on immigrant assimilation as a function of time in Canada, one that is more supportive of economic entrenchment. This

comparison reveals that the frequency with which data is collected in a longitudinal study is of paramount importance. Although longitudinal studies of immigrant economic recovery are more telling of actual recovery trajectories the

Figure 2-3
Occupational status recovery trajectories for principal applicants using three time points



Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: Three-point occupational status trajectories for white/male and non-white/female principal applicants are plotted using the average Boyd-NP occupational status scores for the job held immediately prior to migration, the 'first job' held in Canada and the 'last job' held in Canada. 'Last job' refers to either the job that a participant is currently working (if the participant is employed at the end of the fourth year in Canada) or the last job worked by the participant (if the participant is unemployed at the end of the fourth year in Canada).

longer the total follow-up period is, the quality of such data is greatly improved by increasing the periodicity with which interviews occur within the follow-up period.

Despite accounting for differences in human capital and socio-demographic factors, this chapter reveals that economic success in Canada is intimately connected to group composition: white immigrant men fair the best while non-white immigrant women demonstrate the poorest outcomes. These results support the gender/visible minority hierarchy noted by others, where white immigrant men routinely outperform other groups and non-white immigrant women routinely underperform (Boyd, 1992; Li, 2000). Relative to white men, non-white men and white women, non-white immigrant women experience the largest drop in occupational status upon entry to Canada as well as the slowest rate of occupational status recovery. These two conditions may signify the greater engagement by non-white women in lower status jobs (i.e., "survival jobs") than any other immigrant group. Also notable is the shared rate of occupational status recovery between white men and non-white women during the fourth year in Canada (Table 2-4). This finding suggests that although the size of the inequalities gap between white men and non-white women at the end of the third year will not grow in the fourth year, it also does not improve. Thus, inequalities between these two groups appear cemented by the end of the 36th month in Canada.

Chapter results show that labour market returns are hierarchical and organized along gender and visible minority status lines. This finding supports

claims that gendered racism may be present in the Canadian labour market (Galabuzi, 2006). Even so, these results do not support blanket statements of discrimination as empirical investigations of white/non-white differences in the labour market do not conclusively explain the wellbeing of all white or all non-white immigrants (Pendakur & Pendakur, 1998). Future research must inspect the occupational status recovery of specific ethnic/cultural groups as it is possible that some groups are particularly susceptible to racialization while others are not.

This chapter also demonstrates that occupational status recovery is a gendered process as white immigrant women underperform when compared to white men and non-white women underperform when compared to non-white men. Although gendered racism does offer an explanation of this finding, the reduced status recovery of immigrant women compared to immigrant men may be a consequence of filial demands. Immigrant women often find an increase in labour within the home post-migration due to severed social networks; the inability to afford domestic labour in Canada; as well as the lack of state-funded childcare in Canada, a noticeable setback for women from China (Salaff & Greve, 2004; Spitzer, Neufeld, Harrison, Hughes & Stewart, 2003; Waters, 2002). Additionally, immigrant women are more likely to assume a secondary role within the family, facilitating the labour market success of their husbands (Graham & Thurston, 2005; Ho, 2006). These factors potentially culminate, hindering the performance of immigrant women relative to immigrant men.

In addition to gender processes within the domestic home, occupational sex segregation is another plausible explanation for the greater economic

vulnerability of immigrant women compared to immigrant men (Boyd, 1997; Salaff & Greve, 2003). Immigrant men and women are concentrated in different occupational streams prior to migration and as such they may experience varying levels of resistance to the application of foreign human capital in the Canadian labour market. For example, 10% of women and 3.5% of men interviewed in the LSIC report working a health occupation prior to migrating (Chui & Tran, 2003). Considering the highly regulated and professionalized nature of Canada's health sector (Ogilvie, Leung, Gushuliak, McGuire & Burgess-Pinto, 2007), it is possible that 2.8 times more women than men will face credential recognition barriers when attempting to apply foreign health credentials, the consequence of which may include the greater underemployment of immigrant women.

Policy Implications

This chapter focuses on the economic welfare of highly skilled immigrants, and as such, policy recommendations are geared towards Canada's skilled workers program. Unlike American policy, Citizenship and Immigration Canada (CIC) does not insist that skilled workers pre-arrange work prior to entry; a policy difference that on the one hand eases the flow of highly skilled immigrants to Canada while on the other, fosters an environment in which skilled immigrants are more economically vulnerable compared to their American counterparts (Somerville & Walsworth, 2009). The vulnerability of immigrants who have not made connections with Canadian employers prior to migration is apparent within the present study as those with pre-arranged employment emerge

with much higher odds of occupational status parity in Canada. Presently, CIC awards 10 points out of a total of 67 to immigrants who pre-arrange work. Awarding more of the point-share to skilled workers who have pre-arranged employment is warranted given the economic success of immigrants who arrive having already arranged work with Canadian employers. Stressing the importance of employer-sponsored immigrants also "demonstrates a way to better align employer demands with admission" (Somerville & Walsworth, 2009, p.156) and may provide a more accurate depiction of Canadian labour demand realities compared to the present system of selecting skilled immigrants according to CIC's list of occupations in need of workers.[2-7]

Chapter results also reveal that immigrants have higher odds of securing work commensurate in status to pre-migration work if they are fluent in English and/or French. Canada's points system already emphasizes language skills as a main selection criterion and awards approximately 40% of the points necessary for admission to applicants who can demonstrate fluency in either of Canada's official languages. Overall, chapter results support the current point allotment as economic success appears to be intimately linked to language skills.

Finally, this chapter demonstrates the need for timely newcomer settlement services. Considering the steady decrease in rates of recovery (Table 2-4), as well as the apparent solidifying of economic fortunes come the fourth year in Canada, it is well-advised that settlement services be accessible as soon as possible. The one-year anniversary in Canada has recently been recommended as

[2-7] CIC's list of occupations in need of international migrant labour may be accessed at: http://www.cic.gc.ca/english/immigrate/skilled/apply-who-instructions.asp#list

a critical point for the economic health of new immigrants by Grenier and Xue (2009) who reveal that once immigrants pass the twelfth month in Canada the odds of finding a first job in an intended area of employment depreciates significantly. This chapter certainly supports this observation as the greatest amount of occupational status recovery occurs within the first year of settlement when compared to any other post-migration year.

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Chapter 3
Does the Canadian labour market privilege white immigrants?

Introduction

It is well-acknowledged that highly skilled immigrants receive dismally low returns to their foreign human capital in the Canadian labour market (Aydemir & Skuterud, 2005; Frenette & Morissette, 2005) and that non-white immigrants receive lower returns to their human capital than white immigrants (Buzdugan & Halli, 2009; Ferrer & Riddell, 2008; Li, 2001; Reitz, 2001). What is not well understood is why this occurs. One explanation for the underperformance of non-white immigrants relative to white immigrants centres on human capital quality concerns. Since the majority of non-white immigrants originate from non-traditional source countries it is possible that their credentials and work experience are unsuitable for the Canadian labour market (Sweetman, 2004). Further still, these immigrants are less likely to be fluent in Canada's official languages when compared to immigrants from traditional source countries (Boyd & Cao, 2009). However, it is also possible that non-white immigrants experience lower returns to their human capital due to labour market discrimination (Dietz, Esses, Joshi & Bennett-AbuAyyash, 2009; Oreopoulos, 2009).

This chapter provides new evidence towards the human capital quality versus labour market discrimination debate. Using the nationally representative Longitudinal Survey of Immigrants to Canada, occupational status recovery odds are calculated for eight immigrant groups who differ with respect to ethno-racial

background and credential source area. Specifically, outcomes are assessed for Chinese, South Asian, Filipino, and Eastern European immigrants with remaining respondents divided according to white/non-white status and western/non-western credential source.[3-1] This study also compares group outcomes amongst foreign-trained engineers (i.e., regulated industry) and IT professionals (i.e., unregulated industry). Due to a lack of guidance by the state or professional associations, employers in unregulated fields are afforded more decision-making space than employers in regulated fields. Since non-whites are often penalized when foreign human capital is assessed subjectively (Dietz et al., 2009; Oreopoulos, 2009), it is expected that group inequalities between white and non-white immigrants will be especially pronounced when comparisons are made within the unregulated IT industry.

Overall, study results support claims that non-white immigrants experience labour market discrimination in Canada. Despite controlling for human capital differences, pre-migration occupation, gender, and settlement city, white immigrants emerge with higher odds of occupational status recovery compared to non-white immigrants. Even though all immigrants with non-western credentials are expected to perform similarly once controls are introduced, white Eastern European immigrants report significantly higher odds of occupational status recovery when compared to other immigrant groups with non-western credentials, namely Chinese, South Asian and Filipino immigrants. Inequalities are especially acute in the unregulated IT profession. Although an overarching

[3-1] The methods section outlines operational definitions for Chinese, South Asian, Filipino and Eastern European categories.

immigrant effect is evident for foreign-trained engineers (i.e., no group differences), white IT professionals, regardless of credential source area demonstrate higher odds of occupational status recovery when compared to non-white IT professionals, including non-white IT professionals with western credentials. This chapter highlights the importance of considering occupation-specific outcomes. Although it has been suggested that non-white immigrants are shielded from labour market discrimination if they have western credentials (Dietz et al., 2009), results from this final analysis reveal that this is not always the case.

Literature Review

Labour market subordination of non-white immigrants in Canada

Spurred by an increased demand for highly skilled workers, dropping migrant supply from traditional source countries and criticism of the nation's discriminatory immigration policies, Canada's points system was unveiled in 1967 (Hawkins, 1988). With a focus on immigrant skills instead of immigrant origins, the institution of the points system drastically changed the ethnic composition of newcomers to Canada (Reitz, 2007). In 1967, 80.1% of entrants were of European or American origins with Great Britain (28.0%), Italy (13.5%), the United States (8.5%), Germany (5.3%) and Greece (4.8%) representing the top sending countries. Contemporary immigrant streams on the other hand reflect

the impact of the points system. In 2009, the top three sending countries were the People's Republic of China (12%), the Philippines (11%) and India (10%).[3-2]

To ensure suitability for the Canadian labour market, the present-day points system scores applicants according to six main criteria: level of education, language proficiency, work experience, age, arranged employment, and overall adaptability. Top point allotments are reserved for those with high levels of education, work experience and proficiency in Canada's charter languages. However, in spite of scoring high points for their human capital profiles (Akbari, 1999; Li, 2003), newer immigrant cohorts, the majority of whom are non-white, are experiencing poor returns to their foreign human capital and a worsening economic position relative to native-born Canadians. Specifically, despite higher levels of education compared to native-born Canadians, the earnings gap between immigrants and native-born Canadians is increasing (Aydemir & Skuterud, 2005; Baker & Benjamin, 1994; Bloom, Grenier & Gunderson, 1995; Frenette & Morissette, 2005). Even with favourable business cycle conditions, the entry earnings gap for recent immigrant cohorts is now so wide that eventual convergence between immigrants and native-born Canadians is unlikely (Frenette & Morissette, 2005).

In addition to widening disparities between the Canadian-born and immigrants as a whole, economic inequalities among subgroups of immigrants are also apparent. For example, when compared to their white peers, non-white immigrants routinely report an earnings disadvantage (Boyd, 1992; Buzdugan &

[3-2] Statistics retrieved November 15, 2010 from Citizenship and Immigration Canada website: http://www.cic.gc.ca

Halli, 2009; Li, 2000; 2001; 2003, Pendakur, 2000; Reitz & Sklar, 1997; Wanner, 2003). Additionally, despite holding equivalent human capital profiles, non-white immigrants report higher rates of underemployment when compared to their white counterparts (Galarneau & Morissette, 2004): the underemployment rate for non-white immigrant men is 13% higher than that of white immigrant men. The same trend is evident for immigrant women except in this case non-white immigrant women report underemployment rates 20% higher than those reported by white immigrant women (Galarneau & Morissette, 2004).

Although evidence points to the greater vulnerability of non-white immigrants in the Canadian labour market, the mechanism(s) influencing their depressed economic welfare remain(s) unclear. One possibility is that recent immigrant cohorts experience diminished economic returns due to the inferior quality of their human capital profiles (Sweetman, 2004). Even though contemporary skilled immigrants possess high levels of education and work experience (Akbari, 1999), the transferability of these skills to the Canadian labour market may be limited (Li, 2001; Reitz, 2001; Schaafsma & Sweetman, 2001). Similarly, given that the majority of immigrants are from non-traditional source countries, their economic underperformance may merely reflect inadequate language skills (Aydemir & Skuterud, 2005; Boyd & Cao, 2009). Another possibility is that non-white immigrants encounter labour market discrimination.

This chapter tests these possibilities, paying particular attention to the type of occupation immigrants worked prior to migration as immigrants working in regulated fields may have a more difficult time securing a similar job in Canada

compared to immigrants who seek employment in unregulated fields (Zietsma, 2010). Although a general immigrant effect is expected in regulated professions, foreign credential assessment is typically at the discretion of employers in unregulated fields. This discretionary freedom plausibly opens the door to the formation of inequalities between ethno-racial groups given that subjective assessments of foreign credentials are prone to racial bias (Creese, 2009).

The subordination of non-white immigrants: *Contemporary social stratification trends in Canada*

Connecting newcomer group membership with labour market outcomes has been a long-standing tradition in the area of social stratification (Porter, 1965; Warner & Srole, 1945). When Porter's *The Vertical Mosaic* (1965) and Warner and Srole's *The Social Systems of American Ethnic Groups* (1945) were written, Canada and the United States were largely stratified according to ethnic affiliation. With both countries rooted in the traditions of white, Christian and Western European culture, the social positioning of newcomers was facilitated or hindered by the degree of similarity to Anglo-Saxon culture; the greater the difference, the longer the assimilation period and the greater the subordination upon arrival (Warner & Srole, 1945). For immigrants who work low status jobs upon arrival, upward mobility, the ability to move from low status to higher status jobs is an achievement largely governed by group composition, particularly ethnic affiliation (Porter, 1965).

Although inequalities continue to persist in Canada, there is debate as to whether ethnic affiliation, the principal stratifying factor in Canada in the mid-

20th century, is as strong a stratifying contributor today (Lautard & Guppy, 1999; 2008; Satzewich & Li, 1987). Some groups who once underperformed relative to the two charter groups now earn and hold jobs equal to or even greater in status to English- and French-Canadians. For example, in the mid-twentieth century, all European groups (with the exception of those with Jewish heritage) were less likely to hold professional and financial occupations when compared to the two charter groups, but particularly with respect to those from the British Isles (Porter, 1965). By 1981, Scandinavian, Ukrainian, Polish, and Hungarian men joined the British and Jewish in reporting higher occupational status scores than the rest of the Canadian labour force, with the latter three Eastern European ethnic groups claiming the same status position in 1991 (Lautard & Guppy, 1999). By 2001, all European men, with the exception of Portuguese men, reported jobs higher in status than the rest of the Canadian labour force (Lautard & Guppy, 2008).

Even though ethnicity may not reliably account for the economic fortunes of native-born Canadians, particularly Canadians with European heritage, the economic success of new immigrants still appears to be heavily contingent upon markers of difference and, in particular, skin colour.

Given the increase in immigration from non-traditional source countries, skin colour is emerging as a powerful indicator of economic welfare for newcomers (Galabuzi, 2006). Noting the shift in immigrant source countries from European to non-European origins, Satzewich and Li (1987) remark that race will eventually supersede ethnicity as a more salient factor in structuring labour market inequalities. Reminiscent of Porter's (1965) earlier accounts of

stratification mechanisms, Reitz and Sklar (1997) suggest that the immigrant assimilation experience is heavily influenced by native-born Canadian assessments of immigrant 'foreignness', a judgment largely influenced by immigrant skin colour. Immigrants self-identifying as non-white are viewed as more 'foreign' than white immigrants and, as such, occupy a disadvantaged position in the Canadian labour market when compared to white immigrants (Reitz & Sklar, 1997). Thus, contemporary newcomers to Canada's labour market may be at a particular disadvantage if they are non-white.

The empirical dilemma:
Labour market discrimination or inferior human capital profiles?

When considered empirically, labour market discrimination is typically inferred. Persistent group differences despite attendance to alternate explanations (human capital investment differences, labour market characteristics, etc.) are often interpreted as indirect evidence of labour market discrimination towards a vulnerable population. This interpretation is tenuous however as it assumes that a model is properly specified. Neglecting to control for a core explanatory factor will result in a under-specified model and the inaccurate interpretation of significant group differences as evidence of labour market discrimination. When studying immigrant outcomes, empirical estimates of labour market discrimination are even more complex as diminished returns may be a result of labour market discrimination or indicative of inferior human capital quality.

It is difficult to determine whether Canada's skilled newcomers, the majority of whom originate from China, South Asia and the Philippines, face

racial discrimination or whether they are receiving appropriate returns for their human capital portfolios. Job seekers from non-traditional source countries may suffer from inferior language capabilities as well as education and work experience portfolios that are unsuitable for the Canadian labour market. As Li (2001) comments, "… racial characteristics of holders of credentials cannot be separated from the credentials themselves" (p.33). That is, it is difficult to tell whether employers are discriminating against an individual due to social markers (i.e., a Chinese immigrant) or whether employers are devaluing a credential (i.e., a degree from China).

Even so, results from innovative field studies do indicate that employers use social markers as cues when making hiring decisions. Dietz et al. (2009) show that although quality assessments of whites and non-whites are viewed similarly when both hold foreign credentials that have been verified, applicants with European surnames are viewed more positively than applicants with African surnames when both groups hold non-recognized foreign credentials.[3-3] Similarly, using thousands of fictitious résumés Oreopoulos (2009) demonstrates that applicants with English surnames receive significantly more callbacks from potential employers when compared to applicants with Indian, Chinese or Pakistani surnames even though all other aspects of the résumés (source of education, years experience, etc) are held constant. Evidence of racial discrimination in the American context is also apparent as applicants with Anglo names receive 50% more callbacks from employers in the Boston and Chicago areas when compared to equally qualified applicants with African-American

[3-3] In their study, Dietz et al. (2009) define foreign credentials as those earned in South Africa.

names (Bertrand & Mullainathan, 2004). These findings suggest that employers may use social markers such as a person's name to make assumptions about a person's language capabilities or perceived cultural fit within a firm, a process that consistently penalizes applicants with non-Anglo profiles (Oreopoulos, 2009).

The subordination of non-white immigrants in the Canadian labour market due to racially biased assessments of foreign human capital reproduces white privilege (Creese, 2009):

> Contrary to human capital theory … skills, experience, and education are not assessed outside of the broader context of processes of racialization … that "imagine" belonging in Canada along racialized lines. This fact helps to explain why a degree from a British university will be accepted at face value, while a commonwealth degree from an English-language university in a Commonwealth country, such as India or Uganda (both of whose systems are modeled on the British educational system), will not be accepted by Canadian employers or professional associations (p.214).

