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Licensing Requirements and Occupational Mobility Among Highly Skilled New Immigrants in Canada
Exigences de pratiques professionnelles et mobilité professionnelle parmi les nouveaux immigrants hautement qualifiés au Canada
Exigencias de autorización para el ejercicio y la movilidad profesional: la situación de los nuevos inmigrantes altamente calificados en Canadá

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Résumé de l'article

La présente étude compare les trajectoires professionnelles d'immigrants hautement qualifiés dans les professions règlementées par rapport à celles non règlementées, depuis leur occupation pré-migration, puis leur premier emploi au Canada et, enfin, les emplois détenus par la suite. Les exigences en matière de reconnaissance des qualifications professionnelles dans les professions réglementées sont susceptibles d'influer sur les trajectoires professionnelles des nouveaux immigrants du fait qu'elles ont des effets sur la manière dont les employeurs évaluent leurs qualifications. Cette étude utilise un modèle de courbe de croissance (MCC) ainsi que les données d'une enquête unique qui contient de l'information détaillée sur les expériences des nouveaux immigrants au Canada : *L'Enquête longitudinale auprès des immigrants du Canada* (ELIC).

Nos résultats montrent que les immigrants qui travaillaient dans des professions réglementées avant leur migration au Canada et qui sont incapables de trouver de l'emploi dans ces professions au Canada, accusent une plus grande perte de statut professionnel à leur arrivée que ceux qui travaillaient dans des professions non réglementées dans leur pays d'origine. De plus, leur progression professionnelle avec le temps n'est pas plus rapide que celle de leurs homologues dans des professions non réglementées. Ceux qui travaillaient dans des professions non réglementées avant leur arrivée, mais qui ont trouvé de l'emploi dans des professions réglementées au Canada, ont connu une amélioration de leur statut professionnel d'après-migration. Enfin, pour ceux qui travaillaient dans une profession réglementées dans leur pays d'origine *et* qui ont été en mesure de trouver de l'emploi dans une profession réglementée au Canada, leur position professionnelle initiale au Canada est restée semblable à celle qu'ils détenaient dans leur pays d'origine et l'on observe peu ou pas de changement dans leur statut professionnel avec le temps.

Ces résultats mettent en lumière l'importance de s'assurer que le processus de reconnaissance des titres professionnels soit facilité pour les nouveaux immigrants. Ils montrent clairement que les immigrants qui peuvent accéder à une profession réglementée dès leur arrivée s'en tirent beaucoup mieux en termes de statut professionnel que ceux qui n'auront pas réussi à se faire reconnaître leurs qualifications.

Licensing Requirements and Occupational Mobility Among Highly Skilled New Immigrants in Canada

Rupa Banerjee and Mai Phan

In this study, we examine the effect of licensing requirements on the occupational mobility of highly skilled new immigrants in Canada using longitudinal data. We find that immigrants who worked in regulated professions in their home country, but unregulated fields in Canada, experienced significantly greater occupational downgrading than those who worked in unregulated professions prior to migration. Immigrants who worked in regulated fields in their home country who were able to find work in regulated fields in Canada did not experience any occupational downgrading after migration. Policy implications of these findings are discussed.

KEYWORDS: high skilled immigrants, occupational licensing; immigrant integration; occupational mobility.

Introduction

New immigrants in Canada continue to face significant difficulty finding employment in line with their qualifications and experience. There are numerous factors that contribute to immigrants' labour market disadvantage, including unfamiliarity with Canadian workplace practices, the devaluing of foreign credentials and work experience (Aydemir and Skuterud, 2005; Basran and Zong, 1998; Green and Worswick, 2002; Li, 2001; Reitz, 2001), racial discrimination and other systemic barriers (Banerjee, 2008; Frenette and Morissette, 2003; Teelucksingh and Galabuzi, 2005).

For highly skilled immigrants, occupational licensing requirements are often cited as a major barrier to labour market integration (Hall and Sadouzai, 2010; Novak and Chen, 2013). Significant resources have recently been put into place in several Canadian provinces to improve the labour market integration of foreign-

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trained professionals within regulated professions. For example, Ontario enacted the *Fair Access to Regulated Professions Act* (FARPA) in 2006 to establish clear and objective licensing requirements for all applicants, with a special emphasis on improving access for foreign-trained applicants. Less emphasis has been placed, however, on strategies to improve the labour market position of highly skilled immigrants outside of the regulated professions. The aim of the present study is to empirically examine whether occupational licensing requirements are indeed a major barrier to labour market integration for highly skilled immigrants.

To date, most studies of immigrant integration have tended to compare immigrants with the native-born. From these studies we know that immigrants within regulated occupations face significant disadvantage relative to their native-born counterparts (see, for example, Boyd and Thomas, 2001; Boyd and Schellenberg, 2007; Zietsma, 2010). However, there is less evidence for whether immigrants in regulated occupations face greater disadvantage than those in unregulated occupations. To that end, this study compares the occupational trajectories of highly skilled immigrants in regulated occupations to those outside of the regulated occupations from their pre-migration occupation, to their first job in Canada, and to subsequent jobs. Licensing requirements are likely to affect new immigrants' occupational trajectories since they have a direct effect on how employers assess qualifications. Within-group analyses such as this allow us to differentiate the factors affecting immigrant success and are needed to complement studies in which the native-born are used as the control group.

This study utilizes a unique dataset that contains detailed information on new immigrants' experiences in Canada: the *Longitudinal Survey of Immigrants to Canada* (LSIC). The LSIC is an ideal source of data for this study since it focuses exclusively on newly arrived immigrants and provides a wealth of information about pre-migration occupation and labour market experiences over the first four years in Canada. However, since the LSIC was conducted between 2001 and 2005, it predates the enactment of provincial legislation aimed at improving access to regulated professions for immigrants. Therefore, the present study does not aim to provide an evaluation of this legislation. Instead, this study examines the effect of licensing requirements prior to the enactment of legislation such as FARPA. This is important for ultimately assessing the impact of these policies in future studies.

Conceptual Framework

Transferability of skills is known to be a crucial indicator of immigrant labour market adjustment (see, for example, Aydemir and Skuterud, 2005; Chiswick, Lee and Miller, 2005; Green and Worswick, 2002; Li, 2001; Reitz, 2001). A number of factors may affect the transferability of immigrant skills and employers' will-

ingness to recognize foreign experience (Hall and Sadouzai, 2010). For example, destination language proficiency, style of practice and knowledge of local laws and norms may all impede new immigrants' ability to transfer their skills into the new labour market. An additional important determinant of skill transferability lies in occupational licensing requirements. Immigrants employed in occupations that are regulated by professional licensing bodies must go through the extra hurdles of becoming licensed in order to practice in the host country.