Inequalities within regulated and unregulated occupations

Creese's (2009) work reveals the power that individual employers and professional associations have when determining applicant qualifications. Indeed, credential recognition is cited as a major barrier to labour market success for immigrants in regulated professions as they must meet association and state requirements before being granted the right to practice their craft in Canada (Zietsma, 2010). This does not appear to be the case for immigrants with foreign credentials in unregulated fields. Unlike immigrants in regulated occupations who must fulfill professional association requirements and appeal to individual

employers, skilled immigrants in unregulated professions must only meet the "hiring preferences" of employers (Hall & Sadouzai, 2010, p.196). A recent study by Hall and Sadouzai (2010) demonstrates that unlike immigrants in regulated occupations immigrants in the unregulated high-tech sector are more likely to find work in Canada that matches their skills.

However, even though Hall and Sadouzai (2010) demonstrate that foreign-trained hi-tech workers are able to access jobs more easily than those in regulated fields, it is not clear whether this is the case for all immigrants. Pairing the tendency of employers to racially bias their assessments of foreign human capital (Creese, 2009) with the decision-making flexibility awarded employers within the hi-tech industry (Hall & Sadouzai, 2010), it is highly suspect that the ease with which immigrant hi-tech workers access jobs is an event predominately experienced by white, European immigrants. Although racial discrimination is also evident in regulated occupations (Stasiulis & Bakan, 2005), obvious inequalities are less likely to precipitate for new immigrant cohorts given that all immigrants are subject to the same restrictive assessments, resulting in an overall "immigrant effect".

The present study

The empirical study of labour market discrimination towards racially diverse immigrants must attend to two concerns: 1. the model under study is properly specified and, 2. it is possible to identify whether group differences are due to quality concerns of immigrant human capital or whether group differences

are a result of racial discrimination. This study considers these possibilities using data from the Longitudinal Survey of Immigrants to Canada (LSIC)*;* a Statistics Canada dataset that tracked the social and labour market outcomes of immigrants during their first four years of life in Canada*.* This dataset allows for the identification of immigrants according to: self-identification as a visible minority; self-identification of ethnic group; country in which the highest level of education was earned; pre-migration occupation; and the occupation worked for each month since migrating to Canada. Using a culmination of these, and other variables, the present study inspects the occupational status recovery (i.e., social mobility) of highly skilled immigrants by exploring the following two questions:

Question #1: Are the occupational status recovery odds at time of entry and after four years similar for immigrants who belong to different ethno-racial groups?

Using survival models, the occupational status of each ethno-racial group will be determined at time of entry to Canada (i.e., degree of downward mobility due to international migration) as well as over the first four years in Canada (i.e., amount of occupational status recovery or upward mobility). These models will determine whether the occupational status drop at time of entry and eventual recovery is stronger for Eastern European or other white immigrants compared to Chinese, South Asian, Filipino or other non-white immigrants when human capital, labour market and demographic attributes are held constant.

Even though this study will not allow us to determine whether poor economic outcomes for some groups are a result of human capital quality differences versus labour market discrimination towards immigrants with certain

ethno-racial backgrounds, an argument that labour market discrimination towards non-whites is supported if the following trends are found to be true. First, it is expected that no matter the ethno-racial background, immigrants with western credentials should outperform immigrants with non-western credentials as immigrants with western credentials are rewarded in the Canadian labour market when compared to their peers with non-western credentials (Ferrer & Ridell, 2008; Li, 2001) as there is typically greater industry knowledge about western credential quality (Boyd & Thomas, 2002). Thus, a labour market discrimination argument is supported should non-whites with western credentials under-perform relative to whites with non-western credentials. A labour market discrimination argument is also supported should Eastern European immigrants outperform other groups (non-whites or otherwise) who hold non-western credentials when human capital, labour market characteristics, and demographic variables are held constant.

Question #2: Are there ethno-racial group differences in occupational status recovery odds when the outcomes of engineers (i.e., those working in a regulated profession) and IT professionals are considered (i.e., those working in an unregulated profession)?

Engineers and IT professionals are two highly skilled professional groups that differ from one another in a key way: industry regulation. Immigrant engineers must navigate a credential recognition program should they wish to work in Canada. Regardless of whether a credential is from Canada, another western country such as the United States or non-western countries such as China or Romania, all engineers must fulfill regulatory requirements to earn a P.Eng.,

the designation of a licensed engineer (Lemay, 2007). Given that the LSIC dataset is limited to the first four years post-migration, it is unlikely that foreign-trained engineers will have had sufficient time to complete the rigorous accreditation process. Thus, it is expected that all immigrant engineers, regardless of ethno-racial background, will be subject to an overall "immigrant effect", experiencing downward mobility due to blocked entry to the engineering profession.

An overarching 'immigrant effect' is not expected to hold for those in unregulated professions. Unlike engineers, computer programmers are not subject to a rigorous accreditation process, as the Canadian IT industry is unregulated. As such, assessment of foreign credentials, work experience and overall immigrant 'quality' is evaluated on an individual basis by Canadian employers. Without formal guidelines, judgment of immigrant quality is highly subjective and rests on employer perceptions of applicant suitability.

Due to the licensing requirements of the Canadian engineering profession it is expected that the eight immigrant groups will perform similarly (i.e., no significant group differences). Although it is possible that non-white engineers face labour market discrimination, the impact of this barrier will not be statistically apparent as all groups will have difficulty establishing themselves in Canada as an engineer due to the rigorous accreditation process. However, should visual markers of difference influence employer decisions, group differences are expected to emerge between IT professionals. Thus, despite accounting for human capital and demographic factors, it is expected that white Eastern European

immigrants will outperform Chinese, South Asian, and Filipino immigrants even though all of these groups hold non-western credentials.

Methodology

Data source

Study questions are explored using data from the Longitudinal Survey of Immigrants to Canada (LSIC), a joint initiative by Citizenship and Immigration Canada and Statistics Canada. The LSIC was designed to enable researchers to study the settlement experience for Canadian newcomers who arrived between October 1, 2000 and September 30, 2001 (Justus & MacDonald, 2003). In addition to arrival time, study inclusion also required that respondents be at least 15 years of age at the time of landing and must have landed from abroad (Justus & MacDonald, 2003). Study participants were surveyed on three separate occasions over a span of four years on a number of topics including: labour market experiences, household composition and educational background. Although 12,000 participants were originally surveyed during the first interview, attrition over time resulted in a final sample size of 7,700 (Houle & Schellenberg, 2010). Despite a 37% attrition rate, the final sample size is felt to be "nationally representative of approximately 157,600 new immigrants, of whom 104,400 are economic immigrants, 42,600 are family-class immigrants and 9,700 are refugees" (Houle & Schellenberg, 2010, p.12).

To answer the aforementioned study questions, a number of sample restrictions were applied to the LSIC dataset. The first selection was to identify

highly skilled immigrants. Therefore, the sample was restricted to those who were either university-educated prior to entry or a principal applicant to one of Canada's economic programs. Age limits were set so that respondents were between the ages of 18-65 years for the entire course of the study. Respondents were also dropped from analysis if they were unemployed prior to migration or did not work during the first four years of settlement in Canada. Since Canadian education nets better returns compared to foreign credentials (Ferrer & Riddell, 2008; Li, 2001), immigrants with Canadian educational content were also dropped from analysis. Additionally, refugees and provincial nominees were excluded from analysis as their labour market experiences are expected to be dissimilar to those entering Canada via the family reunification or other economic programs. For example, most of Canada's provincial nominees are people who are in Canada to work a predetermined job. Since these immigrants must fulfill prearranged work contracts they are unable to apply their human capital as freely as immigrants entering Canada under other economic schemes. Due to the conditions of their migration experience, many refugees do not have employment or education records, and as such are faced with an additional barrier to finding suitable employment (Krahn, Derwing, Mulder & Wilkinson, 2000). Finally, respondents were excluded from study if they did not self-report on visible minority status or ethnic background.

After applying the sample restrictions, the dataset was further modified; transforming it from a person-wave dataset to a person-month dataset. This final alteration allows for the occupational status of respondents to be determined for

each month since arrival in Canada. Sample restrictions and the transformation of the dataset from a person-wave to a person-month unit of analysis resulted in a final sample size of 103,782 person-months and reflects the experiences of approximately 3,030 individual respondents.

Measures

Independent Variables

Three sets of independent variables are employed in this study: 1. *Human capital characteristics* (age; language proficiency; level of education pre-migration; whether employment was arranged prior to migration; and principal applicant status 2. *Occupational groupings* (IT specialist; engineer; sciences (other); finance (university credential required); finance (university credential not required); health (university credential required); health (university credential not required); primary or secondary school teacher; professor; other social sciences occupation; arts; sales or service; trades; industry; and, manufacturing). An IT specialist refers to anyone working a pre-migration job beginning with the National Occupational Classification for Statistics system (NOCS) code 'C07'. The majority of IT specialists in this study worked as either database analysts (NOCS code: C072) or software engineers (NOCS code: C073) prior to migration. All other IT jobs (e.g. a user support technician or systems testing technician) are captured under the sciences (other) designation. Other occupations captured under the 'sciences (other)' designation are engineering technicians. The 'engineer' category is limited to those working the higher-skilled positions

beginning with ‘C03’ (i.e., civil engineer (NOCS code: C031); chemical engineer (NOCS code: C034)). Due to the small number of doctors and nurses in the study, all professional-level health positions are classified as ‘health (university required)’ jobs. Collapsing these positions together is warranted given the rigorous credential recognition process faced by all foreign-trained health professionals (Boyd & Schellenberg, 2007). 3. *Demographic variables* (gender and ethno-racial status). Since Chinese, South Asian, Filipino and Eastern European immigrants are well-represented in the sample, these four groups are considered alongside the general categories of white or non-white immigrants with or without western credentials. Those identifying as Chinese, South Asian or Filipino must also self-identify as non-white whereas Eastern European immigrants must self-identify as white. To address possible discrepancies with respect to credential location, only self-identifying Chinese immigrants with Chinese credentials are captured within the ‘Chinese’ category. The same goes for South Asian, Filipino and Eastern European groupings. A person who identifies as Chinese, however holds a credential from the United States or any other western country, is combined with other ‘non-whites with western credentials’. Western credentials are those credentials earned from: the United States, Western Europe, Northern Europe or Oceania. Also, since labour market success is heavily contingent upon local labour market demands (Heisz, LaRochelle-Côté, Bordt & Das, 2005; Schellenberg, 2004), the Census Metropolitan Area (CMA) of settlement is also controlled for in the present study. A complete list of the independent variables along with their coding structures is outlined in Table 3-1.

Table 3-1: Study variables and coding key

Variable	Level of Measurement	Variable description
Dependent variable		
Occupational status recovery	Dichotomous	0 = Has not achieved occupational status recovery 1 = Has achieved occupational status recovery
Time since migration		
Months	Scale	Number of months since entering Canada
Months^2	Scale	Months^2
Human capital variables		
Age		
18-29 years (Reference category)	Dichotomous	0 = Otherwise 1 = 18 to <30 years
30-39 years	Dichotomous	0 = Otherwise 1 = 30 to <40 years
40-49 years	Dichotomous	0 = Otherwise 1 = 40 to <50 years
50-65 years	Dichotomous	0 = Otherwise 1 = 50-65 years.
Language Fluency	Scale	Continuous (0.00-1.00)
Language Fluency		
High level of fluency (Reference category)	Dichotomous	0 = Otherwise 1 = ≥ 0.84
Low level of fluency	Dichotomous	0 = Otherwise 1 = 0.00 - <0.675
Mid-level of fluency	Dichotomous	0 = Otherwise 1 = ≥ 0.675 - <0.84
Level of Education		
Bachelor's degree (Reference category)	Dichotomous	0 = Otherwise 1 = Holds a foreign bachelor's degree
High school or less	Dichotomous	0 = Otherwise 1 = Holds at most a foreign high school diploma
College or Trades	Dichotomous	0 = Otherwise 1 = Holds a foreign college diploma or trades certificate
Master's degree	Dichotomous	0 = Otherwise 1 = Holds a foreign master's degree
Doctorate	Dichotomous	0 = Otherwise 1 = Holds a foreign doctorate
Immigrant characteristics		
Female	Dichotomous	0 = Male 1 = Female
Arranged employment	Dichotomous	0 = Otherwise 1 = Arranged employment prior to migrating
Principal applicant	Dichotomous	0 = Otherwise 1 = Principal applicant to one of Canada's economic immigration programs
Settlement CMA		
Toronto (Reference category)	Dichotomous	0 = Otherwise 1 = Lives in Toronto

Table 3-1: *Continued*

Variable	Level of Measurement	Variable description
Montréal	Dichotomous	0 = Otherwise 1 = Lives in Montréal
Vancouver	Dichotomous	0 = Otherwise 1 = Lives in Vancouver
Other CMA	Dichotomous	0 = Otherwise 1 = Lives in a CMA other than Toronto, Montréal or Vancouver
Ethno-racial groups		
White with western credentials (Reference category)	Dichotomous	0 = Otherwise 1 = Self-Identifies as white with a western credential
Chinese	Dichotomous	0 = Otherwise 1 = Self-Identifies as ethnically Chinese and highest credential is from the People's Republic of China
South Asian	Dichotomous	0 = Otherwise 1 = Self-Identifies as South Asian and highest credential is from India, Pakistan, Bangladesh, Sri Lanka or other South Asian country
Filipino	Dichotomous	0 = Otherwise 1 = Self-Identifies as Filipino and highest credential is from the Philippines
Eastern European	Dichotomous	0 = Otherwise 1 = Self-Identifies as white, Eastern European and highest credential is from Romania, Russia, Ukraine, or other Eastern European country
White with non-western credentials	Dichotomous	0 = Otherwise 1 = Self-Identifies as white and highest credential is from a non-western country. Excludes those captured in the Eastern European category
Non-white with western credentials	Dichotomous	0 = Otherwise 1 = Self-Identifies as non-white with a western credential
Non-white with non-western credentials	Dichotomous	0 = Otherwise 1 = Self-identifies as non-white with a credential from a non-western country (excludes those captured in the Chinese, South Asian or Filipino categories)
Pre-migration occupation		
IT professional (Reference category)	Dichotomous	0 = Otherwise 1 = IT professional (includes IT managers)
Engineer	Dichotomous	0 = Otherwise 1 = Engineer (includes engineering managers)
Sciences (Other)	Dichotomous	0 = Otherwise 1 = Sciences (excludes engineers and IT professionals)
Finance (Skill level A)	Dichotomous	0 = Otherwise 1 = Finance job requiring a university education

Table 3-1: *Continued*

Variable	Level of Measurement	Variable description
Finance (Other)	Dichotomous	0 = Otherwise 1 = Finance job that does not require a university education
Health (Skill level A)	Dichotomous	0 = Otherwise 1 = Health job requiring a university education
Health (Skill level B or C)	Dichotomous	0 = Otherwise 1 = Health job that does not require a university education
Teacher (Primary/Secondary)	Dichotomous	0 = Otherwise 1 = Elementary or secondary school teacher
Professor	Dichotomous	0 = Otherwise 1 = College or university professor
Social Sciences (Other)	Dichotomous	0 = Otherwise 1 = Social sciences (excludes teachers and professors)
Arts	Dichotomous	0 = Otherwise 1 = Pre-migration occupation: occupation in the arts
Sales or Service	Dichotomous	0 = Otherwise 1 = Pre-migration occupation: sales or service
Trades	Dichotomous	0 = Otherwise 1 = Pre-migration occupation: trades
Industry	Dichotomous	0 = Otherwise 1 = Pre-migration occupation: industry
Manufacturing	Dichotomous	0 = Otherwise 1 = Pre-migration occupation: manufacturing

Dependent Variable

The dependent variable under investigation is occupational status recovery. To create this variable, the occupational status of the pre-migration job was subtracted from the post-migration job for each month since migration to reveal either a (+) or (-) difference. A negative score denotes a downwardly mobile immigrant (i.e., the job worked in Canada is lower in status than the pre-migration job) while someone who secures a job commensurate in status or higher to that held pre-migration will score a zero or a positive value. To ease interpretability, each occupational status difference score was transformed from a continuous variable into a dummy variable with two possible occupational states:

a score of 0 relates to a person who is working a job lower in status than that worked prior to migration, while a score of 1 corresponds to a person working a job equal to or higher in status than the job worked prior to migration (i.e., occupational status recovery).

Although the LSIC does not incorporate a measure of either pre- or post-migration occupational status, this measure is easily constructed by transforming the Standard Occupational Classification (SOC) codes of the jobs worked by respondents both pre and post-migration into National Occupational Classification for Statistics (NOCS) codes with the aid of a Statistics Canada concordance table. NOCS codes are then compared against the Boyd-NP socioeconomic scale (Boyd, 2008) which assigns a status score, ranging from 0-100, to each of the 520 NOCS unit groups. The minimum score of 0 denotes the lowest status job possible (i.e., 'hunting and trapping') while general practitioners and specialist physicians earn the maximum score of 100.

Analytical technique

Given the longitudinal nature of the dataset as well as the coarse measurement of time (i.e., months) between observations, the current study employs discrete-time survival analysis (Allison, 1982). Survival analysis is advantageous over conventional regression procedures as it is able to handle censored data as well as time-varying explanatory variables (Allison, 1982). Although censored data is not an issue in the present analysis since the start time is time of entry to Canada and only immigrants who completed all three interviews are made available in the LSIC Wave 3 file, the ability to handle time-

varying explanatory variables is necessary. In the present analysis the following variables are time-varying: age, language proficiency, CMA of residence, marital status, and occupational status. All other study variables are tombstone, or fixed, in that they do not change with time (e.g., sex of respondent, ethno-racial group, principal applicant status). Survival analysis is calculated on the premise that the event of interest, in this case occupational status recovery, has not yet occurred. This means that upon event completion, respondents are dropped from further analysis. Each respondent is able to contribute at minimum 1 observational record and at maximum 48 observational records. The final sample size after deleting records following an event completion is 103,782 person-months.

As mentioned previously, the dependent variable is dichotomized to represent two employment states. For each month in Canada, a respondent is coded as either working a job lower in status than that worked pre-migration (code=0) or, working a job equal to or higher in status than that worked prior to migration (code=1; event completion). The binary nature of the dependent variable and the multiple observation points are accounted for by the following survival model equation (Xie, McHugo, Drake & Sengupta, 2003):

$$\text{logit}_e(h) = (\alpha_1 t_1 + \alpha_2 t_2 + \ldots + \alpha_{48} t_{48}) + b_1 \text{HumCap} + b_2 \text{Occ} + b_3 \text{Dem}$$

where,

t =	a sequence of dummy variables indexing individual time periods (i.e., 1-48 months)
α =	multiple intercepts, one per time period
b =	slope parameters
HumCap =	a vector of human capital and general labour market characteristics
Occ =	a vector of pre-migration occupations
Dem =	a vector of demographic variables

Results

Occupational status clustering of highly skilled immigrants

Engineering and working as an IT professional were reported by respondents as the most common pre-migration job (21.2% and 12.6% respectively). Jobs requiring lower levels of education, such as manufacturing (2.6%) and industry (2.8%) jobs were the least reported (Table 3-2). As mentioned earlier, the underemployment of immigrants may be due to industry-specific labour demand (Picot & Hou, 2009). Accordingly, downturns in the engineering or IT professions would have an especially detrimental effect on this group of immigrants given the large proportion of these professionals in the sample.

Although one in five respondents report working as an engineer before migrating to Canada, it is important to determine whether all ethno-racial groups report similar occupational profiles as group differences may merely reflect differences in industry-specific labour demands (Picot & Hou, 2009). Additionally, group performance will also differ depending on whether groups cluster dissimilarly in regulated versus unregulated occupations as applicant suitability is not wholly determined by the employer in regulated occupations (Zietsma, 2010).

Table 3-3 reveals the most commonly reported pre-migration occupations for each ethno-racial group. Although engineering and IT jobs are reported by most of the immigrant groups as the two most commonly held jobs before migration, for some of the ethno-racial groups these two jobs constitute a greater

Table 3-2: Pre-migration occupations reported by study respondents

Pre-migration occupation	NOC skill level	Percentage of highly skilled immigrants
Engineering	A	21.2%
IT professional	A	12.6%
Sales and Service	B, C, D	9.9%
Finance	B, C	8.6%
Finance	A	8.1%
Sciences	A, B	6.5%
Teacher	A	5.9%
Trades	B	4.9%
Health	A	4.5%
Professor	A	4.4%
Social Sciences	B, C, D	3.4%
Arts	B, C, D	3.0%
Industry	B, C, D	2.8%
Manufacturing	B, C, D	2.6%
Health (Skill level B/C)	B, C	1.6%

Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: Percentages reported in descending order from most frequently reported by study respondents to least reported. Jobs are categorized by the National Occupational Classification (NOC) system according to the following schema: *Skill level A*: jobs that require a university education; *Skill level B*: jobs that require college education or apprenticeship training; *Skill level C*: jobs requiring a secondary school and/or occupation-specific training; *Skill level D*: jobs requiring on-the-job training (no educational requirements).

proportion of total membership. For example, more than 55% of Chinese immigrants report working as an engineer (40.9%) or as an IT professional (14.8%) prior to migration, while only 18.8% of white immigrants with western credentials report the same. Instead, the latter group more commonly reports working 'sales and service' jobs (16.0%). Keeping these group differences in mind is important as some immigrant groups (i.e., Chinese, Eastern European and white immigrants with non-western credentials) will be more adversely affected if labour demand is particularly poor for engineers or IT professionals. Moreover, the clustering of white immigrants with western credentials and non-white immigrants with non-western credentials in 'sales and service' jobs (16.0% and

Table 3-3: Most commonly reported pre-migration occupations by highly skilled immigrants

Immigrant group	Credential Source	Most commonly reported occupation	% of group members	Second most commonly reported occupation	% of group members
Chinese	China (PRC)	Engineer	40.9%	IT Professional	14.8%
South Asian	South Asia	Engineer	15.5%	IT Professional	12.1%
Filipino	Philippines	Finance (Skill-level A)	17.4%	Finance (Skill level B/C)	14.3%
Eastern European	Eastern Europe	Engineer	27.0%	IT Professional	14.7%
White (other)	Western credentials	Sales or Service	16.0%	Engineer	9.9%
Non-White (other)	Western credentials	IT Professional	16.2%	Engineer	14.0%
White (other)	Non-western credentials	Engineer	17.9%	IT Professional	15.0%
Non-White (other)	Non-western credentials	Engineer	14.8%	Sales or Service	11.6%

Source: Longitudinal Survey of Immigrants to Canada, 2005

Note: Occupation groups denoting a skill-level are categorized according to the National Occupational Classification (NOC) system. Skill level A: university education; Skill level B: college education or apprenticeship training; Skill level C: secondary school and/or occupation-specific training; Skill level D: on-the-job training (no educational requirements)

11.6% respectively) may serve these groups favourably given the unregulated nature of these occupations.

Question #1: Are the occupational status recovery odds at time of entry and after four years similar for immigrants who belong to different ethno-racial groups?

Part 1: Occupational status outcomes at time of entry to Canada

The first study question asks whether the process of migration impacts some ethno-racial groups more negatively than others. Before testing group differences with a statistical model, the lived experiences of these groups are first investigated. Regardless of explanations for the underperformance of some groups, it is important to uncover the ordering of these groups in terms of the magnitude of their status drop (i.e., who fell the most) as well as the average status score for the first job worked in Canada (i.e., who holds the lowest status job in Canada).

Table 3-4 reports the pre-migration occupational status, the status of the first job in Canada, the actual drop in status due to migration as well as the proportional drop in status (actual drop divided by the pre-migration score) for each immigrant group. Overall, white immigrants outperform non-white immigrants. For example, even though white immigrants with western credentials report a lower pre-migration occupational status compared to non-white immigrants with western credentials (71.5 and 79.3 respectively), their first jobs in Canada are higher in status than those secured by non-white immigrants with western credentials (65.0 and 60.9 respectively) resulting in a 9.1% proportional drop in status for the former and a 23.2% proportional drop for the latter. White

Table 3-4: Occupational status scores for the pre-migration job and first job in Canada

	Credential source	Sample Size	Pre-migration job [95% C.I.]	First job in Canada [95% C.I.]	Change in Status	Proportional drop in status
Chinese	People's Republic of China	580	84.2 [83.0, 85.5]	48.0 [45.8, 50.3]	-36.2	43.0%
Eastern European	Eastern Europe	330	80.1 [78.2, 82.1]	52.1 [49.4, 54.9]	-28.0	35.0%
White (other)	Non-Western credentials	300	80.0 [78.1, 81.8]	54.4 [51.5, 57.3]	-25.6	32.0%
Non-white (other)	Western credentials	150	79.3 [76.6, 81.9]	60.9 [57.0, 65.0]	-18.4	23.2%
South Asian	South Asia	560	78.4 [77.0, 79.9]	47.5 [45.5, 49.5]	-30.9	39.4%
Non-white (other)	Non-Western credentials	630	77.4 [76.0, 78.7]	49.6 [47.7, 51.6]	-27.8	35.9%
Filipino	Philippines	230	76.1 [73.9, 78.4]	43.9 [40.8, 47.0]	-32.2	42.3%
White (other)	Western credentials	260	71.5 [68.9, 74.1]	65.0 [62.0, 68.1]	-6.5	9.1%

Source: Longitudinal Survey of Immigrants to Canada, 2005

Note: Occupational status scores were calculated using the Boyd-NP socioeconomic scale (Boyd, 2008). The Boyd-NP scale assigns each of the 520 occupations listed by the National Occupational Classification a status score ranging from 0 (lowest status) to 100 (highest status). Ethno-racial groups are ordered in descending order of pre-migration occupational status. Proportional drop in status is calculated by dividing the change in status by the occupational status score for the pre-migration job.

Note: Sample sizes denote the number of people within each category (not person/months as in the case for survival models and predicted probability estimates). To ensure anonymity, all sample sizes have been rounded according to LSIC guidelines.

immigrants with western credentials report the lowest actual and proportional drops in status compared to any other group.

Similarly, ethno-racial background appears central to the ordering of immigrants holding non-western credentials. Eastern European immigrants with credentials from Eastern Europe as well as 'other' white immigrants with non-western credentials report higher status first jobs in Canada as well as lower actual and proportional drops in status than all other non-western credential holding immigrants. Chinese immigrants on the other hand report the largest actual drop in status as well as the largest proportional drop in status. Consulting the Boyd-NP occupational status scale (Boyd, 2008), the downward shift in occupational status experienced by Chinese immigrants is equivalent to a foreign-trained "health policy researcher" (84 points) working in Canada as a "filing clerk" (48 points). Although larger declines in status relate to larger drops in income and most often associated prestige, it is also important to consider the status score of the first job in Canada regardless of pre-migration status. When highly skilled immigrants do experience employment barriers it is important to determine whether some immigrants work lower status jobs than others. Table 3-4 shows that the first Canadian job secured by Filipinos is on average lower in status than those secured by other immigrant groups (43.9 points). A job reflective of the average first job in Canada for Filipino immigrants is that of an "electronic assembler" (44 points). The group differences presented in Table 3-4 do not take into consideration human capital or labour market differences between groups. Thus, it is possible that the higher performance of some groups (e.g., Eastern

European immigrants) relative to others (e.g., Chinese, South Asian and Filipino immigrants) merely reflects differences in valuable skills necessary for the economic assimilation of immigrants. Likewise, some immigrant groups may be clustered in occupations that have more favourable labour demands. Table 3-5 considers ethno-racial group differences in the odds of occupational status recovery (i.e., securing a job equal in status to that worked prior to migration) while controlling for a collection of human capital and labour market characteristics.

Despite accounting for a host of background variables, occupational status recovery for highly skilled immigrants in Canada appears to be linked to ethno-racial background (Table 3-5). Eastern European immigrants, Chinese immigrants, as well as whites who hold non-western credentials do not demonstrate significantly different odds of occupational status recovery when compared to white immigrants with western credentials (the reference category). This contrasts with the outcomes of South Asian and Filipino immigrants as well as 'other' non-whites with non-western credentials who all report significantly lower odds of status recovery when compared to whites with western credentials (OR=0.55 ($p \leq 0.001$), OR=0.47 ($p \leq 0.001$) and, OR=0.63 ($p \leq 0.001$) respectively). Consistent with the credentials appear to have a labour market advantage over non-whites with non-western credentials, a trend that supports arguments of white privilege (Creese, 2009).

Interestingly, Chinese immigrants do not emerge significantly disadvantaged relative to the reference group. However, this finding may be a

Table 3-5: Odds ratios of occupational status recovery

	Odds Ratios
	n = 103,782 (person/months)
Time in Canada	
Months	0.84 ***
Months^2	1.00 ***
Human Capital Factors	
Age *(Reference: 18-29 years)*	
30-39 years	0.89 *(n.s.)*
40-49 years	0.73 ***
≥ 50 years	0.90 *(n.s.)*
Fluency with French or English	6.05 ***
Level of Education *(Reference: Bachelor degree)*	
High School Diploma or less	1.09 *(n.s.)*
College or Trades Diploma	0.89 *(n.s.)*
Graduate Degree	1.29 ***
Arranged employment pre-migration	3.69 ***
Principal applicant	1.01 *(n.s.)*
CMA of residence *(Reference: Toronto)*	
Montréal	0.91 *(n.s.)*
Vancouver	1.01 *(n.s.)*
Other CMA	1.22 *
Demographic variables	
Female	0.72 ***
Ethno-racial groups *(Reference: White immigrant with western credentials)*	
Chinese	0.75 *(n.s.)*
South Asian	0.55 ***
Filipino	0.47 ***
Eastern European	0.91 *(n.s.)*
White (other) with non-western credentials	0.88 *(n.s.)*
Non-white (other) with western credentials	0.77 *(n.s.)*
Non-white (other) with non-western credentials	0.63 ***
Occupations/Occupation Groups *(Reference: IT professional)*	
Engineer	0.24 ***
Sciences (with the exception of engineers and IT professionals)	0.52 ***
Finance (Skill level A)	0.38 ***
Finance (Skill level B or C)	0.90 *(n.s.)*
Health (Skill level A)	0.37 ***
Health (Skill level B or C)	0.51 *(n.s.)*
Teacher (Primary school or secondary school)	0.31 ***
Professor	0.34 ***
Social Sciences (with the exception of teachers and professors)	0.47 **
Arts	0.74 *
Sales or Service	0.75 *(n.s.)*
Trades	0.81 *(n.s.)*
Industry	0.78 *(n.s.)*
Manufacturing	0.92 *(n.s.)*

Source: Longitudinal Survey of Immigrants to Canada, 2005

*p ≤ 0.05 **p ≤ 0.01 ***p ≤ 0.001

Note: Occupation groups denoting a skill-level are categorized according to the National Occupational Classification (NOC) system. Skill level A: university education; Skill level B: college education or apprenticeship training; Skill level C: secondary school and/or occupation-specific training. Standard error estimates calculated using 500 bootstrap weights

consequence of the clustering of highly skilled Chinese immigrants within the engineering profession (see Table 3-3). Due to the highly regulated nature of this occupation, it is possible that a Chinese disadvantage disappears once occupational controls are entered into the model. Given this possibility, another survival analysis was run, this time excluding occupational controls.[3-4] When occupational controls are excluded Chinese immigrants emerge as significantly disadvantaged. Specifically, the odds ratio of occupational status recovery when Chinese immigrants are compared to white immigrants with western credentials is 0.628 ($p \leq 0.001$). Thus, it appears that the disadvantage faced by Chinese immigrants is a result of institutional barriers, most likely within the engineering discipline.

Table 3-5 also reveals interesting results regarding regulated versus unregulated occupations. When compared to immigrants who worked as IT professionals prior to migrating, those working as engineers, high-skill health workers (e.g., doctors, nurses, pharmacists, occupational therapists), and teachers significantly underperform with engineers reporting the lowest odds of finding post-migration work commensurate in status to that worked prior to migration ($OR=0.24$, $p \leq 0.001$). Immigrants working high-skilled health jobs before migrating to Canada also report dismal recovery rates ($OR=0.37$, $p \leq 0.001$), as do foreign-trained elementary and secondary school teachers ($OR=0.31$, $p \leq 0.001$).

[3-4] Results from this second survival model are presented in Appendix 3-1.

Part 2: Occupational status outcomes given time in Canada ("the first four years")

Thus far, we have assessed the immediate impact of migration to Canada on immigrant occupational status. Although we have noted the relative disadvantage of non-whites to whites upon arrival in Canada, it is important to assess how these groups fare by study end. Table 3-6 reveals the percentage of members within each group who report occupational status recovery by the end of the 48th month in Canada. Similar to trends noted in Table 3-4, immigrants with western credentials appear to fare the best given time in Canada. Approximately 67% of white immigrants and 51% of non-white immigrants with western credentials report occupational status recovery by the end of the fourth year in Canada. Turning to those with non-western credentials, Eastern European immigrants report the highest recovery percentage (40.5%) followed by 'other' white immigrants with non-western credentials (40.1%), South Asian immigrants (36.9%), 'other' non-white immigrants with non-western credentials (34.4%), Filipino immigrants (29.9%) and lastly, Chinese immigrants (27.5%).

As already noted when discussing Table 3-4, the underperformance of Chinese immigrants over time relative to all other groups may be a result of their higher starting position due to the clustering of this group within the engineering profession (the status scores of engineers ranges from a low of 93 to a high of 96 out of a possible 100 points). With over 40% of the Chinese sample reporting engineering as a pre-migration job, Chinese immigrants may be impacted by the credential recognition difficulties within this profession. Then again, Chinese immigrants may be hindered by less competitive human capital profiles.

Table 3-6: Percentage of each immigrant group reporting occupational status recovery by the end of the fourth year in Canada

Immigrant group	Sample Size	Percentage who report occupational status recovery
White immigrants with western credentials	260	66.8%
Non-white immigrants with western credentials	150	50.9%
Eastern European immigrants	330	40.5%
Other white immigrants with non-western credentials	300	40.1%
South Asian immigrants	560	36.9%
Other non-white immigrants with non-western credentials	630	34.4%
Filipino immigrants	230	29.9%
Chinese immigrants	580	27.5%

Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: Sample sizes denote the number of people within each category (not person/months as in the case for survival models and predicted probability estimates). To ensure anonymity, all sample sizes have been rounded according to LSIC guidelines.

To address these possibilities, a series of cumulative predicted probabilities was conducted while holding human capital and occupational variables constant. The results of these predicted probabilities are displayed in Table 3-7.

When cumulative predicted probabilities are calculated while controlling for human capital and labour market factors, three statistically significant groups appear.[3-5] White immigrants with western credentials emerge as the highest performing group (Block 1). By the end of the fourth year in Canada, 61.2% of white immigrants with western credentials are predicted to achieve occupational status recovery. Despite holding western credentials, non-white immigrants underperform relative to their white peers. The labour market outcomes of these immigrants are similar to the outcomes for white immigrants with non-western

[3-5] Significance is determined by comparing confidence interval ranges between groups. Predicted probability differences between groups are statistically significant if 95% confidence intervals do not overlap.

Table 3-7: Cumulative probabilities of occupational status recovery by the end of the fourth year in Canada

Block	Immigrant group	Credential Source	Cumulative Predicted Probability [95% C.I.]
1	White (other)	Western credentials	0.612 [0.587, 0.637]
2	Non-white (other)	Western credentials	0.496 [0.468, 0.523]
	White (other)	Non-western credentials	0.493 [0.467, 0.519]
	Eastern European	Eastern Europe	0.471 [0.445, 0.496]
3	Non-white (other)	Non-western credentials	0.392 [0.368, 0.416]
	South Asian	South Asia	0.388 [0.364, 0.412]
	Chinese	China	0.377 [0.353, 0.401]
	Filipino	Philippines	0.370 [0.344, 0.395]

Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: A cumulative probability of occupational status recovery is defined as the additive probability of occupational status recovery given a particular length of time since arrival in Canada; in this case, the probability of achieving occupational status recovery by study-end (48th month in Canada). Cumulative predicted probabilities were calculated while controlling for: gender; age; language proficiency; level of education; principal applicant status; whether employment was arranged prior to migration; whether a credential was earned in a western country; CMA of residence; and pre-migration occupation. With the exception of gender and ethnicity, probability estimates were calculated holding control variables to their mean value.

credentials. Approximately half of Block 2 members will experience occupational status recovery by the end of the fourth year in Canada. The third block captures those immigrants with the poorest probabilities of occupational status recovery. All of the immigrants in this block are non-white and hold non-western credentials. When compared to all other ethno-racial groups, Filipino immigrants report the lowest probability of recovery (37.0%). The ordering of these groups suggests that the economic success of immigrants in Canada is racially dependent. Even though western credentials are felt to act as a buffer against discrimination for non-white immigrants (Dietz et al., 2009), the results in Table 3-7 reveal ethno-racial status to be a more salient indicator of success. These findings instead support Oreopoulos' (2009) work which shows that even when both groups hold equivalent skill-sets white job seekers will outperform non-white job seekers.

Question #2: Are there ethno-racial group differences in occupational status recovery odds when the outcomes of engineers (i.e., those working in a regulated profession) and IT professionals (i.e., those working in an unregulated profession) are considered?

Together, engineers and IT professionals account for one-third (33.8%) of the highly skilled immigrants under study. As reviewed earlier in this chapter, engineering is a highly regulated profession in Canada and all engineers must meet provincial and association requirements. Standards within the IT profession on the other hand are not governed by a regulatory board. Thus, decisions about immigrant quality within the IT industry are assessed on an individual basis. A comparison of immigrant outcomes within these two professions may elucidate whether immigrants are treated similarly within regulated and unregulated professions or whether "judgment calls" about immigrant suitability are evident.