In Canada, occupational regulatory bodies are self-governed and set their own standards and practices. They establish requirements for entry to the occupation and determine standards of practice (Goldberg, 2002). About 20 percent of Canadian occupations are regulated by a licensing body (Citizenship and Immigration Canada, 2010). Occupations such as accountancy, architecture, engineering, law, medicine, nursing and teaching are regulated in all Canadian jurisdictions (Zietsma, 2010). In addition, there are international agreements between accreditation bodies to facilitate the recognition of foreign credentials and movement of engineers, architects and accountants between countries with similar educational systems and professional standards.[1]

The theory of occupational licensing indicates that it serves two purposes. First, occupational licensing restricts entry and limits competition within the occupation, thereby raising wages. Second, it provides the consumer with an improved standard of service by eliminating incompetent or fraudulent practitioners and increasing the average skill level within the occupation (Kessel, 2006; Law and Kim, 2005; Leland, 1979). This is particularly important in occupations where public safety or welfare is at stake. The effect of licensing requirements on workers has long been speculated. One theoretical perspective posits that occupational licensing disadvantages minority workers by making entry requirements too costly or by deliberately excluding minority groups (see Federman, Harrington and Krynski, 2006; Frech, 1975). Another theoretical perspective is that licensing requirements may in fact help disadvantaged workers in some cases by legitimizing their skills, particularly in occupations where employers have difficulty determining worker quality (Law and Marks, 2009). As new labour market entrants with less-than-perfectly transferable human capital, recent immigrants are particularly affected by occupational regulation. Numerous studies have found that occupational licensing requirements affect immigrant practitioners differently than native-born practitioners.

Girard and Bauder (2007) conducted a case study of a professional regulatory organization (Professional Engineers Ontario) and concluded that regulatory bodies tend to disadvantage immigrant applicants by requiring the understanding of subtle social and cultural norms that newly arrived immigrants are unlikely to have. A study done by Goldberg (2002) identified four main challenges affecting

new immigrants' access to regulated occupations: 1- lack of pre-immigration licensing information; 2- lack of knowledge of local workplace practices; 3- lack of occupation-specific language proficiency; 4- difficulty in finding bridging programs and work placements. Often new immigrants get caught in a cycle wherein they are unable to become licensed because they do not have the necessary work experience, but they are unable to get that work experience because they do not have their license (Girard and Bauder, 2007). In a detailed analysis of immigrant experiences with occupational licensing conducted by Malatest & Associates Ltd. (2010) for the Ontario Office of the Fairness Commissioner, lack of understanding of the licensing process, cost, length and the requirement for Canadian work experience were listed among the factors that disadvantaged immigrant applicants. George and Chaze (2012) also found that lack of knowledge of the licensing process presented a major barrier to finding appropriate employment for internationally trained engineers.

The barriers that new immigrants face during the licensing process are known to result in adverse employment outcomes. Boyd and Thomas (2001) concluded that foreign-trained engineers are more likely than their Canadian-trained counterparts to be unemployed or be employed in an unrelated occupation. Similarly, Boyd and Schellenberg (2007) found that occupational re-certification created a major barrier for foreign-trained physicians and engineers, particularly those from Southeast Asia and East Asia. Zietsma (2010) found that only 24 percent of immigrants trained in regulated occupations were working within their professions. Among the Canadian-born within regulated occupations, the match rate was 62 percent. Even after 10 years in Canada, foreign-trained individuals trailed the match rate of their Canadian counterparts by 27 percentage points. A large proportion of the un-matched individuals were working in lower-level clerical or sales and service occupations (Zietsma, 2010).

Similarly, Girard and Smith (2012) found that newly arrived immigrants are much less likely to work in regulated occupations than their native-born counterparts. In particular, new immigrants arriving from Asia, Latin America and the Caribbean were the least likely groups to work in regulated fields. Although a majority of recent immigrants from regulated occupations had checked if their credentials are recognized in Canada, about 40% had difficulties getting their credentials accepted. In particular, 54% of those in healthcare occupations had difficulty, compared to 35% of those in engineering and science (Zikic *et al.*, 2011).

While previous studies have clearly shown that immigrants trained in regulated occupations face greater difficulty in the labour market than their Canadian-born counterparts, there is little empirical evidence of how these individuals fare relative to other highly skilled immigrants trained in unregulated occupations.

One recent study, by Hall and Sadouzai (2010) did examine this issue specifically for recent immigrants in the high-tech sector and found that those with foreign experience in unregulated hi-tech occupations were more likely to find matched employment in Canada, relative to those from regulated hi-tech occupations.

In the present study, we compare the occupational trajectories of highly skilled immigrants trained in regulated occupations to those trained in unregulated occupations over time. From one theoretical perspective, new immigrants trying to enter regulated occupations may be especially disadvantaged since the licensing process poses an extra barrier to entry into the occupation. This may lead to both unemployment and underemployment, as these immigrants turn to 'survival jobs' within unrelated fields. From another theoretical perspective, new immigrants may enjoy greater success within regulated occupations since licensing bodies use standardized and highly codified criteria for assessing qualifications and often have special arrangements for assessing foreign credentials. If an immigrant is able to obtain their occupational license, they can signal their human capital to potential employers and improve their chances of getting a job in their field. Within unregulated occupations, employers often evaluate individual applicants on an ad-hoc basis. In this type of assessment, new immigrants may face considerable difficulty demonstrating the quality and applicability of their previous credentials and experience. Thus, the attitudes and prejudices of the employer may have greater bearing on the selection process (Reitz, 2007).

Due to the conflicting theoretical perspectives on this issue, the relationship between licensing requirements and labour market integration among highly skilled immigrants will be determined empirically in the present study.

Data and Measures

This study uses data from the Longitudinal Survey of Immigrants to Canada (LSIC), conducted by Statistics Canada and Citizenship and Immigration Canada to examine how new immigrants adjust to Canada in the first 4 years after arrival. The LSIC consists of immigrants who landed in Canada between October 1, 2000 and September 30, 2001, were aged 15 or older, and who applied for residency from abroad. Respondents were interviewed 6 months upon arrival to Canada, and were followed again at 2 and 4 years. The 3rd wave of LSIC data contains only those who have completed three rounds of interviewing and were still in Canada after 4 years.[2] The survey provides detailed information about pre-migration socio-economic activities (such as education and occupation) and post-migration experiences (Statistics Canada, 2003).

In order to focus on highly skilled immigrants, we include only those respondents who worked in a professional or managerial occupation in their country of

origin. Furthermore, we restrict our analysis to those who were between the ages of 25-64 years at the first interview. Lastly, because we are interested in occupational mobility, we exclude those respondents who did not hold a job in any wave of the LSIC. These restrictions result in a sample of 2,905 individuals.

The main outcome variable in this analysis represents a repeated measure of relative occupational status. Although most previous studies of immigrant employment integration have focused on wage as the primary outcome of interest, we focus on occupation because it captures not only socioeconomic position, but also skill utilization, and therefore is an important indicator of immigrants' labour market success. Wage alone may be a misleading indicator of immigrant integration, since immigrants could improve their wages by accepting higher paying positions that are higher risk and that do not match their previous skills and qualifications[3].

In the LSIC, pre- and post-migration occupations are coded using four-digit *National Occupational Classification 2001* (NOC) codes[4]. The categorical nature of occupation and the large number of occupational titles contained in the LSIC makes it difficult for us to directly assess the occupational status of the immigrants in the sample. Therefore, to facilitate our analysis, we convert the NOC codes into a continuous summary measure of occupational status.

There are two general approaches to convert categorical occupational titles into an index of occupational status. The first approach produces status-based scales by asking individuals to rank various occupations by their perceived level of social status (see, for example, Pineo and Porter, 1967; Goyder and Frank, 2007). The second approach does not rely on subjective opinions of status and, instead, uses aggregate educational and earnings characteristics of individuals working in various occupations to determine their rank order (see, for example, Nam and Powers, 1968, 1983; Nam and Boyd, 2004). This approach assumes that education and income are valid indicators of objective socio-economic status.

While there have been critiques of both approaches (see Hauser and Warren, 1997), the present study uses the latter approach since it provides a more objective measure of occupational status and avoids the problems associated with using subjective opinions of status. Specifically, we use the Nam-Powers-Boyd scale (adapted for the NOC 2001 by Boyd, 2008) to convert the categorical occupational codes contained in the LSIC into a continuous measure of socio-economic status. The Nam-Powers-Boyd scale was created by using regression models that took into account the required level of education and earnings potential for each occupational title (see Boyd, 2008 for a detailed description of the methodology). In the Nam-Powers-Boyd scale, occupational status scores range from 0-100. For example, Specialist Physicians received a

score of 100, while Food Counter Attendants and Kitchen Helpers received a score of 9[5]. In our study, each respondent receives an occupational status score for the job last held in the home country (pre-migration), and for the main job[6] held in Canada at each wave.

The outcome variable is then created by taking the difference between the status score of the main job held at each wave (at 6 months, 2 years and 4 years post-migration) and that of the last job held in the home country. This produces a measure of relative occupational status at each wave. Higher negative scores reflect greater drops in occupational status, while positive scores reflect gains in occupational status following immigration.

The main explanatory variable of interest is the regulation status of the pre-migration occupation. We determine occupational regulation status by examining whether the respondent's pre-migration occupation would be regulated by a professional licensing body within the province in which they live in wave 1 of the survey. We utilize the table of regulated and unregulated occupations by province/territory compiled and presented by Girard and Smith (2012)[7]. We focus on the regulation status of the pre-migration occupation because most highly skilled immigrants in the LSIC indicate that they intend to remain in their pre-migration occupation after settling in Canada (Statistics Canada, 2005). Pre-migration occupations that are identified as regulated in the province/territory in which the respondent resides are coded as '1', and those that are not regulated are coded as '0'. Occupations that are unregulated form the reference category[8].

Working in a regulated profession is known to be associated with improved labour market outcomes (Kleiner and Krueger, 2008). Therefore, we also include the regulation status of the respondent's main job in Canada in each wave as an explanatory variable. This is coded as '1' if their main job is regulated within the province of residence and '0' if their main job is not regulated. Lastly, we include the interaction term between the regulation status of the pre-migration occupation and the regulation status of the respondent's main job in Canada. This interaction term allows us to examine whether those who worked in a regulated profession prior to migration *and* found work in a regulated field after migration gain an additional benefit in terms of occupational mobility.

Numerous other factors that may affect one's ability to integrate into the Canadian labour market are also controlled for in the analysis including the age at arrival[9], years of education at arrival[10], immigration category[11], savings brought at arrival[12], self-reported language fluency in English or French[13], participation in post-migration education[14], marital status[15], and number of children[16]. Region of origin[17] is included to take into account the effects of source country on immigrants' occupational integration, such as commonality of institutions and social customs between Canada and other Anglo-Saxon countries.

Analytical Strategy

Since the LSIC has a longitudinal panel design, we utilize growth curve modeling (GCM) to estimate the effect of occupational regulation status on occupational trajectories over time. Growth curve models take into account the lack of independence in error terms in longitudinal data and have numerous advantages to more traditional methods of studying change such as fixed effects regression (Raudenbush and Bryk, 2002). Growth curve models estimate both intra-individual trajectories and inter-individual differences in trajectories, and allow time-varying covariates as well as the inclusion of individuals even if they do not have data for all time points (Singer and Willett, 2003). Using GCM, we model the effects of pre- and post-migration occupational regulation status on immigrants' occupational mobility while controlling for a vector of other factors. The random intercept and random slopes model is used to allow for initial differences in relative occupational status to vary, and for differences in changes to relative status to vary between individuals.

Growth curve models are estimated at two levels. The level 1 model estimates each individual's occupational mobility over time. We include all time varying explanatory variables in the level 1 model, including wave (representing time since migration), as well as the regulation status of the respondent's main job in Canada at each wave. The value of this variable may change at each time period if the respondent changes jobs between waves. All time-varying control variables are also included in the level 1 model.

The main level 1 model is specified as follows:

$$Y_{ti} = \pi_{0i} + \pi_{1i}\,(wave_{ti}) + \pi_{2i}\,occregstatCanada_{ti} = \pi_{3i}X_{ati} + \varepsilon_{ti}$$

In this model, Y_{ti} is the relative occupational status of individual i in wave t, which is derived by taking the difference between the status score of the main occupation held at each wave and that of the last occupation held in the home country. The variable *wave* represents the wave of survey, in which wave 0 represents six months in Canada, wave 1 represents two years in Canada and wave 2 represents four years in Canada. The variable $occregstatCanada_{ti}$ represents the regulation status of the main job held in Canada at each wave and X_{ati} represents a vector of all other time-varying control variables such as marital status, number of children, official language fluency, and whether the respondent was taking an educational course during the wave.