According to Table 3-8, important predictors of occupational status recovery for immigrant engineers are: time in Canada, language proficiency, having a graduate degree, arranging employment prior to migration and CMA of residence. For the most part, the same predictors are telling of occupational status recovery for IT professionals. However, the economic success of IT professionals also appears to be dependent upon an immigrant's ethno-racial background. Despite controlling for a host of background factors, Eastern European IT professionals and 'other' white IT professionals with non-western credentials perform the same as white immigrants with western credentials (the reference category) while Chinese, South Asian, Filipino, and 'other' non-white IT professionals with non-western credentials significantly under-perform relative to white immigrants with western credentials. Contrary to the belief that western

Table 3-8: Odds ratios of occupational status recovery for engineers and IT professionals

	Odds Ratios Engineers n = 24,485	**Odds Ratios** IT Professionals n = 9,617
Time in Canada		
Months	0.78 ***	0.84 ***
Months^2	1.00 ***	1.00 ***
Human Capital Factors		
Age *(Reference: 18-29 years)*		
30-39 years	0.64 (*n.s.)*	0.90 (*n.s.)*
40-49 years	0.51 (*n.s.)*	0.90 (*n.s.)*
≥ 50 years	0.54 (*n.s.)*	1.10 (*n.s.)*
Proficiency with French or English *(Reference: High level of language proficiency)*		
Low level of language proficiency	0.24 ***	0.18 ***
Moderate level of language proficiency	0.66 *(n.s.)*	0.46 ***
Level of Education *(Reference: Bachelor degree)*		
High school or less		1.27 (*n.s.)*
College or Trades Diploma	1.62 (*n.s.)*	0.49 (*n.s.)*
Graduate Degree	1.74 **	1.15 (*n.s.)*
Arranged employment pre-migration	3.18 ***	
Principal applicant	0.90 (*n.s.)*	1.06 (*n.s.)*
CMA of residence *(Reference: Toronto)*		
Montréal	2.65 ***	0.36 ***
Vancouver	1.93 (*n.s.)*	0.67 (*n.s.)*
Other CMA	1.64 (*n.s.)*	0.95 (*n.s.)*
Demographic variables		
Female	0.65 (*n.s.)*	0.74 (*n.s.)*
Ethno-racial groups *(Reference: White immigrant with western credentials)*		
Chinese	2.01 (*n.s.)*	0.29 **
South Asian	1.42 (*n.s.)*	0.13 ***
Filipino	0.57 (*n.s.)*	0.10 ***
Eastern European	2.02 (*n.s.)*	0.51 (*n.s.)*
White (other) with non-western credentials	1.88 (*n.s.)*	0.43 (*n.s.)*
Non-white (other) with western credentials	1.74 (*n.s.)*	0.25 ***
Non-white (other) with non-western credentials	1.30 (*n.s.)*	0.25 **

Source: Longitudinal Survey of Immigrants to Canada, 2005

*p ≤ 0.05 **p ≤ 0.01 ***p ≤ 0.001

Note: Occupation groups denoting a skill-level are categorized according to the National Occupational Classification (NOC) system. Skill level A: university education; Skill level B: college education or apprenticeship training; Skill level C: secondary school and/or occupation-specific training; Skill level D: on-the-job training (no educational requirements). Due to the negatively skewed nature of the language fluency variable, a categorical variable was constructed. Low level: 0-<0.675; Mid-level: ≥.675-<0.84; High level: ≥0.84. Since a very small number of IT professionals arranged employment prior to migrating, this variable was dropped from the model. Standard error estimates calculated using 500 bootstrap weights

credentials shield visible minorities from discrimination (Dietz et al., 2009), non-white IT professionals *with* western credentials significantly under-perform relative to their white counterparts with western credentials and even under-perform when compared to whites with non-western credentials. These results suggest that hiring decisions within the IT industry disproportionately benefit white immigrants.

Discussion

Using a series of survival models and predicted probabilities, this chapter demonstrates that even when human capital, pre-migration occupation and other demographic factors are accounted for, white immigrants consistently report higher odds of occupational status recovery compared to non-white immigrants. By the end of the fourth year in Canada, white immigrants with non-western credentials (including white immigrants with credentials from Eastern Europe) show superior probabilities of occupational status recovery when compared to non-white immigrants with non-western credentials (Chinese, South Asian and Filipino immigrants with credentials from the People's Republic of China, South Asia, and the Philippines). Further, the likelihood of occupational status recovery for different ethno-racial groups is shown to be occupationally-specific. This chapter argues that dissimilar to regulated professions, employers within unregulated professions lack state or professional guidance when assessing the merits of foreign credentials and work experience. As such, assessments of foreign human capital vis-à-vis a person's ethno-racial affiliation are more

probable in unregulated professions. Dissimilar to the overarching "immigrant effect" experienced by foreign-trained engineers, the ethno-racial background of immigrant IT professionals impacts the odds of occupational status recovery following migration to Canada. Regardless of credential source area, white immigrant IT professionals report higher odds of occupational status recovery when compared to non-white immigrants. Further, white immigrants with non-western credentials outperform non-white immigrants with western credentials. This latter finding challenges the assumption that western credentials shield non-white immigrants from discrimination (Dietz et al., 2009)

Whilst these findings do suggest that the economic mobility of non-white immigrants is negatively impacted by discrimination in the Canadian labour market, it is possible that the poor outcomes of Chinese, South Asian and Filipino immigrants merely reflect the consequence of reliance on ethnic social capital (Li, 1977; 2004; Li & Dong, 2007; Wilson & Portes, 1980; Reitz & Sklar, 1997; Sanders & Nee, 1987). With over 60% of recent immigrants citing friends and family as sources of employment information (Chui & Tran, 2003), ethno-racial inequalities must be explored within the context of ethnic social capital/ethnic economies. Although ethnic social networks provide members the ability to locate immediate employment opportunities, options are often limited to niches dominated by co-ethnics (Hou & Picot, 2003). Once engaged in ethnic niches, economic mobility may become limited as members are isolated from mainstream economic opportunities (Reitz & Sklar, 1997). Even when employment opportunities outside of the ethnic enclave become known, members may be

discouraged from pursuing opportunities due to expectations of group loyalty (Li, 1977).

Policy Implications

Ethno-racial differences aside, this study demonstrates that immigrants working in regulated fields are at a disadvantage when compared to immigrants working in unregulated fields. Acknowledging the difficulties faced by foreign-trained engineers, teachers, accountants and health care professionals, Canadian provinces are working with communities to develop bridging programs for regulated occupations. In 1997, the Edmonton Mennonite Centre for Newcomers introduced an engineering technologist bridging program in partnership with the Northern Alberta Institute of Technology (NAIT) and the Association of Science and Engineering Technology Professionals of Alberta (ASET). This ten-month program allows immigrant engineers to gain industry experience in Canada and to refine job-specific language skills, major stumbling blocks for the establishment of foreign engineers post-migration. Programs such as this not only allow foreign-trained professionals to gradually establish themselves, they also prevent unnecessary deskilling (Man, 2004). Furthermore, bridging programs may mitigate the psychological trauma associated with substantial underemployment (Asanin Dean & Wilson, 2009) as immigrants are able to work in the same field in Canada that they worked prior to migration. The results of this study support the continued development of professional bridging programs.

However, solely concentrating efforts on regulated professions is myopic as inequalities in unregulated professions, such as those in the IT industry, are left unchecked. The results of this study suggest that assessments of foreign-trained IT professionals may be influenced by the ethno-racial background of an applicant. Thus, it is recommended that a standardized assessment of foreign IT credentials be conducted to better aid hiring decisions in this field. Developing bridging programs between academic institutions and employers of IT professionals may also address some of the inequalities noted within this chapter.

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Appendix 3-1: Odds ratios of occupational status recovery

	Odds Ratios
	n = 103,782
Time in Canada	
Months	0.84 ***
Months^2	1.00 ***
Human Capital Factors	
Age *(Reference: 18-29 years)*	
30-39 years	0.78 *
40-49 years	0.61 ***
≥ 50 years	0.56 *
Fluency with French or English	5.52 ***
Level of Education *(Reference: Bachelor degree)*	
High School Diploma or less	1.51 **
College or Trades Diploma	1.10 *(n.s.)*
Graduate Degree	1.18 *
Arranged employment pre-migration	3.28 ***
Principal applicant	0.97 *(n.s.)*
CMA of residence *(Reference: Toronto)*	
Montréal	1.00 *(n.s.)*
Vancouver	1.01 *(n.s.)*
Other CMA	1.13 *(n.s.)*
Demographic variables	
Female	0.75 ***
Ethno-racial groups *(Reference: White immigrant with western credentials)*	
Chinese	0.65 **
South Asian	0.57 ***
Filipino	0.48 ***
Eastern European	0.91 *(n.s.)*
White (other) with non-western credentials	0.76 *(n.s.)*
Non-white (other) with western credentials	0.83 *(n.s.)*
Non-white (other) with non-western credentials	0.64 ***

Source: Longitudinal Survey of Immigrants to Canada, 2005

*p ≤ 0.05 **p ≤ 0.01 ***p ≤ 0.001

Note: Occupation groups denoting a skill-level are categorized according to the National Occupational Classification (NOC) system. Skill level A: university education; Skill level B: college education or apprenticeship training; Skill level C: secondary school and/or occupation-specific training. Standard error estimates calculated using 500 bootstrap weights

Chapter 4
Pink collars and the baby blues: Gendering the occupational status recovery of highly skilled immigrants in Canada

Introduction

It is well-established that immigrant men routinely outperform immigrant women in host society labour markets (Beach & Worswick, 1993; Boyd, 1984; Li, 2000). Canadian immigrant women demonstrate higher rates of underemployment[4-1] (Galarneau & Morissette, 2004; 2008; Schellenberg, 2004) and unemployment (Badets & Howatson-Leo, 1999) as well as depressed earnings (Beach & Worswick, 1993; Li, 2000) when compared to immigrant men. These trends parallel those in other countries as immigrant women in the United States (De Jong & Madamba, 2001; Le & Miller, 2010) and Norway (Hayfron, 2002) report depreciated returns to foreign human capital when contrasted against their male counterparts.

Even though the underperformance of immigrant women relative to men is a well-documented phenomenon, very few empirical projects attempt to model why this disadvantage transpires; a reality perhaps born out of the androcentric history of migration studies (Pessar, 1999). Using what Boyd and Grieco (2003) call an "add women, mix and stir" or the "gender as a variable" technique, empirical studies tend to limit statistical models to the inclusion of a female dummy variable, a technique critiqued decades ago for its shortsightedness in uncovering gendered experiences of life (Stacey & Thorne, 1985). The

[4-1] Underemployment is defined as those who possess university credentials, yet are working a job that requires at most a high school education (Galarneau & Morisette, 2004).

identification of social processes impeding the economic performance of immigrant women is critical, given the feminization of Canada's skilled workers program. In 2008, women comprised 34% of principal applicants, up from 25% in 1999.[4-2]

Qualitative accounts of immigrant life post-migration, as well as studies of the non-immigrant population reveal that labour within the domestic home has a marked impact on women's competitiveness in the labour market (Hochschild, 1989; Man, 2004; Salaff & Greve, 2004; Shelton & John, 1996; Spitzer, Neufeld, Harrison, Hughes & Stewart, 2003). Further still, given that credential recognition issues are increasingly plaguing highly skilled immigrants, especially in host countries where professions are tightly regulated and credentialized (Reitz, 2001a), the occupational sex segregation or clustering of women in teaching, nursing and other regulated professions may serve as another explanation for immigrant women's reduced competitiveness compared to men (Salaff & Greve, 2003). Although a handful of empirical studies have focused on barriers for immigrant women both within (Beach & Worswick, 1993; Cobb-Clark & Connolly, 2001; Shamsuddin, 1998) and outside of the domestic home (Boyd, 1984; Hayfron, 2002; Li, 2000), the simultaneous consideration of these factors has yet to be empirically studied.

This study uses the Longitudinal Survey of Immigrants to Canada (LSIC) to determine if the growth in gender inequalities following migration is a combined result of human capital differences between immigrant men and

[4-2] Statistics retrieved from Citizenship and Immigration Canada website (June 6, 2010): http://www.cic.gc.ca.

women, occupational sex segregation, and household characteristics known to impede women's competitiveness in the labour market. Together, these three clusters of variables act as alternate explanations to a fourth determinant of women's underperformance: labour market discrimination. Since empirical evidence of labour market discrimination is restricted to indirect support (Drolet, 2001), this study considers whether immigrant women are vulnerable to discrimination by directly assessing the influence of human capital differences, household responsibilities and occupational sex segregation.

Chapter results suggest that the occupational status gender gap which manifests itself immediately after migration to Canada does not appear to be due to labour market discrimination as the gender main effect disappears upon simultaneous consideration of human capital factors, occupational sex segregation and household characteristics. The gendered task of childcare emerges as especially salient for the labour market success of immigrant women.

Literature Review

Labour market returns for immigrant women: The female disadvantage

The underperformance of immigrant women in the Canadian labour market relative to immigrant men is well-documented. Even when human capital differences are accounted for immigrant women routinely report lower earnings (Adamuti-Trache & Sweet, 2005; Beach & Worswick, 1993; Li, 2000; Shamsuddin, 1998), lower occupational status (Boyd, 1984; *see previous chapters*), higher unemployment rates (Badets & Howatson-Leo, 1999) and

higher underemployment rates (Galarneau & Morissette, 2004; 2008; Schellenberg, 2004) than their male counterparts. For example, 38% of university-educated immigrant women report working a job that has a low educational requirement, 13% more than immigrant men holding university credentials (Galarneau & Morissette, 2004). Further still, 2001 Census data shows an earnings penalty of $10,344 for immigrant women when compared to immigrant men.[4-3]

Few empirical pieces have attempted to explain the economic vulnerability of immigrant women beyond a human capital argument. Even so, smaller-scale qualitative accounts of immigrant women's post-migration experiences as well as findings from non-immigrant studies offer insight into processes known to hamper the economic performance women. Mirroring the non-immigrant population, immigrant women are unable to compete in the labour market as freely as their male counterparts due to the burden of unpaid work within the domestic home, with childcare reported as a marked hindrance (Waldfogel, 1997; Zhang, 2009). Additionally, occupational sex segregation may limit immigrant women's competitiveness relative to men's due to the clustering of women in regulated professions as well as in jobs, such as teaching, that are in limited demand in Canada relative to male-dominated professions such as computer programming and engineering occupations (Zietsma, 2010).

[4-3] The median earnings of immigrant females and males over the age of 15 years in 2000 was $19,972 and $30,316 respectively (Data retrieved April 30, 2010 from Statistics Canada website. (http://www12.statcan.ca).

The domestic home as a barrier to immigrant women's labour market success

The responsibilization of women as primary caretakers for the home and of children is a powerful and pervasive social norm (Chodorow, 1999; Corman & Luxton, 2007; Luxton, 1986). Even with rising rates of female participation in the labour market, women continue to contribute more hours than their male partners to the operation and management of the domestic home (Hartmann, 1981; Hochschild, 1989; Lindsay, 2008). Although marital satisfaction ratings and other assessments of psychological well-being connected to the amount of unpaid domestic labour worked may vary (Shelton & John, 1996), the presence of an earnings penalty does not (Hersch, 1991; Waldfogel, 1997; Zhang, 2009). A recent estimate calculates a wage gap of 12% when the earnings of women with and without children are compared (Zhang, 2009). Another study estimates women's wage penalty while controlling for human capital differences as 4% for the first child and 12% for the second and subsequent children (Waldfogel, 1997).

Detailed accounts of life after migration for immigrant women reveal household labour, in particular child care, to be a substantial impediment to the labour market performance of immigrant women. The disruption of kinship networks due to migration has a gendered effect as immigrant women are no longer able to draw upon the valuable resource of family and friends to alleviate the demands of labour within the home (Graham & Thurston, 2005; Ho, 2006; Man, 2002; 2004; Salaff & Greve, 2004; Spitzer et al., 2003; Waters, 2002). Due to higher labour costs in Canada, many families are unable to secure the help of nannies or maids in Canada (Graham & Thurston, 2005; Ralston, 1991; Spitzer et

al., 2003; Waters, 2002). Additionally, women from the People's Republic of China comment that the absence of state-funded childcare in Canada, a resource for families in China that offers reprieve from childcare responsibilities, compounds the problem for immigrant women and seriously hampers their ability to negotiate employment in the formal labour market (Preston & Man, 1999; Salaff & Greve, 2004). Since social norms dictate that women are preferable to men as caretakers (Ho, 2006; Spitzer et al., 2003), limited family resources as a result of migration have a gendered consequence within the domestic home.

Immigrant women are also more likely to assume a secondary or supportive role within the family, a role that allows husbands to concentrate on gaining Canadian work experience or accreditation specific to his occupation-type (Beach & Worswick, 1993; Graham & Thurston, 2005; Spitzer et al., 2003). When family finances are constrained, women are unlikely to spend family resources on language classes or credential recognition (Mojab, 1999). Instead, they will often work jobs that are low in status, underpaid, and precarious in nature; supporting the family while the husband economically establishes himself (Graham & Thurston, 2005; Mojab, 1999; Preston & Man, 1999). The support that immigrant women provide to the family as mothers and wives is recognized as a "family investment strategy" (Beach & Worswick, 1993). Although these household activities present as impediments to the economic performance of immigrant women, they ensure maximal success for the family as a whole.