In the level 1 model, π_{0i} represents individual i's relative occupational status at 6 months in Canada (intercept), and π_{1i} represents individual i's rate of change in relative occupational status per wave (slope). The term π_{2i} represents the effect of the regulation status of the main job in Canada and π_{3i} represents the effect

of all other time-varying control variables on the occupational trajectory. Lastly, ε_{ti} is the within-person error term.

At level 2, these individual growth parameters become the outcome variables and between-person differences in occupational mobility are examined. The level 2 models enable us to determine whether the regulation status of the pre-migration occupation affects post-migration occupational trajectory:

- $\pi_{0i} = \beta_{00} + \beta_{01}\, occregstatPreMigration_i + \beta_{02}\, X_{bi} + \upsilon_{0i}$
- $\pi_{1i} = \beta_{10} + \beta_{11}\, occregstatPreMigration_i + \beta_{12}\, X_{bi} + \upsilon_{1i}$
- $\pi_{2i} = \beta_{20} + \beta_{21}\, occregstatPreMigration_i$
- $\pi_{3i} = \beta_{30}$

In these Level 2 models, $occregstatPreMigration_i$ indicates whether the pre-migration occupation is regulated in the province of landing. X_{bi} is a vector of time-invariant control variables—in this case age at arrival, years of education at arrival, savings at arrival, immigration category and region of origin. β_{00}, β_{10} and β_{20} are the estimates of the Level 1 parameters when the time-invariant predictors are zero (for the reference case). β_{01} and β_{11} represent the additional effects of pre-migration occupational regulation status on the intercept and slope, while β_{21} indicates the interaction effect between pre-migration occupational regulation status and post-migration occupational regulation status. This interaction term allows us to examine whether those who worked in a regulated profession prior to migration and found work in a regulated field after migration gain an additional benefit in terms of occupational mobility. The terms β_{02} and β_{12} represent the effects of the time invariant predictors on the intercept and slope and the error terms, υ_{0i} and υ_{1i} represent the individual differences in the intercept and slope parameters that are not explained by the Level 2 predictors.

Because male and female immigrants are known to have different labour market experiences (see for example Adsera and Chiswick 2007), we estimate the model separately by gender. However, in order to test whether gender differences are statistically significant, we also conducted a pooled model with gender interacted with the key explanatory variables of interest. All growth curve models in this study are conducted using SAS PROC MIXED, full maximum likelihood, after transforming the data into person-period format[18]. All descriptive statistics and analyses in this study are weighted using rescaled LSIC Wave 3 final weights supplied by Statistics Canada. However, the overall sample N's presented are unweight.

Findings

Selected average characteristics of the sample are presented by gender in Table 1. From this table, we find that the men in the sample are just over 36 years

of age, while the women are almost 35 years of age on average. Both the men and women in the sample have completed just over 16 years of education on average at the time of migration. Just over half of the sample (56.2 percent of men and 54.5 percent of women) participated in some form of continuing education after immigrating to Canada. Self-reported English/French language ability is slightly higher for men on average (3.24 on a scale of 1 to 4) than for women (3.01). The majority of the sample immigrated from East Asia or South Asia, with sizeable numbers also arriving from Africa and Eastern Europe.

About 47 percent of the men in the sample and 60 percent of the women in the sample worked in a profession prior to migration that would have been regulated within their province of landing. When we separate these regulated

TABLE 1

Selected Average Characteristics of the Sample

	Men	Women
N	**1,700**	**1,205**
Age at arrival	36.19	34.95
Years of schooling at arrival	16.83	16.12
Participated in post-migration education	0.562	0.546
Official language ability (1-4)	3.24	3.01
Skilled class (Immigration category)	0.874	0.775
Country of Origin		
Latin America/Caribbean	0.042	0.059
Northern and Western Europe	0.025	0.027
Eastern Europe	0.098	0.118
Southern Europe	0.015	0.028
Africa	0.100	0.070
Middle-East	0.073	0.056
East Asia	0.316	0.350
South East Asia	0.067	0.102
South Asia	0.232	0.160
US, UK, Australia, New Zealand, South Africa	0.032	0.030
Pre-migration occupation is regulated in province of landing	0.471	0.600
Pre-migration regulated occupational field*		
Regulated Engineering/Science	0.355	0.151
Regulated Health	0.036	0.126
Regulated Finance/Accounting	0.035	0.097
Regulated Education/Social Science	0.046	0.226

Source: Longitudinal Survey of Immigrants to Canada; *May not sum to the total in regulated occupations due to rounding.

occupations into specific fields, it is clear that the vast majority of the men within regulated fields are in engineering/science-related professions. For women, the regulated occupational fields are more evenly distributed between engineering/science, healthcare, accounting/finance and education/social science. Because of small sample sizes, we are not able to examine specific occupational fields in our analyses. Instead, we examine the overall effect of working in a regulated versus unregulated profession on post-migration occupational trajectories.

Table 2 presents the proportion of men and women in the sample who intended on working in a regulated occupation in Canada, as well as the proportion actually working in regulated fields in each wave, by pre-migration occupational regulation status. From this table, we find that nearly 84 percent of men and 80 percent of women who worked in a regulated profession pre-migration intended to work in a regulated field after immigrating to Canada. However, in wave 1, only about 26 percent of these men and 18 percent of these women actually worked within a regulated occupation. By wave 3, these numbers increased to 34 percent for men and 27 percent for women. For those immigrants who worked in unregulated professions pre-migration, about 21 percent intended on working in a regulated field once they arrived in Canada. In wave 1 only about 8 percent of these individuals had found work in a regulated field. By wave 3, about 14 percent of the men and 11 percent of the women in this category were working in a regulated occupation.
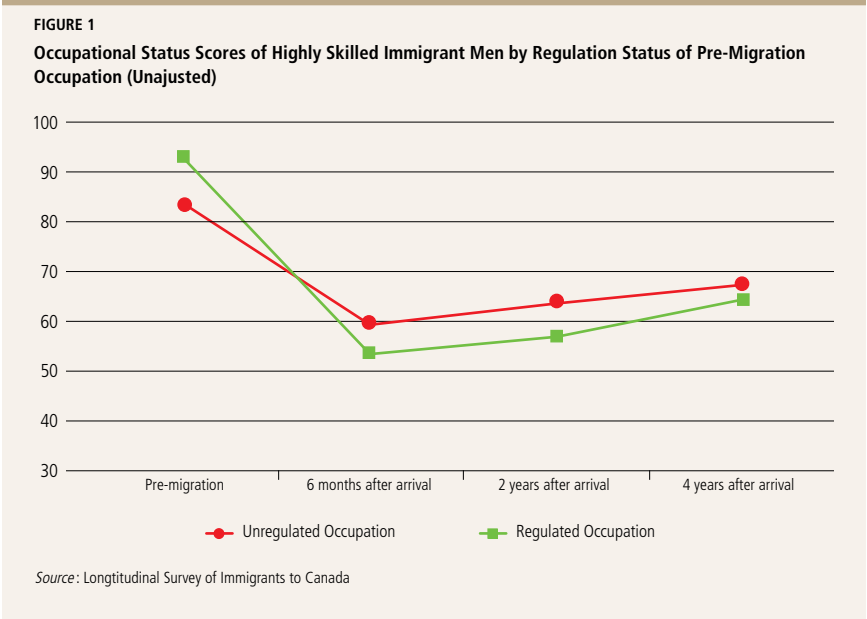
TABLE 2

Proportion Working in Regulated Occupations in Canada by Pre-migration Occupational Regulation Status

	Men	**Women**
N	**1,700**	**1,205**
Pre-migration Occupation is Regulated		
Job wanted in Canada is in regulated occupation	0.837	0.798
Main job in wave 1 is in regulated occupation	0.263	0.180
Main job in wave 2 is in regulated occupation	0.286	0.197
Main job in wave 3 is in regulated occupation	0.343	0.272
Pre-migration Occupation is NOT Regulated		
Job wanted in Canada is in regulated occupation	0.213	0.214
Main job in wave 1 is in regulated occupation	0.079	0.081
Main job in wave 2 is in regulated occupation	0.127	0.094
Main job in wave 3 is in regulated occupation	0.138	0.113

Source: Longitudinal Survey of Immigrants to Canada

Figures 1 and 2 illustrate the unadjusted occupational status scores of the immigrant men and women in the sample from prior to migration, to 6 months after arrival, 2 years after arrival and, finally, 4 years after arrival.

FIGURE 1

Occupational Status Scores of Highly Skilled Immigrant Men by Regulation Status of Pre-Migration Occupation (Unajusted)

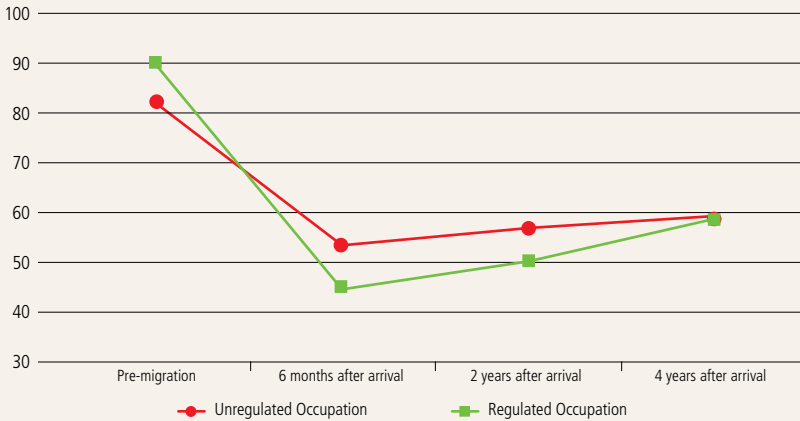*Source*: Longtitudinal Survey of Immigrants to Canada

From Figure 1, we find that immigrant men who worked in regulated occupations prior to migration had higher occupational status scores than those in unregulated occupations. However, after migration these individuals experience a greater decline in occupational status. New immigrants in both regulated and unregulated fields experience some improvement in their occupational status with time in Canada. The unadjusted results indicate that immigrant men from regulated occupations may experience a slightly faster improvement in occupational status over time than those from outside of the regulated occupations.

Figure 2 shows similar results for highly skilled immigrant women. From this figure we find that similar to men, women in regulated occupations had higher occupational status scores before migration. However, the occupational status score of women in regulated fields is slightly lower, on average, than that of their male counterparts. Among those in unregulated occupations, there is little variation in status scores by gender. Women from regulated occupations experience a steeper drop in occupational status after migration than those from outside of the regulated occupations. However, these women also seem to experience faster occupational progression over time.

FIGURE 2

Occupational Status Scores of Highly Skilled Immigrant Women by Regulation Status of Pre-Migration Occupation (Unajusted)

Source: Longtitudinal Survey of Immigrants to Canada

Table 3 presents the growth curve model of relative occupational status by gender after controlling for other factors. The dependent variable for this analysis is the difference between the occupational status of the main job held at each wave and that of the last job held in the home country.

From Table 3, we find that men who worked in unregulated occupations prior to migration experience an initial drop in occupational status of about 13.7 points (p<0.01) after arriving in Canada. These men subsequently experience improvement in their occupational status of about 3.2 points per wave, but this is not statistically significant. Men who worked in regulated professions in their home countries but unregulated occupations in Canada experience a much more significant decline in post-migration occupational status. For these men, occupational status dropped by about 35.8 points (p<0.01) six months after arrival in Canada. Furthermore, their occupational progression over time is not faster than their counterparts from unregulated professions. Men who worked in unregulated fields prior to migration but found jobs in regulated fields in Canada experience an improvement in their occupational status after migration of about 5 points (p<0.01). However, their occupational mobility over time is no different than the reference category. Lastly, for men who worked in regulated professions in their home country *and* were able to find jobs within regulated fields in Canada, initial occupational status scores are similar to their scores in their country of origin, but there is very little change in occupational status with time in Canada.