Occupational sex segregation

Gender stereotyping not only governs the division of labour within the domestic home, it also influences how paid work is categorized. Generally, women are assumed to have "a caring nature; skills and experience in household-related work; greater manual dexterity; greater honesty and attractive physical appearance" (Anker, 1997, p.324). Unlike men, women are also assumed to lack: "[the ability] to supervise others; physical strength; abilities in science and mathematics; [a willingness] to travel; and [a willingness] to face physical danger and to use physical force" (Anker, 1997, p.327). With women's increased post-war labour market participation, existing stereotypes about women's inherent abilities have led to the development of "pink collar ghettos" (Howe, 1977): the noticeable over-representation of women in specific job-types. Well-documented pink collar jobs include: nurses; teachers; stenographers, typists; bookkeepers, cashiers and related workers; salespersons, shop assistants; cooks, waiters, bartenders; maids and related housekeeping service workers; hairdressers, barbers, beauticians and related workers; and tailors, dressmakers, sewers, and upholsterers (Anker, 1998). Men on the other hand are typically assigned work as: architects; engineers; legislative officials; managers; sales supervisors and buyers; protective service workers; production supervisors and general foreman; blacksmiths, toolmakers; bricklayers, carpenters and other construction workers. Overall, it is estimated that approximately half of all workers world-wide are

working jobs that have greater than 80% representation of either men or women (Anker, 1998).[4-4]

Occupational sex segregation and immigrant economic outcomes

Galarneau and Morissette (2008) propose that the higher rates of underemployment for university-educated immigrant women relative to men is due to the concentration of immigrant women in particular fields of study. Thus, the link between occupational sex segregation and gendered employment prospects may be due to varying occupational-specific employment opportunities. Since the demand for workers is occupationally unique, it may be inferred that the presence of occupational sex segregation within a population means that men and women will be subject to different labour market realities. For example, despite national economic growth in the early 2000s, the information technology sector experienced a sizeable downturn (Picot & Hou, 2009). Not surprisingly, newcomers to Canada between 2000 and 2004 who intended to practice in the IT sector experienced diminished earnings when compared to previous cohorts (Picot & Hou, 2009). Since men comprise 72.4% of all "computer and information systems professionals" in Canada in 2000,[4-5,4-6] IT job scarcity has gendered

[4-4] In an analysis of sex segregation in 35 countries/regions, Anker (1998) determined that these jobs not only employ a large portion of total female labour, but membership is also female-dominated (i.e., pink collar ghettos). The male and female-dominated occupations listed by Anker (1998) were observable in: Angola, Australia, Austria, Bahrain, Canada, China, Costa Rica, Cyprus, Egypt, Fiji, Finland, France, Germany (West), Ghana, Haiti, Hong Kong, India, Iran (Islamic Republic), Italy, Japan, Jordan, Kuwait, Luxembourg, Malaysia, Mauritius, Netherlands, Netherlands Antilles, New Zealand, Norway, Republic of Korea, Senegal, Spain, Switzerland, Tunisia, and the United States.

[4-5] Statistics retrieved November 10, 2009 from: http://www12.statcan.ca/english/census01/home/index.cfm.

consequences, with men suffering from the IT sector fallout more than women. Likewise, job shortages in nursing, teaching or any other female-dominated occupation will adversely impact women more than men.

Another labour demand issue affecting skilled immigrants is the non-recognition of foreign credentials by licensing bodies and/or employers (Reitz, 2001a; 2001b). Although immigrants may be a recognized professional in their country of origin, the assessment of foreign credentials is an exercise undertaken by Canadian professional associations and licensing bodies in an effort to ensure competency and public safety (Lemay, 2007; Ogilvie, Leung, Gushuliak, McGuire & Burgess-Pinto, 2007). A recent assessment of various regulated professions in Canada reveals that some credentials are easier to transfer relative to others (Zietsma, 2010). Although match-rates between foreign credentials and successful employment vary depending on the source country of credentials, time since migration, as well as the Canadian province of residence (and most likely the Census Metropolitan Area), some occupations exhibit match-rates that approach Canadian-born match-rates (Zietsma, 2010). For example, foreign-educated immigrants in the male-dominated professions of engineering and architecture have match-rates 23% and 30% lower than Canadian-born match-rates. The female-dominated professions of nursing and teaching have match-rates 17% and 42% lower than Canadian-born match-rates (Zietsma, 2010). In this case, foreign-educated teachers demonstrate the largest setback, and due to the

[4-6] The *computer and information systems professionals* occupation group includes: information systems analysts and consultants; database analysts and data administrators; software engineers; computer programmers and interactive media developers; and web designers and developers.

gender composition of the teaching profession, immigrant women are affected more than immigrant men.

The additional subordination of racialized immigrant women

Some groups of immigrant women are more vulnerable in the labour market than others. When the intersection between gender and race is considered, non-white immigrant women routinely emerge as the most disadvantaged group (Anisef, Sweet & Frempong, 2003; Boyd, 1992; Li, 2000). Although it has been well-established that women under-perform relative to men and non-white immigrants under-perform relative to white immigrants, what is not clear is whether non-white immigrant women face particularly bleak prospects that cannot be accounted for by merely summing the barriers experienced by women and non-whites. Using Latina immigrants as an example, Browne and Misra (2003, p. 490) reflect on the error of compartmentalizing the disadvantage faced by non-white immigrant women into additive parts: "[T]o understand the experiences of a Latina in the labor market requires more than understanding the experience of women and Latino/as … the experiences of Latinas in the labor market reflect social constructions of gender that are racialized and social constructions of race that are gendered to create a particular experience". Thus, the routine subordination of non-white immigrant women in the labour market results from the simultaneous consideration of a worker's gender, race, national origin and immigrant status by employers.

This simultaneous gendering and racialization of immigrant women is apparent in a study of Silicon Valley microelectronics production firms where employers consciously assign non-white immigrant women the lowest paying, lowest status jobs based on visible markers (Hossfeld, 1994). Approximately 75% of managers and employers interviewed by Hossfeld were of the opinion that immigrant women are better suited for assembly work compared to non-immigrant women or men.

> "Employers and managers consistently claimed that Third World immigrant women are particularly suited to the work because of their supposedly superior eye-hand coordination and their patience. One male manager claimed that the 'relatively small size' of many Asian and Mexican women 'makes it easier for them to sit quietly for long periods of time, doing small detail work that would drive a person like [him] crazy.' (Hossfeld, 1994, p. 74).

Unlike their male counterparts who often work higher paying and higher status positions as machine and tool operating technicians, immigrant women are offered the lowest paying, lowest status job of assembly work due to their subject position as immigrant, female and largely non-white. Non-immigrant (largely white) women on the other hand were funneled by the same employers into semiskilled work that paid more than assembly work but less than the machine and tool operating technician positions occupied by men. Although none of these jobs require formal education, this example demonstrates the systematic grouping of workers according to immigrant status, gender, and race; a process that hampers non-white immigrant women the most (Hossfeld, 1994).

The present study

Building off of earlier studies by Boyd (1984) and Beach and Worswick, (1993) who demonstrate the economic vulnerability of immigrant women due to occupational clustering (Boyd, 1984) and the effects of the household (Beach & Worswick, 1993), this study advances the literature by determining whether the economic disadvantage faced by immigrant women is due to the combination of these influences while attending to the intersection between gender and ethno-racial background. Instead of focusing on earnings, this study focuses on probabilities of occupational status recovery following migration to Canada as this outcome is telling of both economic and social consequences to migration (Blau & Duncan, 1967; Porter, 1965). Using a longitudinal, nationally-representative dataset this chapter begins with an exploration of the following questions:

Question #1: Are gender inequalities evident, upon time of entry to Canada and after the first four years, once factors outside of the domestic home (i.e., human capital and occupational clustering) are accounted for?

Question #2: Are gender inequalities evident, upon time of entry to Canada and after the first four years, once factors within the domestic home (i.e., marital status, childcare responsibilities) are accounted for?

These questions are examined by additively entering groups of variables. First the female disadvantage is estimated in a basic model without controls. Next, a residual effect of being female is calculated while accounting for human capital differences between men and women. The third model builds upon the second by incorporating controls for occupational sex segregation while the fourth and final

model adds measures of household characteristics known to negatively impact women's labour market outcomes.

Labour market discrimination (towards women or other groups) is supported if a persistent group difference remains despite attending to competing explanations (Drolet, 2001; 2002; Hayfron, 2002; Oaxaca, 1973). Thus, this study will provide indirect support for the claim that immigrant women face discrimination in the Canadian labour market above and beyond that experienced by immigrant men should a significant female disadvantage remain despite accounting for the alternate possibilities of: human capital gender differences, consequences of occupational sex segregation, and increased female labour within the domestic home.

Given their status as the most economically disadvantaged group as well as evidence suggesting that employers actively assign non-white immigrant women to lower status jobs, a third study question is also inspected:

Question #3: Are non-white immigrant women positioned at the bottom of the gender/visible minority hierarchy due to the additive effects of being female and non-white or do they appear to face additional barriers to their successful labour market integration, perhaps as a result of labour market discrimination in excess to that experienced by their co-ethnic male counterparts?

This question will be inspected by comparing the probabilities of occupational status recovery for co-ethnic immigrant men and women. The further subordination of immigrant women of particular ethnic backgrounds is evidenced should they demonstrate lower recovery probabilities when compared to their co-

ethnic male counterparts despite controlling for known processes that have a gendered effect.

Methodology

Data source

Study questions are explored using all three waves of data from the Longitudinal Survey of Immigrants to Canada (LSIC), a dataset that captures the first four years of immigrant experiences in Canada. Over twenty thousand immigrants who immigrated to Canada between October 1, 2000 and September 30, 2001 were contacted to participate in the LSIC study. In addition to period of arrival, study eligibility for the LSIC project included: being 15 years of age or older at the time of landing and if landed from abroad, having applied through Canadian Mission Abroad. Approximately 12,000 participants were recruited for the first wave of data collection. Due to sample attrition over the four years the sample size was reduced to approximately 7,700 by the third wave of data collection, representing an attrition rate of approximately 37% (Schellenberg & Maheux, 2007). Despite this 37% attrition rate, the final sample is felt to be representative of immigrants who entered Canada during this time (Houle & Schellenberg, 2010).

A number of sample restrictions were imposed on the LSIC dataset. Those who did not identify as the principal applicant to one of Canada's economic programs or did not hold university credentials before entering Canada were dropped from analysis as were those who did not report a pre-migration job or did

not report working at all during the first four years of settlement in Canada. Respondents with Canadian educational content were also dropped from analysis given the advantage this would afford them versus those with completely foreign educational profiles (Li, 2001). Sample restrictions also required that respondents be between the ages of 18-65 years for the entire course of the study. Concerns that the lower age restriction of 18 years will include those who are not fully engaged in the labour market due to the pursuit of postsecondary education are mitigated given the aforementioned condition that immigrants must either already hold university credentials or be labour market bound as the principal applicant to an economic program. These sample restrictions resulted in a final sample size of approximately 3,030 study participants.

Although the LSIC was collected in three waves, respondents reported exact start and stop dates for all jobs held in Canada. Thus it was possible to inflate the sample size from a person-wave dataset (three points of data per person: sample size=9,093) to a person-month dataset (48 points of data per person: sample size=145,488). Subsequent record deletions due to detection of "event completions" (occupational status recovery achievement) within survival models resulted in a final sample size of 103,782 person-months.

Measures

Independent Variables

Three sets of independent variables are used to answer the first two study questions: human capital characteristics; occupational groups; and household

variables. After calculating a basic gender model of occupational status recovery, the second model includes controls for the following *human capital characteristics*: age, language proficiency, level of education, and principal applicant status. Although not technically human capital characteristics two additional immigrant characteristics are included in this model: arranged employment (those who arrange employment before migration often fare better in host labour markets (Somerville & Walsworth, 2009)); and Census Metropolitan Area (CMA) of settlement as Canadian CMAs vary greatly with respect to unemployment rates (Akyeampong, 2007) and labour market sector types and sizes (Heisz, LaRochelle-Côté, Bordt & Das, 2005; Warman & Worswick, 2004). Table 4-1 outlines the fifteen *occupational groups* used to control for occupational sex segregation. Since engineering (NOCS: C031-C048; A121) and work as an IT professional (NOCS: C071-C075, A122) are the most commonly reported pre-migration occupations, these two occupation groups are considered separately from the other science industry jobs. For the finance and health fields, respondents were categorized according to skill level with university-educated finance and health professionals analyzed separately from those with college diplomas or lower levels of education. *Household characteristic* variables include marital/common-law status and principal childcare provider as well as interaction terms between these two variables and the female main effect. It should be noted that the LSIC study identifies the primary caretaker as the person who typically cares for children between the ages of 4 and 14 years of age when the child is not in school.[4-7] The LSIC did not collect information on caretaking arrangements for

[4-7] Respondents were asked: "Who usually cares for your child/children when he/she/they is/are

pre-school aged children (ages 0-4 years). Given this limitation, this variable admittedly underreports the actual amount of caretaking required within the home.

The final set of independent variables identifies respondents as belonging to one of eight ethno-racial groups: *Chinese* (self-identifies as ethnically Chinese and has foreign credentials from the People's Republic of China), *South Asian* (self-identifies as South Asian and has foreign credentials from South Asia. The most frequently cited source countries for credentials are: India, Pakistan, and Bangladesh), *Filipino* (self-identifies as ethnically Filipino and has foreign credentials from the Philippines), *Eastern European* (self-identifies as white and Eastern European and has foreign credentials from Eastern Europe. The most frequently cited source countries for credentials are: Romania, Russia and the Ukraine), *White with western credentials* (self-identifies as white and has credentials from a western country. Credentials were considered "western" if they were from the United States, United Kingdom, Australia, New Zealand, Western and Northern Europe. Only a handful of countries within these regions were actually cited by respondents. Thus, "western" functionally represents credentials from: the United States, United Kingdom, France, Germany, Belgium, Austria, Finland, Sweden, Norway, Ireland, Switzerland, the Netherlands, Australia, and New Zealand), *White with non-western credentials* (self-identifies as white and has credentials from a non-western country. Credentials were considered "non-western" if they were from a country not included in the western designation. This category excludes those already captured in the Eastern European group), *Non-*

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not in school?"

white with western credentials (self-identifies as non-white and has credentials from a western country [see previous description of western credentials]), and *Non-white with non-western credentials* (self-identifies as non-white and has credentials from a non-western country [see previous description of non-western credentials]. This category excludes those already captured in the Chinese, South Asian, and Filipino groups). Coding structures for all independent variables are outlined in Table 4-1.

Dependent Variable

A number of steps were taken to construct the dependent variable. Even though the LSIC did not incorporate a measure of occupational status, this measure was derived using job titles for the pre-migration job as well as each job worked since migrating to Canada. Originally reported as Standard Occupational Classification (SOC) codes, job titles were converted into National Occupational Classification for Statistics (NOCS) codes using a Statistics Canada concordance table. Jobs were then assigned an occupational status value using the Boyd-NP socioeconomic scale (Boyd, 2008). These status scores reflect the average earnings and educational requirements for each occupation as reported by the general Canadian population during collection of the 2001 Canada Census (Boyd, 2008). Status scores for the 520 jobs listed by the NOCS range between 0-100 with the lowest status job scoring a "0" and the highest status job scoring a score of "100".

Once pre-migration and each post-migration job were assigned occupational status scores, the dependent variable, occupational status recovery,

Table 4-1: Study variables and coding key

Variable	Level of Measurement	Variable description
Dependent variable		
Occupational status recovery	Dichotomous	0 = Has not achieved occupational status recovery 1 = Has achieved occupational status recovery
Time since migration		
Months	Scale	Number of months since entering Canada
Months^2	Scale	Months^2
Gender effect		
Female	Dichotomous	0 = Male 1 = Female
Human capital variables		
Age		
18-29 years (Reference category)	Dichotomous	0 = Otherwise 1 = 18 to <30 years
30-39 years	Dichotomous	0 = Otherwise 1 = 30 to <40 years
40-49 years	Dichotomous	0 = Otherwise 1 = 40 to <50 years
50-65 years	Dichotomous	0 = Otherwise 1 = 50-65 years
Language Fluency	Scale	Continuous (0.00-1.00)
Level of Education		
Bachelor's degree (Reference category)	Dichotomous	0 = Otherwise 1 = Holds a foreign bachelor's degree
High school or less	Dichotomous	0 = Otherwise 1 = Holds at most a foreign high school diploma
College or Trades	Dichotomous	0 = Otherwise 1 = Holds a foreign college diploma or trades certificate
Master's degree	Dichotomous	0 = Otherwise 1 = Holds a foreign master's degree
Doctorate	Dichotomous	0 = Otherwise 1 = Holds a foreign doctorate
Immigrant characteristics		
Arranged employment	Dichotomous	0 = Otherwise 1 = Arranged employment prior to migrating
Principal applicant	Dichotomous	0 = Otherwise 1 = Principal applicant to one of Canada's economic immigration programs
Settlement CMA		
Toronto (Reference category)	Dichotomous	0 = Otherwise 1 = Lives in Toronto
Montréal	Dichotomous	0 = Otherwise 1 = Lives in Montréal
Vancouver	Dichotomous	0 = Otherwise 1 = Lives in Vancouver
Other CMA	Dichotomous	0 = Otherwise 1 = Lives in a CMA other than Toronto, Montréal or Vancouver

Table 4-1: *Continued*

Variable	Level of Measurement	Variable description
Pre-migration occupation		
IT professional (Reference category)	Dichotomous	0 = Otherwise 1 = IT professional (includes IT managers)
Engineer	Dichotomous	0 = Otherwise 1 = Engineer (includes engineering managers)
Sciences (Other)	Dichotomous	0 = Otherwise 1 = Sciences (excludes engineers and IT professionals)
Finance (Skill level A)	Dichotomous	0 = Otherwise 1 = Finance job requiring a university education
Finance (Other)	Dichotomous	0 = Otherwise 1 = Finance job that does not require a university education
Health (Skill level A)	Dichotomous	0 = Otherwise 1 = Health job requiring a university education
Health (Skill level B or C)	Dichotomous	0 = Otherwise 1 = Health job that does not require a university education
Teacher (Primary/Secondary)	Dichotomous	0 = Otherwise 1 = Elementary or secondary school teacher
Professor	Dichotomous	0 = Otherwise 1 = College or university professor
Social Sciences (Other)	Dichotomous	0 = Otherwise 1 = Social sciences (excludes teachers and professors)
Arts	Dichotomous	0 = Otherwise 1 = Occupation in the arts
Sales or Service	Dichotomous	0 = Otherwise 1 = Sales or service
Trades	Dichotomous	0 = Otherwise 1 = Trades
Industry	Dichotomous	0 = Otherwise 1 = Industry
Manufacturing	Dichotomous	0 = Otherwise 1 = Manufacturing
Household factors		
Married/Common-law	Dichotomous	0 = Otherwise 1 = Married or common-law
Provider of childcare	Dichotomous	0 = Otherwise 1 = Primary caretaker of children within the domestic home
Married/Common-law (x) Female	Dichotomous	0 = Otherwise 1 = Woman who is married or lives with a common-law partner
Provider of childcare (x) Female	Dichotomous	0 = Otherwise 1 = Woman who self-identifies as the primary caretaker of children within the domestic home

Table 4-1: *Continued*

Variable	Level of Measurement	Variable description
Ethno-racial groups		
White with western credentials (Reference category)	Dichotomous	0 = Otherwise 1 = Self-Identifies as white with a western credential
Chinese	Dichotomous	0 = Otherwise 1 = Self-Identifies as ethnically Chinese and highest credential is from the People's Republic of China
South Asian	Dichotomous	0 = Otherwise 1 = Self-Identifies as South Asian and highest credential is from India, Pakistan, Bangladesh, Sri Lanka or other South Asian country
Filipino	Dichotomous	0 = Otherwise 1 = Self-Identifies as Filipino and highest credential is from the Philippines
Eastern European	Dichotomous	0 = Otherwise 1 = Self-Identifies as white, Eastern European and highest credential is from Romania, Russia, Ukraine, or other Eastern European country
White with non-western credentials	Dichotomous	0 = Otherwise 1 = Self-Identifies as white and highest credential is from a non-western country. Excludes those captured in the Eastern European category
Non-white with western credentials	Dichotomous	0 = Otherwise 1 = Self-Identifies as non-white with a western credential
Non-white with non-western credentials	Dichotomous	0 = Otherwise 1 = Self-identifies as non-white with a credential from a non-western country (excludes those captured in the Chinese, South Asian or Filipino categories)

was calculated. Occupational status recovery was determined by subtracting the score of the pre-migration job from the post-migration job score. Immigrants who experience downward economic mobility (i.e., a loss in occupational status) due to migration are identified with negative scores while positive scores denote immigrants who experience upward economic mobility (i.e., experience occupational status recovery). Immigrants working a job in Canada equal in status to the pre-migration job will score a zero and for the purposes of this study are

included with those who experienced an increase in occupational status. The dependent variable was then transformed into a dummy variable: "0" indicates those who have not regained occupational status following a decline in status due to migration while a score of "1" identifies those who have achieved occupational status recovery. The coding structure for the dependent variable is outlined in Table 4-1.