Among women, the initial drop in occupational status for those who worked in unregulated professions pre-migration is about 15.6 points (p<0.01). Similar

TABLE 3

Growth Curve Model of Relative Occupational Status by Gender, Waves 1-3

	Men	Women
	Coefficient (Std Error)	Coefficient (Std Error)
FIXED EFFECTS		
Intercept (Average relative occupational status score in wave 1)	-13.679*** (3.678)	-15.570*** (4.810)
Covariate Effect on Initial Relative Occupational Status Score		
Pre-migration Occupation is Regulated	-22.076*** (1.407)	-17.945*** (1.833)
Post-migration Occupation is Regulated	18.688*** (2.359)	22.231*** (3.784)
Interaction Between Pre- and Post-migration Occupational Regulation Status	17.321*** (2.909)	16.987*** (4.449)
Slope (Average change in relative occupational status score per wave)	3.241 (1.979)	3.036 (2.360)
Covariate Effect on Change in Relative Occupational Status Over Time		
Pre-migration Occupation is Regulated	0.612 (0.766)	2.489*** (0.897)
Post-migration Occupation is Regulated	-2.382 (1.518)	-5.743** (2.300)
Interaction Between Pre- and Post-migration Occupational Regulation Status	-0.534 (1.858)	1.626 (2.662)
RANDOM EFFECTS		
Intercept v_{0i}	411.210*** (22.350)	447.970*** (30.362)
Slope v_{1i}	60.365*** (5.915)	44.863*** (11.266)
Level 1 Error ε_{ti}	134.31*** (5.299)	111.450*** (5.962)
Number of Observations	*3955*	*2331*
-2 log-likelihood	*34427.0*	*20087.10*

Source: Authors' calculations from Growth Curve Model using the Longitudinal Survey of Immigrants to Canada, controlling for years of education (mean centered), age (centered at 25), participation in post-migration education, country of origin, marital status, number of children, immigration class, English/French language ability and savings at arrival (mean centered).

Significance: ***<0.01; **<0.05; *<0.10

to men, women who worked in regulated fields in their home countries but unregulated occupations in Canada experience a much greater decline in occupational status after migration. For these women, initial occupational status scores in Canada drop by about 33.5 points (p<0.01). But these women seem to experience greater occupational progression over time. Their occu-

pational status scores improve by about 2.5 (p<0.01) points per wave over their counterparts from unregulated occupations. Women who worked in unregulated fields prior to migration but found jobs in regulated occupations after migration enjoy an initial improvement in relative occupational status of about 6.7 points (p<0.01), but these women experience a drop in their occupational status over time of about 5.7 points per wave (p<0.05). Lastly, women who worked in regulated professions prior to migration *and* managed to find work in a regulated field in Canada enjoy an improvement in initial relative occupational status of about 5.7 points (p<0.01). These women also seem to experience some improvement in their occupational status over time, but this is not statistically significant. It should be noted that there are very few individuals in the sample who worked in unregulated fields pre-migration but found jobs in regulated occupations in Canada. Because of the small sample size of individuals in this category, estimates for this group should be interpreted with caution. The results of the growth curve models for men and women are presented graphically in Figures 3 and 4.

In addition to conducting the analyses separately by gender, we also ran a pooled growth curve model with gender interacted by each of our key explanatory variables of interest. This pooled model (results not shown; available from authors upon request) allowed us to test the statistical significance of

FIGURE 3

Occupational Mobility of Immigrant Men by Pre- and Post-Migration Occupational Regulation Status
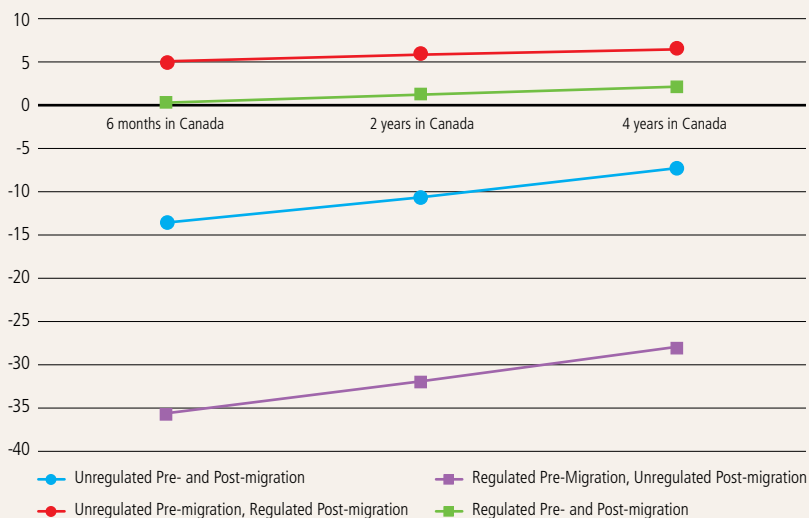
Source : Authors' calculations from Growth Curve Model of relative occupational status using the Longitudinal Survey of Immigrants to Canada, controlling for years of education (mean centered), age (centered at 25), participation in post-migration education, country of origin, marital status, number of children, immigration class, English/French language ability and savings at arrival (mean centered).

FIGURE 4

Occupational Mobility of Immigrant Women by Occupational Regulation Status

Source : Authors' calculations from Growth Curve Model of relative occupational status using the Longitudinal Survey of Immigrants to Canada, controlling for years of education (mean centered), age (centered at 25), participation in post-migration education, country of origin, marital status, number of children, immigration class, English/French language ability and savings at arrival (mean centered).
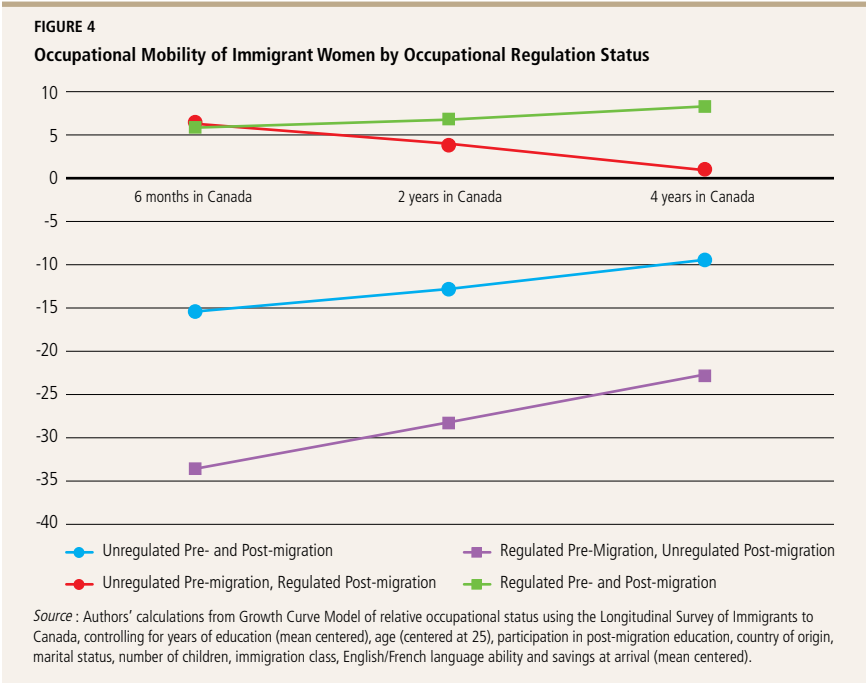
the differences in results by gender. The pooled model indicated that the gender difference in initial relative occupational status among immigrants from unregulated professions is indeed statistically significant. That is, women who worked in unregulated fields prior to migration experienced a significantly greater drop in relative occupational status in Canada than their male counterparts. However, women who worked in regulated professions prior to migration but unregulated occupations after migration enjoyed a slight advantage compared to men in terms of initial relative occupational status. All other apparent gender differences in results were found to be statistically insignificant.

We also examined the effect of pre-migration occupational field on occupational trajectories in order to investigate whether certain regulated fields faced greater barriers in Canada than others. From this analysis (results not shown; available from the authors upon request), we found that immigrants from regulated finance and accounting occupations experienced the least downgrading after migration, followed by those from regulated engineering and science fields. Immigrants from regulated healthcare, social science and education occupations faced the greatest initial downgrading. Furthermore, we found that none of the regulated occupational groups were able to 'catch-up' over time to immigrants from unregulated occupations.

Discussion and Conclusion

The present study examines the effect of occupational licensing requirements on the post-migration occupational trajectories of highly skilled new immigrants during their first four years in Canada. Our findings indicate that immigrants working in regulated occupations prior to migration who are unable to find jobs in regulated occupations in Canada face a significantly greater drop in occupational status when they first arrive than those working in unregulated professions in their home country. This may be because immediately after arrival, immigrants trained in regulated occupations struggle to understand the licensing process and therefore may take menial work to support their families while they attempt to become licensed. The occupational licensing process in Canada is often described by immigrants as being overly long and complicated (Malatest & Associates 2010). This may lead some immigrants to forgo their previous profession altogether and attempt to retrain in a new occupation and work in a "survival job" during this period. Immigrants trained in non-regulated fields do not face this additional obstacle when they first enter the Canadian labour market. Although individual employers evaluate their credentials and experience on an ad-hoc basis, these immigrants have an easier time finding initial work that is relatively closer to the status of their pre-migration occupation.

Our findings indicate that the differentiation between immigrants in regulated and unregulated occupations takes place primarily when they are finding their initial jobs after arrival in Canada. We also find, however, that immigrants from regulated occupations who are unable to find jobs within regulated fields after migration are unable to close the gap over time relative to their counterparts in unregulated occupations through promotions and job change. For those who are able to find initial work within a regulated occupation in Canada, the prospects are much more positive. These individuals' post-migration occupational status scores are not significantly different than prior to migration. It should be noted, however, that the proportion of individuals who fall into this category is relatively small. Among men, only about 26 percent of those who worked in regulated occupations pre-migration report working within regulated fields after six months in Canada (wave 1 of the LSIC). After four years in Canada (wave 3), about 34 percent of these individuals worked within a regulated occupation. Among women, the numbers are even fewer.

It is important to note that our findings do not provide an indication of whether or not the new immigrants are able to obtain jobs within their previous occupational field. We cannot infer whether any improvement in occupational status is the result of becoming licensed in their own field or changing fields altogether. However, given the relatively short time frame of the survey, it is unlikely that the immigrants were able to retrain and become licensed in an unrelated field and

improve occupational status that quickly. Therefore, it is more likely that immigrants who worked in regulated occupations prior to migration aimed to improve their post-migration occupational trajectory by entering the licensing process.

Over the past several years, a few provinces have taken steps to improve the position of immigrants entering regulated fields. Ontario was the first province to enact legislation to help foreign-trained workers in regulated occupations. In 2006, the *Fair Access to Regulated Professions Act* ("FARPA") was enacted by the Ontario Legislature. FARPA requires regulatory bodies to establish clear and objective licensing requirements for foreign-trained applicants. Registration practices are required to be "transparent, objective, impartial and fair". Registration decisions must be made within a reasonable period of time, and the organization must provide a written response to the applicant, providing reasons for its decision. Furthermore, applicants are provided with the right to appeal the decision of the regulatory body. Under FARPA, the Office of the Fairness Commissioner (OFC) was established, with a mandate to assess the registration practices of regulated occupations and provide advice to regulatory bodies, government ministries and stakeholders (Malatest & Associates, 2010). In 2007, Manitoba followed suit with the *Fair Registration Practices in Regulated Professions Act*, and in 2008, Nova Scotia also enacted similar legislation (*The Fair Access to Regulated Professions Act*).

The effect of fairness legislation such as FARPA would not be evident in the present analyses, since these legislations have come into effect after the LSIC data were gathered. Whether they do in fact improve the position of immigrants entering regulated occupations is to be determined in future research. However, by enacting this legislation, the governments of Ontario, Manitoba and Nova Scotia are recognizing the barriers facing immigrant applicants to the regulated occupations and are attempting to alleviate some of these barriers.

The results of this study highlight the importance of ensuring that the licensing process is made easier to navigate for new immigrants. Our findings clearly indicate that immigrants who are able to successfully enter a regulated profession soon after migration fare much better in terms of occupational status than those who are unable to become licensed.

In addition to clear, transparent and objective licensing requirements by regulatory professional bodies, labour market outcomes for new immigrants in regulated fields may be improved through pre-migration initiatives, such as extra points given for credential recognition by regulating bodies. The Canadian Experience Class and Provincial Nominees Program currently allows for the selection of foreigners with Canadian experience or education and those that fit specific occupational needs determined at the provincial level. Recent changes to the points system for economic immigrants give additional preference to those

who have started the licensing process by having their credentials assessed by a recognized credential service or professional licensing body in Canada. Such pre-migration preparation and screening has been shown to contribute to the better economic integration of skilled immigrants to Australia (Hawthorne, 2008).

Our findings suggest that, although immigrants trained in regulated occupations do face significant disadvantage, immigrants outside of the regulated occupations also experience considerable downward occupational mobility after migration. These immigrants would also benefit from more investment in credential assessment programs, bridging programs, language training and job search training. In recent years, several innovative programs have been introduced that aim to assist all newcomers, regardless of occupational regulatory status (for example, *Career Bridge*, *The Mentoring Partnership, The Foreign Credential Recognition Program* and *The Canadian Immigration Integration Project*). Detailed information about occupational requirements and expectations prior to immigration would also help skilled immigrants better prepare for integration into their intended occupations, such as that provided in the *Going to Canada Portal* and its *Working in Canada* tool. Since immigrants in non-regulated fields face a different set of challenges than their counterparts in regulated occupations, we recommend the development of programs that also focus on the unique needs of these individuals.