Analytical technique

Study questions are explored using discrete-time survival analysis (Allison, 1982). Survival analysis is superior to OLS regression when longitudinal datasets are employed as it can manage both fixed (variables that are constant with time) as well as time-varying variables (Allison, 1982). Although Cox survival models are more widely used, discrete-time survival analysis is called for in this case due to the crude measurement of time (i.e., months). Since time is measured in months, chances are high that event completion ties will occur (i.e., more than one respondent will experience occupational status recovery within a given month). These ties present computational difficulties for continuous survival models and are best handled by discrete-time survival analysis (Allison, 1982).

The binary nature of the main outcome variable (0 = job in Canada is lower in occupational status than that worked prior to migration; 1 = job in Canada is equal to or higher in status to that worked prior to migration) violates OLS regression assumptions (Allison, 1999). Thus, a logit function is linked to

model equations so that the odds of occupational status recovery may be estimated at each observational point. After estimating a basic gender model of occupational status recovery odds, this chapter estimates three additional survival models to determine whether the gender effect may be "explained away" by other variable sets. The following equations denote each survival model, representing the log-odds of event occurrence (i.e., occupational status recovery) as a function of time period and covariates (Xie, McHugo, Drake & Sengupta, 2003):

Model 1: $\text{logit}_e(h) = (\alpha_1 t_1 + \alpha_2 t_2 + \ldots + \alpha_{48} t_{48}) + b_1 \text{Gender}$
Model 2: $\text{logit}_e(h) = (\alpha_1 t_1 + \alpha_2 t_2 + \ldots + \alpha_{48} t_{48}) + b_1 \text{Gender} + b_2 \text{HumCap}$
Model 3: $\text{logit}_e(h) = (\alpha_1 t_1 + \alpha_2 t_2 + \ldots + \alpha_{48} t_{48}) + b_1 \text{Gender} + b_2 \text{HumCap} + b_3 \text{Occ}$
Model 4: $\text{logit}_e(h) = (\alpha_1 t_1 + \alpha_2 t_2 + \ldots + \alpha_{48} t_{48}) + b_1 \text{Gender} + b_2 \text{HumCap} + b_3 \text{Occ} + b_4 \text{Home}$

where,

t =	a sequence of dummy variables indexing individual time periods (i.e., 1-48 months)
α =	multiple intercepts, one per time period
b =	slope parameters
Gender =	gender
HumCap =	a vector of human capital and general labour market characteristics
Occ =	a vector of pre-migration occupations
Home =	a vector of domestic home characteristics

Upon estimating the fourth survival model, another vector of variables will be added to determine whether the odds of occupational status recovery are different for immigrants with different ethno-racial backgrounds (Model 5). A series of predicted probabilities will be calculated using this final survival model to ascertain whether non-white immigrant women demonstrate similar occupational status recovery profiles to other immigrant groups.

Results

To determine whether some immigrants experience larger status drops than others due to migration, the average occupational status scores for the job held prior to migration and the first Canadian job are considered in Table 4-2. A gender comparison of pre-migration occupational status scores reveals that before migrating to Canada, immigrant men and women worked jobs of equivalent status: 79 and 78 respectively (non-significant group difference). Following migration to Canada this one-point gender gap increases six-fold: when the occupational status scores of men's and women's first Canadian jobs are compared, men report working jobs significantly higher in status than women (53 points and 47 points respectively).

Table 4-2 also shows that men and women belonging to different ethno-racial groups experience varying degrees of occupational status decline following migration to Canada. For both men and women, white immigrants with western credentials appear to be the least affected by migration to Canada as their actual and proportional drop in scores are much smaller than for other groups (men: 6.1 point drop; women: 7.0 point drop). Chinese men (when compared to other immigrant men) and Eastern European women (when compared to other immigrant women) report the largest drops in occupational status due to the migration experience. Considering the higher pre-migration occupational status scores of Chinese men and Eastern European women it is reasonable to conclude that these groups should experience greater status drops as they have farther to

Table 4-2: Occupational status scores for the pre-migration job and first job in Canada

	Credential source	Sample Size	Pre-migration job [95% C.I.]	First job in Canada [95% C.I.]	Change in Status [95% C.I.]	Proportional drop in status
Men			79.3 [78.5, 80.1]	53.3 [52.0, 54.4]	-26.0	32.8%
Chinese	People's Republic of China	340	85.7 [84.2, 87.2]	50.3 [47.4, 53.3]	-35.4	41.3%
Non-white (other)	Western credentials	100	80.2 [77.1, 83.2]	63.4 [58.7, 68.2]	-16.8	20.9%
White (other)	Non-Western credentials	170	80.1 [77.5, 82.6]	58.3 [54.4, 62.1]	-21.8	27.2%
Eastern European	Eastern Europe	210	78.8 [76.3, 81.3]	56.7 [53.2, 60.1]	-22.1	28.0%
South Asian	South Asia	370	79.7 [78.2, 81.3]	50.5 [47.9, 53.0]	-29.2	36.6%
Non-white (other)	Non-Western credentials	420	78.7 [77.0, 80.3]	50.5 [48.1, 53.0]	-28.2	35.8%
Filipino	Philippines	120	75.7 [72.4, 79.1]	43.7 [39.2, 48.3]	-32.0	42.3%
White (other)	Western credentials	170	72.8 [69.3, 76.2]	66.7 [62.9, 70.4]	-6.1	8.4%
Women			77.5 [76.5, 78.6]	46.7 [45.2, 48.2]	-30.8	39.7%
Eastern European	Eastern Europe	120	82.4 [79.4, 85.5]	44.4 [40.0, 48.7]	-38.0	46.1%
Chinese	People's Republic of China	230	82.0 [79.8, 84.2]	44.5 [40.9, 48.0]	-37.5	45.7%
White (other)	Non-Western credentials	130	79.8 [77.1, 82.6]	49.5 [45.3, 53.7]	-30.3	38.0%
Non-white (other)	Western credentials	50	77.6 [72.2, 82.9]	56.3 [48.9, 63.7]	-21.3	27.4%
Filipino	Philippines	110	76.6 [73.7, 79.4]	44.0 [39.8, 48.2]	-32.6	42.6%
South Asian	South Asia	190	75.8 [72.9, 78.7]	41.7 [38.4, 45.0]	-34.1	45.0%
Non-white (other)	Non-Western credentials	220	74.9 [72.5, 77.2]	47.9 [44.5, 51.2]	-27.0	36.0%
White (other)	Western credentials	90	69.3 [65.4, 73.2]	62.3 [57.1, 67.5]	-7.0	10.1%

Source: Longitudinal Survey of Immigrants to Canada, 2005

Note: Occupational status scores were calculated using the Boyd-NP socioeconomic scale (Boyd, 2008). The Boyd-NP scale assigns each of the 520 occupations listed by the National Occupational Classification a status score ranging from 0 (lowest status) to 100 (highest status). Ethno-racial groups are ordered in descending order of pre-migration occupational status. Proportional drop in status is calculated by dividing the change in status by the occupational status score for the pre-migration job.

Note: Sample sizes denote the number of people within each category (not person/months as in the case for survival models and predicted probability estimates). To ensure anonymity, all sample sizes have been rounded according to LSIC guidelines.

fall (Chiswick, Lee & Miller, 2003). For this reason it is important to consider the proportional drop in occupational status (i.e., the drop in status relative to the pre-migration status score).

Filipino men and Eastern European women appear to be most adversely impacted by migration to Canada as they experience proportional drops of 42.3% and 46.1%. Consulting the Boyd-NP socioeconomic scale (Boyd, 2008), a drop in occupational status similar to that experienced by Filipino men is equivalent to a "chemical technologist" (76 points) from the Philippines working in Canada as an "electronics assembler" (44 points). The drop experienced by Eastern European women is equivalent to a foreign-trained "registered nurse" (82 points) working in Canada as an "elementary school teacher assistant" (44 points).

For men, the impact of migration on occupational status attainment appears to be ordered by visible minority status. When immigrants with western credentials are compared, white immigrant men report smaller status declines compared to non-white immigrant men (proportional drops of 8.4% and 20.9% respectively). Similarly, white Eastern European men report the smallest proportional drop in status relative to other groups of non-western credential holding men (28.0%), followed by 'other' whites with non-western credentials (27.2%). The ordering for women is slightly different and does not appear to be tied as closely to racial differences. Although white women with western credentials still outperform non-white women with western credentials (10.1% and 27.4%), the ordering for women with non-western credentials does not appear

as systematically linked to visible minority status as Eastern European (white) women report the largest proportional drop in occupational status (46.1%).

Regardless of ethno-racial background, men report lower proportional occupational status drops as well as higher status first jobs in Canada than their female counterparts. The largest male advantage is that of Eastern European men. Even though Eastern European women report higher pre-migration occupational status scores than Eastern European men (82.4 and 78.8 respectively), the status score for their first Canadian job is approximately 12 points lower than that of Eastern European men (44.4 versus 56.7).

It is possible that the occupational status gender gap that emerges when groups first enter the Canadian labour market is temporary and, given time in Canada, the gap will narrow as immigrant women catch up to their male counterparts. Table 4-3 displays group percentages of those who by the end of the fourth year in Canada successfully secured a job equal or higher in status to that worked prior to migration. For both men and women immigrants with western credentials report the highest rates of occupational status recovery. Whether comparisons are made for immigrant men holding western or non-western credentials, white immigrant men routinely outperform non-white immigrant men. Although this pattern is largely replicated for immigrant women, Eastern European women do not recover as well as other immigrant women. For all ethno-racial groups, a greater proportion of men than women achieve occupational status recovery by the end of the fourth year in Canada. Again, the largest gender gap appears to be that for Eastern European men and women

(39.2% of Eastern European men report occupational status recovery by study end compared to 18.4% of Eastern European women).

Table 4-3: Percentage of each immigrant group reporting occupational status recovery by the end of the fourth year in Canada

Immigrant group	Sample Sizes	Credential Source	Percentage who report occupational status recovery
Men			31.3%
White (other)	170	Western credentials	57.8%
Non-white (other)	100	Western credentials	43.1%
Eastern European	210	Eastern Europe	39.2%
White (other)	170	Non-Western credentials	35.4%
South Asian	370	South Asia	30.4%
Non-white (other)	420	Non-Western credentials	27.1%
Filipino	120	Philippines	26.5%
Chinese	340	People's Republic of China	22.1%
Women			26.5%
White (other)	90	Western credentials	58.5%
Non-white (other)	50	Western credentials	36.8%
White (other)	130	Non-Western credentials	28.5%
South Asian	190	South Asia	26.1%
Non-white (other)	220	Non-Western credentials	25.3%
Filipino	110	Philippines	21.9%
Chinese	230	People's Republic of China	20.6%
Eastern European	120	Eastern Europe	18.4%

Source: Longitudinal Survey of Immigrants to Canada, 2005
Note: Sample sizes denote the number of people within each category (not person/months as in the case for survival models and predicted probability estimates). To ensure anonymity, all sample sizes have been rounded according to LSIC guidelines.

The data reported in Tables 4-2 and 4-3 reflect the lived experiences of immigrant men and women in Canada. In other words, regardless of whether these differences are attributable to human capital differences, occupational sex segregation or gendered responsibilities in the domestic home, the migration experience has a more deleterious effect on women than men following migration

to Canada. This next section of results considers whether emergent inequalities are attributable to these background variables. To address this possibility, we turn to the first study question.

Question #1: Are gender inequalities evident, upon time of entry to Canada and after the first four years, once factors outside of the domestic home (i.e., human capital and occupational clustering) are accounted for?

Part I: At time of entry to Canada

The first model presented in Table 4-4 reports the baseline gender effect on occupational status recovery with only time since arrival acting as a control variable. This first model reveals that at time of entry, women have much smaller odds of occupational status recovery than men (OR=0.69, $p \leq 0.001$). The possibility that this occupational status recovery gender gap following migration to Canada is attributable to human capital differences between immigrant men and women is tested in Model 2. Despite adding controls for a host of human capital factors the occupational status gender gap remains. Women are still less likely than immigrant men to secure employment commensurate in status to that held prior to migration (OR=0.73, $p \leq 0.001$). These results suggest that even when women and men hold equivalent human capital backgrounds, immigrant women are less likely to secure work as high in status to that held before migrating to Canada when compared to men. However, when compared to the results from the first model we can see that the odds ratio increased from 0.69 to 0.73. This change lends us to believe that human capital factors do account for some of the gender gap in occupational status recovery odds.

Table 4-4: Odds ratios of occupational status recovery

Sample size = 103,782 person-months

	Model 1	Model 2	Model 3	Model 4	Model 5
	Odds Ratios	**Odds Ratios**	**Odds Ratios**	**Odds Ratios**	**Odds Ratios**
Time in Canada					
Months	0.83 ***	0.83 ***	0.84 ***	0.84 ***	0.84 ***
Months^2	1.00 ***	1.00 ***	1.00 ***	1.00 ***	1.00 ***
Women	0.69 ***	0.73 ***	0.73 ***	0.97 *(n.s.)*	0.94 *(n.s.)*
Human Capital Factors					
Age					
30 through <40 years		0.79 **	0.88 *	0.95 *(n.s.)*	0.95 *(n.s.)*
40 through <50 years		0.64 ***	0.71 **	0.78 **	0.79 *
≥ 50 years		0.73 *(n.s.)*	0.91 *(n.s.)*	0.93 *(n.s.)*	0.92 *(n.s.)*
Language fluency		4.50 ***	4.16 ***	3.93 ***	5.57 ***
Level of Education					
High School Diploma or less		1.48 **	1.15 *(n.s.)*	1.16 *(n.s.)*	1.10 *(n.s.)*
College or Trades Diploma		1.15 *(n.s.)*	0.93 *(n.s.)*	0.93 *(n.s.)*	0.89 *(n.s.)*
Graduate Degree		1.20 **	1.34 ***	1.33 ***	1.29 ***
Arranged employment pre-migration		3.24 ***	3.92 ***	3.75 ***	3.53 ***
Western credential		1.42 ***	1.36 ***	1.36 ***	
Principal applicant		0.99 *(n.s.)*	1.03 *(n.s.)*	0.99 *(n.s.)*	0.98 *(n.s.)*
CMA of residence					
Montréal		1.17 *(n.s.)*	1.01 *(n.s.)*	1.02 *(n.s.)*	0.92 *(n.s.)*
Vancouver		1.04 *(n.s.)*	1.03 *(n.s.)*	1.03 *(n.s.)*	1.02 *(n.s.)*
Other CMA		1.23 *	1.28 **	1.28 ***	1.22 **
Occupations/Occupation Groups					
Engineer			0.24 ***	0.25 ***	0.24 ***
Sciences (Other)			0.51 ***	0.51 ***	0.52 ***
Finance (Skill level A)			0.36 ***	0.35 ***	0.38 ***
Finance (Other)			0.84 *(n.s.)*	0.84 *(n.s.)*	0.89 *(n.s.)*
Health (Skill level A)			0.37 ***	0.37 ***	0.37 ***

Health (Skill level B or C)	0.48 **	0.45 **	0.49 **
Teacher (Primary/Secondary)	0.31 ***	0.31 ***	0.31 ***
Professor	0.33 ***	0.35 ***	0.35 ***
Social Sciences (Other)	0.48 ***	0.56 **	0.48 ***
Arts	0.75 *(n.s.)*	0.77 *(n.s.)*	0.76 *(n.s.)*
Sales or Service	0.74 **	0.80 **	0.74 **
Trades	0.79 *(n.s.)*	0.73 *(n.s.)*	0.81 *(n.s.)*
Industry	0.76 *(n.s.)*	0.75 *(n.s.)*	0.78 *(n.s.)*
Manufacturing	0.88 *(n.s.)*	0.85 *(n.s.)*	0.91 *(n.s.)*
Household factors			
Married/Common-law		1.07 *(n.s.)*	1.08 *(n.s.)*
Provider of childcare		0.53 ***	0.57 ***
Married/Common-law (x) Female		0.82 *(n.s.)*	0.73 *(n.s.)*
Provider of childcare (x) Female		1.38 *(n.s.)*	1.27 *(n.s.)*
Ethno-racial groups			
Chinese			0.73 *
South Asian			0.56 ***
Filipino			0.48 ***
Eastern European			0.88 *(n.s.)*
White with non-western credentials			0.87 *(n.s.)*
Non-white with western credentials			0.76 *(n.s.)*
Non-white with non-western credentials			0.63 ***

Source: Longitudinal Survey of Immigrants to Canada, 2005

*p ≤ 0.05 **p ≤ 0.01 ***p ≤ 0.001

Note: Occupation groups denoting a skill-level are categorized according to the National Occupational Classification (NOC) system. Skill level A: university education; Skill level B: college education or apprenticeship training; Skill level C: secondary school and/or occupation-specific training. Standard error estimates calculated using 500 bootstrap weights

Before discussing the results of the third model in Table 4-5, which considers whether any of the gender gap is due to occupational sex segregation, the presence of occupational sex segregation within the sample must first be explored. According to Table 4-5, approximately half of all study respondents report having worked in their home country as either an engineer (21.2%), IT specialist (12.6%), teacher (5.8%), professor (4.4%), accountant (2.9%), chemist (0.9%), or in the health field as a nurse (0.7%) or general practitioner/specialist physician (1.9%). Similar to sex segregation trends in Canada, the sample reports high levels of sex segregation (>70% membership) for engineering, IT work, nursing, and teaching. Both engineering and computer programming occupations emerge as male-dominated with men comprising four out of every five immigrant engineers. The occupation with the greatest amount of sex segregation is nursing: for every one man reporting nursing as a pre-migration job, nine women report the same. Another female-dominated profession within the sample is teaching (elementary and secondary school). Although the representation of women does not surpass the 70% threshold, the study sample reports a much higher representation of female physicians than national trends. Even though this category is a male-dominated profession in Canada, it is female-dominated in the present study. Bearing these trends in mind, it is reasonable to assume that sluggish demand for health workers and teachers will impact immigrant women more than men while the inability to apply foreign engineering credentials will impact men more than women. Having established that the sample does indeed show evidence of occupational sex segregation, we are now able to assess whether the unequal distribution of men and women across different occupations

Table 4-5: Sex segregation of the most commonly reported pre-migration jobs (Skill level A)

		Sample			2006 Census	
	NOCS codes	Men	Women	% Sample	Men	Women
Male-dominated professions						
Engineer	C031-C048, A121	80.3%	19.7%	21.2%	87.2%	12.8%
IT professional	C071-C075, A122	73.7%	26.3%	12.6%	74.3%	25.7%
Female-dominated professions						
Teacher (elementary and secondary)	E131, E132	16.2%	83.8%	5.8%	26.4%	73.6%
Nurse (RN)	D112	11.6%	88.4%	0.7%	6.2%	93.8%
Non-sex segregated professions						
Professor/college instructor	E111, E121, E112	55.0%	45.0%	4.4%	50.8%	49.2%
Accountant	B011	43.1%	56.9%	2.9%	46.3%	53.7%
Physician	D011, D012	36.4%	63.7%	1.9%	63.6%	36.4%
Chemist	C012	65.0%	35.0%	0.9%	56.9%	43.1%

Source: 2006 Census of Canada; Longitudinal Survey of Immigrants to Canada, 2005

Note: The jobs listed here are the most commonly reported jobs for highly skilled immigrants within the Longitudinal Survey of Immigrants to Canada, not the general population. Skill level A jobs are those that require a university degree (according to the National Occupational Classification (NOC) system). 2006 Census data report the presence of sex segregation within each job type for the general Canadian population.

can explain any of the occupational status recovery residual difference between men and women (Table 4-4, Model 3).

Despite holding occupational groups and human capital characteristics constant, we can see that immigrant women continue to report lower odds of securing a job in Canada commensurate in status to the one held prior to migration (OR=0.73, $p \leq 0.001$) when compared to men. Interestingly, controlling for pre-migration occupation does not explain any more of the gender gap than what was explained with the human capital model (Model 2). This finding suggests that the decreased odds of occupational status recovery is not due to occupational sex segregation and must be a consequence of some other process.

Gender differences aside, Model 3 also reveals interesting results regarding regulated versus non-regulated occupations. Immigrants in regulated professions: engineering, finance (i.e., accounting), health jobs (i.e., nursing, medicine, pharmacy), and teaching all report lower odds of occupational status recovery when compared to immigrants who worked as IT professionals (i.e., unregulated industry) prior to migration.

Part II: Gender differences given time in Canada ("the first four years")

There is a possibility that the setback immigrant women face immediately following migration to Canada is temporary and will dissolve with continued time in Canada. A strong recovery rate would mean that immigrant women, although initially disadvantaged, could catch-up to or even surpass the performance of immigrant men. To determine whether men and women have similar rates of

occupational status recovery given shared human capital and occupational profiles, a series of cumulative predicted probabilities were calculated. These results are presented in the first four columns of Table 4-6.

Even when immigrant men and women share similar labour market profiles (*Hum Cap + Occ*), immigrant men demonstrate a greater probability of occupational status recovery given time in Canada. Whether considering a basic human capital model (*Hum Cap*) or a model that includes occupational controls (*Hum Cap + Occ*), men routinely report significantly higher probabilities of occupational status recovery when compared to women.[4-8] Turning to the (*Hum Cap + Occ*) model, we can see that during the first month the gender gap in probability estimates is 2.6 percentage points. This means that during the first month of life in Canada, immigrant men are 39% more likely than women to secure work commensurate in status to that worked before migrating to Canada. Interestingly, this gender gap appears to widen as months in Canada pass: 3.8% (end of the first year), 5.6% (end of the second year), 7.4% (end of the third year), and 8.6% (end of the fourth year). This increase in the gender gap suggests that women are not only unable to catch up to men over the first four years, they fall further behind. The deteriorating position of women relative to men with increased time in Canada may be due to a scarring effect as a result of significant setbacks at time of entry or, a worsening of the barrier with time. Regardless, immigrant women appear to face challenges to successful employment above and beyond those faced by immigrant men.

[4-8] Significance is determined by comparing confidence interval ranges between groups. Predicted probability differences between groups are statistically significant if 95% confidence intervals do not overlap.

Table 4-6: Cumulative probabilities of occupational status recovery

Months in Canada	Men *Hum Cap* [95% C.I.]	Women *Hum Cap* [95% C.I.]	Men *Hum Cap + Occ* [95% C.I.]	Women *Hum Cap + Occ* [95% C.I.]	Men *Hum Cap + Occ + Home* [95% C.I.]	Women *Hum Cap + Occ + Home* [95% C.I.]
1	.1027 [.0938, .1115]	.0766 [.0697, .0835]	.0914 [.0832, .0996]	.0658 [.0596, .0720]	.0752 [.0680, .0823]	.0874 [.0786, .0962]
6	.1245 [.1161, .1328]	.0934 [.0868, .1001]	.1122 [.1043, .1200]	.0814 [.0753, .0874]	.0929 [.0858, .0999]	.1077 [.0988, .1166]
12	.1557 [.1487, .1628]	.1180 [.1121, .1238]	.1425 [.1358, .1493]	.1043 [.0988, .1098]	.1191 [.1126, .1255]	.1373 [.1286, 1460]
18	.1931 [.1882, .1981]	.1479 [.1432, .1525]	.1794 [.1745, .1843]	.1329 [.1284, .1373]	.1514 [.1458, .1569]	.1736 [.1652, 1820]
24	.2370 [.2338, .2401]	.1837 [.1801, .1874]	.2234 [.2202, .2266]	.1677 [.1640, .1715]	.1905 [.1855, .1956]	.2171 [.2083, .2258]
30	.2872 [.2817, .2927]	.2261 [.2205, .2316]	.2745 [.2689, .2800]	.2096 [.2040, .2151]	.2370 [.2300, .2440]	.2679 [.2570, .2788]
36	.3433 [.3326, .3541]	.2748 [.2647, .2849]	.3323 [.3213, .3432]	.2586 [.2485, .2686]	.2907 [.2792, .3023]	.3257 [.3106, .3408]
42	.4042 [.3872, .4211]	.3296 [.3136, .3456]	.3956 [.3782, .4130]	.3145 [.2984, .3306]	.3511 [.3334, .3687]	.3893 [.3686, 4099]
48	.4681 [.4447, .4915]	.3895 [.3669, .4121]	.4626 [.4386, .4866]	.3763 [.3533, .3993]	.4166 [.3922, .4409]	.4568 [.4301, 4836]

Source: Longitudinal Survey of Immigrants to Canada, 2005

Note: A cumulative probability of occupational status recovery is defined as the additive probability of occupational status recovery given a particular length of time since arrival in Canada. *(Hum Cap)* cumulative probabilities calculated while controlling for human capital characteristics (gender; age; language proficiency; level of education; principal applicant status; whether employment was arranged prior to migration; CMA of residence). *(Hum Cap + Occ)* cumulative probabilities calculated while controlling for labour market characteristics (gender; age; language proficiency; level of education; principal applicant status; whether employment was arranged prior to migration; CMA of residence and occupations/occupation groups). *(Hum Cap + Occ + Home)* cumulative probabilities calculated while controlling for labour market characteristics (gender; age; language proficiency; level of education; principal applicant status; whether employment was arranged prior to migration; CMA of residence and occupations/occupation groups) and household characteristics (marital status and provider of childcare)

.

Question #2: Are gender inequalities evident upon time of entry to Canada and after the first four years once factors within the domestic home (i.e., marital status, childcare responsibilities) are accounted for?

Part I: At time of entry to Canada

Gender roles and responsibilities in the domestic home may act as a significant barrier to the labour market success of immigrant women. As discussed earlier, women are more likely to adopt a supportive role and, if necessary, act as the primary caregiver of children; activities that are hypothesized to negatively impact economic outcomes. The fourth model in Table 4-4 explores whether responsibilities in the domestic home account for the female disadvantage at time of entry to Canada.

When household factors are introduced into the model the gender gap noted in the previous models decreases to a very small, non-significant gap (OR=0.97, $p>0.05$). This change in immigrant women's economic position relative to immigrant men's suggests that the domestic home acts as a substantial barrier to women's competitiveness in the labour market. Of the two household variables, childcare responsibilities emerge as particularly burdensome to success in the labour market. Those who identify as the principal caregiver of children in the domestic home have lower odds (OR=0.53, $p \leq 0.001$) of securing a job equivalent in status to the job held before migrating when compared to those who do not have to care for children. An interaction between female status and positive childcare responsibilities does not reveal a significant effect. This result in combination with the childcare main effect suggests that the act of childcare imparts similar effects on labour market outcomes for all caregivers, irrespective

of gender. However, since women are more likely than men to provide childcare this household characteristic is more telling of women's labour market success than men's; hence the disappearance of the gender gap once this factor is included in the model.

Part II: Gender differences given time in Canada ("the first four years")

Dissimilar to the gender trends in the (*Hum Cap + Occ*) model in Table 4-6, women significantly outperform men across all time points when household measures are included in the regression model (Table 4-6, *Hum Cap + Occ + Home).* Immigrant women report higher probabilities of occupational status recovery at time of entry as well as after four years when household characteristics such as childcare responsibilities are accounted for. Although the female advantage is smaller in the *(Hum Cap + Occ + Home)* model compared to the male advantage in the *(Hum Cap + Occ*) model, women do report a 4 percentage point lead by the end of the fourth year. These results certainly support narratives from recent female immigrants who identify the household as a major burden to women's economic success in Canada (Spitzer et al., 2003; Man, 2004).

Question #3: Does the gender/visible minority hierarchy emerge due to a culmination of labour market and household characteristics? Or, do visible minority women show evidence of additional barriers to their successful labour market integration, perhaps as a result of discrimination in excess to that experienced by their male counterparts?

Routinely, visible minority immigrant women report the most disadvantaged labour market position when the economic welfare of white and non-white men and women are compared (Boyd & Yiu, 2009; Boyd 1992; Li,

2000; Pendakur & Pendakur, 1998). To determine whether visible minority women show a particular disadvantage, comparisons are made between immigrant men and women belonging to eight different ethno-racial groups: Chinese, South Asian, Filipino, Eastern European, 'other' white immigrants with western credentials, 'other' white immigrants with non-western credentials, 'other' non-white immigrants with western credentials, and 'other' non-white immigrants with non-western credentials.

The fifth model in Table 4-4 shows that despite controlling for occupational clustering, human capital variables and household characteristics, significant ethno-racial differences are apparent at time of entry. When compared to white immigrants with western credentials, Chinese (OR=0.73, $p \leq 0.05$), South Asian (OR=0.56, $p \leq 0.001$), Filipino (OR=0.48, $p \leq 0.001$) and non-white immigrants with non-western credentials (OR=0.63, $p \leq 0.001$) are less likely to experience occupational status recovery upon entry to Canada. Even though Eastern European immigrants also have non-western credentials, they do not report significantly lower odds of occupational status recovery when compared to white immigrants with western credentials. This is also the case for 'other' white immigrants with non-western credentials. Although these results do suggest that certain groups (particularly visible minority groups) face barriers in addition to labour market and household factors, the third study question asks whether these barriers are greater for visible minority women. To address this, a series of cumulative predicted probabilities of occupational status recovery were calculated for men and women belonging to different ethno-racial groups (Table 4-7).

The predicted probabilities in Table 4-7 are organized within blocks, with Block 1 immigrants significantly outperforming Block 2 immigrants who in turn significantly outperform Block 3 immigrants. Similar to the previous chapter, visible minority status appears central to predicted probability calculations. Although the depressed outcomes of some of the visible minority groups may be attributable to credential source (western versus non-western credentials), the elevated position of white immigrants with non-western credentials, including Eastern European immigrants (Block 2), relative to non-white immigrants with non-western credentials (Block 3) suggests that labour market discrimination on the basis of markers of difference (such as, skin colour, speaking with a non-European accent (Creese & Kambere, 2003), or having a non-European surname (Oreopolous, 2009)) may be at play.

When comparisons are made between co-ethnic men and women, Table 4-7 reveals there to be no significant differences in cumulative predicted probabilities of occupational status recovery, regardless of ethno-racial group. For example, Chinese men and women, who are both grouped in the third block, report similar probabilities of occupational status recovery (Chinese women: 39.8% and Chinese men: 36.6%).

The results from Table 4-7 suggest that the gender/race hierarchy noted in the literature transpires due to a combination of processes: 1. women report lower returns than men in part because of human capital differences but also because of the substantial barrier that childcare activities have on labour market outcomes, 2. non-whites report lower returns due to "unexplained" barriers in the Canadian

Table 4-7: Cumulative probabilities of occupational status recovery by the end of the fourth year in Canada

Block	*Immigrant group*	*Cumulative probability [95% C.I.]*
1	White women with western credentials	0.6313 [0.6043, 0.6584]
	White men with western credentials	0.5991 [0.5727, 0.6256]
2	Non-white women with western credentials	0.5190 [0.4887, 0.5493]
	White women with non-western credentials	0.5145 [0.4859, 0.5432]
	Eastern European women with credentials from Eastern Europe	0.4922 [0.4637, 0.5206]
	Non-white men with western credentials	0.4850 [0.4563, 0.5137]
	White men with non-western credentials	0.4805 [0.4537, 0.5074]
	Eastern European men with credentials from Eastern Europe	0.4582 [0.4315, 0.4850]
3	Non-white women with non-western credentials	0.4134 [0.3863, 0.4405]
	South Asian women with credentials from South Asia	0.4119 [0.3845, 0.4393]
	Chinese women with credentials from the PRC	0.3976 [0.3704, 0.4247]
	Filipino women with credentials from the Philippines	0.3960 [0.3673, 0.4246]
	Non-white men with non-western credentials	0.3808 [0.3563, 0.4053]
	South Asian men with credentials from South Asia	0.3793 [0.3546, 0.4041]
	Chinese men with credentials from the PRC	0.3655 [0.3408, 0.3902]
	Filipino men with credentials from the Philippines	0.3639 [0.3378, 0.3901]

Source: Longitudinal Survey of Immigrants to Canada, 2005

Note: Cumulative probabilities were calculated while controlling for labour market characteristics (gender, age, language proficiency, level of education, principal applicant status, whether employment was arranged prior to migration, CMA of residence, occupations/occupation groups) and household characteristics (marital status, provider of childcare). Immigrant groups are ordered in a hierarchy of statistical significance. Block 1 members report significantly higher probabilities of occupational status recovery than Block 2. Block 2 members (with the exception of Eastern European men) report significantly higher probabilities of occupational status recovery than Block 3. Groups are organized in descending order of predicted probability of occupational status recovery. Eastern European do not perfectly fit within either the 2nd or 3rd block as they do not significantly differ from "Non-white women with non-western credentials" or "South Asian women with credentials from South Asia" (Block 3), however do significantly differ from "Non-white women with western credentials" and "White women with non-western credentials" (Block 2).

labour market not faced by white immigrants. Since non-white immigrant women do not appear to significantly differ from their male counterparts once labour market and household controls are introduced, their depressed position within the gender/race hierarchy is not felt to be due to labour market discrimination in excess to what their co-ethnic men experience. Rather, it appears that non-white immigrant women underperform relative to other groups due to the combination of barriers faced individually by women and non-whites.

Discussion

Previous investigations of labour market inequalities between immigrant men and women have revealed "unexplained gender differences" (Adamuti-Trache & Sweet, 2005; Antecol, 2000; Beach & Worswick, 1993; Boyd, 1984; Chiswick, Lee & Miller, 2003; Shamsuddin, 1998). These studies have demonstrated that a residual gender effect remains despite controlling for alternate explanations of women's decreased competitiveness in the labour market. This is interpreted by some as indirect support for labour market discrimination against women (Adamuti-Trache & Sweet, 2005; Drolet, 2001; Gunderson, 2006; Oaxaca, 1973). However, interpretation of a residual gender effect as true support of discrimination is only possible if the statistical model at hand is correctly specified and *all* alternate explanations are accounted for (Menard, 2001).

Unlike previous studies, which tend to control for human capital differences between men and women and one alternate explanation (to labour

market discrimination) of women's reduced competitiveness,[4-9] this study considers a total of three alternate explanations for immigrant women's diminished returns in the Canadian labour market relative to their male counterparts: human capital differences, occupational sex segregation, and household factors. Study results indicate that when these variables are controlled for, immigrant men and women do not significantly differ with respect to occupational status recovery following migration to Canada. Thus, unlike the conclusions of previous studies, this study does not find support for the argument that highly skilled immigrant women experience gender discrimination in the labour market.

It is important to stress however that although an "unexplained" gender effect was not detected in this study, scholarship during a different economic climate may yield different results. Gender role attitudes across 25 OECD countries reveal that public sentiment supports the hiring of men over women when jobs are scarce (Fortin, 2005). Since the immigrants interviewed in this study entered the Canadian labour market during a favourable economic climate with modest unemployment rates (Akyeampong, 2007) these attitudes, which wane in times of prosperity, allowed for a more egalitarian job market for immigrant women. Replicating this study when unemployment rates are high would test the stability of the gender equality noted in these results.

[4-9] The following studies investigate economic gender differences for the foreign-born by focusing on human capital characteristics and household characteristics: (Antecol, 2000: United States); (Beach & Worswick, 1993: Canada); (Shamsuddin, 1998: Canada). The following studies investigate economic gender differences for the foreign-born by focusing on human capital characteristics and occupational or industry measures (Boyd, 1984: Canada); (Chiswick, Lee & Miller, 2003: Australia); (De Jong & Madamba, 1997: United States).

This study also inspected labour market inequalities between co-ethnic men and women. Study results show that when labour market and household factors are controlled for, immigrant women report similar probabilities of occupational status recovery to their co-ethnic male counterparts. Thus, we can assume that the positioning of non-white immigrant women below non-white immigrant men on the gender/visible minority hierarchy (Boyd, 1992; Li, 2000; *see Chapter 2*) is due to the additive effects of human capital and labour market differences between men and women as well as gendered responsibilities within the home.

Unlike previous studies, which show non-white immigrant women to be disadvantaged in excess of additive gender and race effects, this study does not find non-white immigrant women to be subject to such subordination. However, this discrepancy may be because this study focuses on a different labour market event; the subordination of non-white immigrant women is typically evidenced when inspecting task assignment within low-skill work (Hossfeld, 1994). Simply put, this study inspects the probability of securing work in Canada commensurate in status to that worked prior to migration; an event which ultimately demonstrates parity between co-ethnic men and women within the highly skilled immigrant population when the proper controls are introduced. It may be that extreme cases of subordination towards non-white women are limited to instances when employers are assigning tasks within low status jobs.

Policy Implications

This study reveals the pronounced labour market vulnerability of primary caretakers of children. Despite controlling for a host of socioeconomic variables, child caretakers have lower odds of working a job in Canada commensurate in status to that worked prior to migration when compared to those who do not identify as the primary caretaker of children. Since women are more likely to be caretakers of children than men (Corman & Luxton, 2007), this barrier has gendered economic ramifications. This study parallels findings from other studies that hiring help with childcare and the maintenance of the domestic home is an expense that immigrant women (families) cannot afford in Canada (Preston & Man, 1999; Salaff & Greve, 2004). This paired with other obstacles (navigating professional association requirements, transportation issues, etc.), results in the substantial unemployment and underemployment of caretakers.

In 2003, de Wollf outlined a host of government initiatives that if implemented could impart positive change on the work-life balance of caretakers of children and elders. In this thorough analysis, de Wollf (2003) notes the following public policies as essential to alleviate strain on Canadian homes where caretaking occurs: *For new parents:* Increasing EI benefits to 100% of wage; extending parental leave for single parents; establishing childrearing leave; extending the leave for parents of children with disabilities *Child care and education:* national early child education and care (ECEC) program; subsidies for all children in registered ECEC programs; after school programs; six week compassionate leave in all provinces/territories *Adult and Elder Care:* quality,

accessible health care; quality, affordable home care; adequate public pension; adequate CPP, EI and provincial disability programs.

By relieving the childcare strain that currently burdens families, and in particular women, real change to women's economic opportunities may be realized (Lefebvre & Merrigan, 2008). As noted for the native-born population, government subsidized childcare increases women's employment rates, the number of hours and weeks worked per year and total earnings (Lefebvre & Merrigan, 2008). Ultimately, affordable childcare enables women to focus on employment. Extrapolating these native-born trends to the sample at hand, government subsidization of childcare may offer the support needed by new immigrant families and in particular immigrant mothers, thus allowing them to focus on finding employment commensurate in status to that worked prior to migration.

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Chapter 5
General Discussion and Conclusions

The economic wellbeing of immigrants is often discussed in terms of average assimilation times: how long does it take for an immigrant cohort to establish themselves in the Canadian labour market? (Bloom, Grenier and Gunderson, 1995; Borjas, 1985; 1995; Frenette & Morissette, 2005; Grant, 1999; Waslander, 2003). Although labour market discrimination towards non-white immigrants is accepted as a potential contributor to the poor labour market returns to foreign human capital for recent immigrant cohorts (Bloom, Grenier and Gunderson, 1995), investigation of specific group outcomes are rarely considered. Time to assimilation estimates continue to be conceptualized as cohort averages; a consequence perhaps of official views that immigration should benefit the Canadian economy.

The empirical chapters in this dissertation reveal the importance of considering immigrant outcomes in terms of multiple axes of inequality. An average cohort effect does not adequately reveal the consequence or advantage of particular subject positions. Specifically, it does not speak to the pronounced privilege of white immigrant men in the Canadian labour market or the substantial disadvantage faced by non-white immigrant women. Unfortunately, the practice of averaging immigrant labour market experiences minimizes the advantage that is, and probably always has been, afforded white immigrant men.

The first empirical study in this dissertation (Chapter 2) illustrates how the occupational status recovery trajectory changes when the intersection between

gender and visible minority status is considered. The drop in occupational status for white immigrant men is much shallower and their recovery trajectories are more favourable compared to other groups. Linking these trends to the assimilation literature, it is reasonable to conclude that white immigrant men appear to assimilate into the Canadian labour market more quickly than any other group, while the opposite is apparent for non-white immigrant women. This conclusion is also supported by the predicted probability estimates which were calculated while controlling for human capital differences between groups.

A major concern for Canadian labour market analysts is that studies based on census data cannot account for class of entry (Hiebert, 2006). As such, analysts are hesitant to interpret group disparities in labour market performance as anything but a consequence of skills not being assessed prior to migration (Bloom, Grenier & Gunderson, 1995; Hiebert, 2006). Disadvantages plaguing women are typically minimized due to the assumption that they enter Canada as dependents to their principal applicant husbands. Chapter 2 addresses this concern by focusing on two groups of highly skilled immigrants: 1. those who hold university credentials prior to entry (i.e., high skill-set level) and, 2. principal applicants to Canada's skilled worker's program (i.e., assessed quality of skills).

Results from this first empirical chapter demonstrate that even when analysis is limited to principal applicants, women still emerge with lower odds of occupational status recovery when compared to men, a result that cannot be attributed to inferior skill sets based on non-assessment by Canadian officials. Additionally, the near identical gender effect for the two groups speaks to the

persistence of gendered labour market barriers despite the apparent advantage of having skills assessed prior to entry.

Chapter 3 demonstrates that occupational status recovery performance for highly skilled immigrants does appear to be contingent upon ethno-racial background, particularly in the unregulated IT field. When the highly skilled immigrant group is considered as a whole (i.e., all occupation groups), the odds of occupational status recovery appear to be dependent upon the combination of ethno-racial background and credential source. Regardless of skin colour, immigrants who hold *western* credentials perform similarly. However, white immigrants demonstrate an advantage over non-white immigrants when university credentials are earned in a *non-western* country. Thus, it appears that when the highly skilled immigrant population is considered as a whole, white immigrants have an advantage.

This advantage is even more apparent however when the odds of status recovery for foreign-trained engineers and IT professionals are considered. Although foreign-trained engineers perform similarly regardless of credential source or ethno-racial background, a white advantage is evident within the IT profession. In this case, white immigrants, regardless of credential status as western or non-western, outperform all other groups, even non-white immigrants who have western credentials. I suggest that the informal hiring process within the IT industry (and other unregulated fields) affords white immigrants greater opportunities; a result of the subjective nature of credential quality assessments by employers. Ultimately, this chapter reveals a tension in the literature: do western

credentials provide non-white immigrants protection from labour market discrimination?

Further investigation into the protective quality of western credentials is called for given the pattern of results within the third chapter as well as inconsistencies in the field. Dietz, Esses, Joshi and Bennett-AbuAyyash (2009) demonstrate that non-white immigrants fare as well as whites when holding Canadian credentials or foreign (i.e., South African) credentials that have been recognized. However, when credentials are not accredited, the skills of white applicants are favoured over non-whites. This example demonstrates the protective quality of credentials that are recognized or accredited. In a different field study, Oreopoulos (2009) tested whether employer call-back rates vary depending on elements within applicant résumés such as nationality, languages spoken, where undergraduate credentials and work experience were earned, and surnames. Results from this study demonstrate the favouring of British immigrants over Chinese, Indian and Pakistani applicants by Canadian employers. Even when credentials and work experience are earned solely in Canada, applicants with British surnames receive 40% more call-backs than applicants with non-European surnames. This study shows that non-Anglo applicants experience employment barriers even when holding Canadian credentials. Although the effect of Canadian credentials was not examined in this dissertation, western credentials were shown to have a protective effect for non-white immigrants when the entire population of highly skilled immigrants was examined, and a null effect when the labour market outcomes of IT professionals

were examined. Future projects may want to inspect whether the protective effect of western credentials is specific to particular occupations or even different labour market outcomes (i.e., job call-backs versus securing a job).

Interestingly, both Dietz et al. (2009) and Oreopoulos (2009) focus on hidden discrimination as job applicants remained invisible to the employer in both studies. Instead, employers were presumed to have used applicant surnames and location of education as presented on résumés as a proxy of applicant nationality, ergo visible minority status. It is important to note my work does not identify the point or location of discrimination within the job search process. It is unknown whether the non-white immigrants in this study were granted interviews but not jobs or whether they were even offered interviews in the first place.

Chapter 4 concentrates on the underperformance of immigrant women relative to immigrant men. Upon establishing a baseline gender model, the impact of human capital differences, occupational sex segregation, and barriers present in the domestic home were considered for the highly skilled immigrant population as a whole and for co-ethnic men and women. The cause for the female disadvantage noted within the first two empirical chapters was answered within the third: labour within the domestic home hampers women's ability to recover from occupational status losses as a result of migration to Canada. Once household characteristics, including childcare, were entered into the model, gender differences were negligible and non-significant.

Despite reports from immigrant women who make the connection between substantial underemployment as contingent upon responsibilities within the

domestic home, the claim that increased domestic labour is responsible for immigrant women's disadvantaged position suffers from endogeneity concerns. Results in this final empirical chapter are unable to answer the question: Are caretaking responsibilities responsible for the decreased labour market success of women identifying as the primary caretaker of children or, are these caretakers somehow qualitatively different from women who do not take care of children?

Limitations of the dissertation

One notable limitation with my dissertation is that analysis is limited to the first four years of the immigrant settlement experience. Thus, there is concern that this follow-up period is not lengthy enough to be able to make conclusive statements about general assimilation patterns or emergent group inequalities. It is possible that those who report lower odds of occupational status recovery in the first four years will experience an upswing in subsequent years, causing group inequalities to dissipate.

This concern is somewhat mitigated by the knowledge that one of the best predictors of eventual immigrant economic performance is the economic wellbeing of immigrants during the first few years of settlement due to scarring effects (Frenette & Morissette, 2005). Additionally, European researchers show that low-status "survival jobs" do not act as intermediaries to better future jobs. Instead engagement in low status work has been shown to have a negative impact on future job prospects (OECD, 2002; Scherer, 2004). Further still, Barry Chiswick, an authority on issues of immigrant assimilation, recently concluded

that the four-year follow-up term of the Longitudinal Survey of Immigrants to Australia (LSIA), a sister study to the LSIC, provided enough information to be able to discuss general trends with respect to occupational status recovery (Chiswick, Lee & Miller, 2005). Therefore, although it is possible that the trends noted within each chapter reflect mere blips in the life course of a worker, it is reasonable to conclude that the sizeable drops in occupational status as experienced by some groups will prove insurmountable even with continued time in Canada.

Another limitation of this dissertation is that it does not account for activities that people engage in when they are not participating in the labour market. Language training, pursuing credential recognition within regulated fields, attending school, or caring for family are activities that impact future employment opportunities. Future research may want to investigate how engagement in these activities impacts the future success of highly skilled immigrants in host labour markets.

Dissertation results may also suffer from measurement concerns. Immigrants who reported a mother tongue or predominately spoke a language in the home other than English or French were asked to estimate their conversational capabilities in Canada's official languages as well as their written/reading comprehension. Since these estimates depend on self-assessments there is concern that the language proficiency measure in the LSIC is biased due to respondent tendencies to either over or under-estimate their abilities. This limitation of the

data means that study results may be biased due to differences in self-perception of language proficiency.

Another concern, which impacts the measurement validity of the outcome variable, is the assumption that a Canadian job that shares the same occupational title to a job in China, India, the Philippines or any other immigrant source country also shares the exact same skill-set. For example, even though one in five respondents worked as an engineer before coming to Canada, what this occupational title represents in China, India or the Philippines with respect to training, knowledge and technological experience may vary dramatically when compared to the Canadian context. Thus, there is a concern that the job title "engineer" is merely a catch-all for persons who are located in a similar type of job, but does not speak to the quality or exact nature of the job-holder's skill-set. Group differences in occupational status recovery as noted in this dissertation may represent nothing more than the qualitative difference between immigrants who share the same job title. Although this does present as a possible limitation of the dissertation, a number of findings cannot be explained based solely on this logic. For example, it would be difficult to explain the underperformance of non-white IT professionals with western credentials compared to white IT professionals with non-western credentials as a product of skill-set differences between workers with the same pre-migration job title, as one would have to accept that IT credentials from non-western countries (e.g., Romania, Russia, Ukraine) are superior to those from western countries (e.g., the United States, United Kingdom).

Finally, sample attrition, a common problem with longitudinal studies, also presents as a limitation to study conclusions. Between the first and third waves of data collection, approximately 37% of respondents discontinued participation in the LSIC study (Houle & Schellenberg, 2010).[5-1] Sample attrition may be indicative of a number of scenarios. A dominant perspective however is that sample attrition is a result of participation refusal or return migration due to dissatisfaction with life in Canada. If this is the case, the LSIC would have an over-representation of "success stories" – those who are satisfied with their migration experience – at the end of data collection. Ultimately, this sample loss would mean that the final group of respondents is not representative of the immigrant cohort who entered Canada between October 1, 2000 and September 30, 2001.

Concerned with the impact of sample attrition on the generalizability of study results, Houle and Schellenberg (2010) compared baseline characteristics of respondents who participated in all three waves of data collection with baseline characteristics of those who refused to participate or were lost to follow-up by study end. Demographic and labour market characteristics as well as subjective assessments of life in Canada by the end of the sixth month in Canada for these two groups were compared. Overall, just as many people who reported complete satisfaction with life in Canada at the six-month mark remained in the study (18.7%) as those that did not (18.0%). Similarly, 1.4% of those who remained in

[5-1] Calculation of sample attrition rate varies across studies that use the LSIC depending on whether a weighted or unweighted sample was used. Studies reporting a 36% attrition rate correspond with an unweighted sample (7,716 respondents of the original 12,040 remained at the end of data collection) while an attrition rate of 37% corresponds with a weighted study sample.

the LSIC study reported complete dissatisfaction at the six-month mark, a proportion similar to that of the group who did not complete the LSIC study (1.3%). In the end, Houle and Schellenberg (2010) are struck by the similarity of the two groups, especially with respect to labour market characteristics: "it is the **lack** of variability across occupation and education categories that is most striking" (p.19). Ultimately, Houle and Schellenberg (2010) attribute sample size attrition as a consequence of the highly mobile nature of immigrants:

> All in all, recently landed immigrants are a highly mobile population (Hou 2007), and locating each LSIC respondent two and again four years after landing was a challenge. Yet even though the LSIC has an attrition rate of 37%, there is no evidence to indicate that this introduced a systematic bias in reported assessments of life in Canada. (p.20)

Policy Implications

This dissertation reveals the significant under-usage of immigrant skills in the Canadian labour market. Although opinions abound as to whether the lack of foreign skill utilization is warranted, fully maximizing the potential of newcomers is beneficial from both an economic and social standpoint (Reitz & Banerjee, 2007). To address this under-utilization, Reitz (2005) presents three options: 1. accept the situation and hope that immigrant children will fare better 2. reduce the flow of immigrants into Canada and, 3. effect institutional change to better use immigrant skills. This latter approach is one that others have also voiced as an effective approach (Weiner, 2008) and one that various levels of government have already embarked upon.

Suggestions for better integration of immigrant skills into the Canadian labour market have been made by Reitz (2005), Weiner (2008) and Alboim, Finnie and Meng (2005). A summary of their suggestions include: improved communication about labour market realities for immigrants who are considering migrating to Canada; implementing bridging programs so that foreign-trained professionals can gain Canadian experience and build occupation-specific social networks; supporting agencies that increase public, including employer awareness about issues impacting skilled workers in Canada; and remuneration for employers committed to employing immigrants in fields where skills could be better utilized.

These recommendations address the underutilization of immigrant skills at a general level. The necessity of specialized programs within the highly skilled immigrant population is recommended by this dissertation as it demonstrates the vulnerability of particular groups. This concern is also raised by Weiner:

> [T]here are indications that the disadvantage that certain groups of Canadians have had to face historically (e.g., women, visible minorities and persons with disabilities) is compounded in the case of newcomers (Li 2001; Preston and Murnaghan 2005). Program evaluation must therefore include collecting information that can be analyzed to determine if the experience of male and female, able bodied and disabled newcomers differs. Since a large majority of newcomers are members of visible minorities, this group is likely to be studied, but it would be even more helpful to analyze the data in terms of ethnicity and country of origin, not just race" (cited in Weiner, 2008, p.33).

Whilst program changes aimed at the general skilled immigrant population will no doubt effect positive change for vulnerable groups, it is also important to implement programs that will address needs unique to these groups. For example, Chapter 4 demonstrates the difficulties of balancing childcare demands with securing appropriate work. Additionally, Chapter 3 reveals that inequalities within the unregulated occupations, such as those in the IT sector, could improve from state involvement either with respect to credential assessment or the development of bridging programs.

As mentioned earlier in this discussion section, results from this dissertation support claims that non-European immigrants, specifically newcomers from the People's Republic of China, South Asia and the Philippines, face discrimination by employers. However, unlike Oreopoulous' study (2009), which demonstrates discrimination early on in the hiring process (i.e., screening of applicant résumés), the results from this dissertation are unable to determine the exact point at which discrimination occurs. Regardless, it is worth highlighting strategies that may help address discriminatory hiring practices, whether during the screening process or later on.

According to Dietz et al. (2009), discriminatory hiring decisions are usually a result of implicit or subtle biases and that "blatant discrimination is a thing of the past" (p.36). When foreign credentials are determined to be equivalent to Canadian credentials, non-European applicants do not appear to face a disadvantage (Dietz et al., 2009). If this is indeed the case, one of the most effective strategies to addressing discriminatory hiring practices could be

encouraging and facilitating the credential recognition process. One way of encouraging this process may be to incorporate credential recognition as a necessary step prior to migrating to Canada, especially for those applying as skilled immigrants (Dietz et al., 2009). Credential assessment is already a mandatory component for applicants wishing to migrate to Australia (Alboim, Finnie & Meng, 2005). Of course such a strategy is only effectual if Canadian employers are indeed more inclined to hire non-European immigrants once credential quality concerns are addressed.

Different strategies are necessary however if Canadian employers discriminate against non-European applicants regardless of where credentials are from (Oreopoulos, 2009). Employers who discriminate against particular ethnic or cultural groups may do so because they are concerned that cultural and/or language barriers will compromise relationships with co-workers or clients. In this case, it may be necessary for the government to coordinate integration programs such as internships. Internships coordinated by Career Bridge (a self-sustaining program that began as a pilot study funded by the Ontario government) in the Toronto area have demonstrated great success in facilitating immigrant employment in desired fields (Weiner, 2008). As of January 2007, Career Bridge reported an impressive 80% success rate in finding immigrants permanent employment in their field (Alboim & McIsaac, 2007). This success is felt to be due to the direct involvement of employers (Alboim & McIsaac, 2007). Specifically, internships allow immigrants to develop job-related skills and gain

insight into Canadian work culture while alleviating the risk usually assumed by the employer when making a hiring decision.

Another strategy for bettering the employment prospects of highly skilled immigrants is to recognize and reward those companies and employers who do have anti-racist hiring strategies in place. ALLIES, a joint initiative of The Maytree Foundation and the J.W. McConnell Family Foundation publishes an annual list of the *100 Best Employers for New Canadians*. These companies are celebrated for:

> offering programs that specifically assist employees who are recent immigrants to Canada; taking steps to reduce employment barriers for recent immigrants, such as by recognizing foreign educational credentials and experience; assisting new employees who have foreign professional or educational credentials in getting these qualifications formally recognized in Canada; offering "onboarding" programs, such as internal coaching or mentoring, to help new employees who are recent immigrants understand the Canadian workplace; and training managers and employees in cross-cultural issues or inclusiveness to help create a welcoming and productive environment for employees who are recent immigrants.[5-2]

[5-2] Information retrieved February 15, 2011 from: www.canadastop100.com/immigrants

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