Notes

1   For example, the Canadian Council of Professional Engineers has agreements with the U.K., Ireland, Australia, New Zealand and Hong King, and the U.S. under the provisions of the Washington Accord and NAFTA professional mutual recognition agreement (which also covers Mexico).

2   The sample design was developed using a "funnel-shaped" approach, therefore immigrants who responded to the Wave 3 interview are a subsample of those who responded in Wave 2, etc. Final weights are applied in four steps to adjust for bias: initial response, non-response, unresolved response and post-stratification. For more information about LSIC wave 3 sampling and weighting procedures, see http://www23.statcan.gc.ca/imdb-bmdi/document/4422_D1_T1_V3-eng.pdf

3   The analyses in this study were also conducted using wage as the outcome variable of interest. Substantive results were very similar to those presented in this paper. Results are available from authors upon request.

4   NOC codes classify occupations according to their skill level and skill type. Skill levels range from A to D, with level A representing occupations that require university education; level B those that normally require college education or apprenticeship; level C those that require secondary school and level D representing those occupations in which on-the-occupation training is required. The occupation's skill type is based on the type of work performed

as well as the field or industry of the occupation. Examples of skill types within the NOC include management occupations; occupations in business, finance and administration; occupations in natural and applied sciences and health occupations. Using this system of classification, the NOC outlines 520 different occupational titles. For more information on NOC codes, please see "National Occupational Classification Training Tutorial" provided by Human Resources and Social Development Canada (HRSDC) at <http://www5.hrsdc.gc.ca/NOC/English/NOC/2011/Tutorial.aspx>.

5   The detailed list of occupational scores is available from the authors upon request.

6   If there was more than one occupation at the time of interview, the main occupation was the one identified by the respondent.

7   Girard and Smith (2012) use the Government of Canada's "Working in Canada" online tool to compile a complete list of regulated and unregulated occupations based on 4-digit NOC codes by province.

8   We also examined regulated occupations separately by field (e.g. engineering; accounting/finance, health, etc.) but due to small sample sizes, we were unable to analyze specific fields in detail.

9   Age is centered at 25.

10   Level of education completed was also examined, but since the sample consists of only highly skilled immigrants, there was little variability in this measure. Therefore years of education is used instead.

11   Skilled worker class =1; other (family class, business class, refugees) =0.

12   Reported in thousands of Canadian dollars ($2005).

13   Self-reported English/French language speaking ability ranging from 1- none to 4- fluent.

14   Participated in post-migration education =1; did not participate in PME =0. Educational courses include those leading to a diploma or degree as well as those leading to a certificate.

15   Married or common law =1; single =0.

16   Measured using dummy variables representing: 1- One child under the age of 14; 2- Two or more children under the age of 14. The reference group is no children under the age of 14.

17   Region of origin refers to the immigrant's region of birth. It is measured using dummy variables representing: 1- Northern and Western Europe; 2- Latin American/Caribbean; 3- Eastern Europe; 4- Southern Europe; 5- Africa; 6- Middle East/West Asia; 7- South Asia; 8- East Asia; and 9- South-east Asia. The reference group is Anglo countries (including United States, United Kingdom, South Africa, Australia, and New Zealand). Region of origin is highly correlated with region in which immigrants achieve their highest educational credential.

18   Before conducting the full growth curve model with all explanatory and control variables entered into the model, we constructed an 'unconditional growth model'. An unconditional growth model includes wave as the only level 1 predictor and no substantive predictors at level 2 and helps to evaluate the baseline amount of occupational mobility in the population, as well as the between-person heterogeneity in this mobility. It is important to establish that there is enough change in the outcome variable over time and that between-person heterogeneity actually exists before undertaking growth curve analysis. From the unconditional growth model, we found that there is indeed significant change in the outcome variable over time as well as significant heterogeneity in occupational mobility between individuals. Results of this analysis are available from the authors by request.

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SUMMARY

Licensing Requirements and Occupational Mobility Among Highly Skilled New Immigrants in Canada

The present study compares the occupational trajectories of highly skilled immigrants in regulated occupations to those outside of the regulated occupations, from their pre-migration occupation, to their first job in Canada, and to subsequent jobs. Licensing requirements are likely to affect new immigrants' occupational trajectories since they have a direct effect on how employers assess qualifications. This study utilizes growth curve modeling (GCM) and a unique dataset that contains detailed information on new immigrants' experiences in Canada: the *Longitudinal Survey of Immigrants to Canada* (LSIC).

Our findings indicate that immigrants working in regulated occupations prior to migration who are unable to find jobs in regulated occupations in Canada face a significantly greater drop in occupational status when they first arrive than those working in unregulated professions in their home country. Furthermore, their occupational progression over time is not faster than that of their counterparts from unregulated professions. Those who worked in unregulated fields prior to migration but found jobs in regulated fields in Canada experience an improvement in their occupational status after migration. Lastly, for those who worked in regulated professions in their home country *and* were able to find jobs within regulated fields in Canada, initial occupational status scores are similar to their scores in their country of origin, and there is little change in occupational status with time in Canada.

The results of this study highlight the importance of ensuring that the licensing process is made easier to navigate for new immigrants. Our findings clearly indicate that immigrants who are able to successfully enter a regulated profession soon after migration fare much better in terms of occupational status than those who are unable to become licensed.

RÉSUMÉ

Exigences de pratiques professionnelles et mobilité professionnelle parmi les nouveaux immigrants hautement qualifiés au Canada.

La présente étude compare les trajectoires professionnelles d'immigrants hautement qualifiés dans les professions règlementées par rapport à celles non règlementées, depuis leur occupation pré-migration, puis leur premier emploi au Canada et, enfin, les emplois détenus par la suite. Les exigences en matière de reconnaissance des qualifications professionnelles dans les professions réglementées sont susceptibles d'influer sur les trajectoires professionnelles des nouveaux immigrants du fait qu'elles ont des effets sur la manière dont les employeurs évaluent leurs qualifications. Cette étude utilise un modèle de courbe de croissance (MCC) ainsi que les données d'une enquête unique qui contient de l'information détaillée sur les expériences des nouveaux immigrants au Canada : *L'Enquête longitudinale auprès des immigrants du Canada* (ELIC).

Nos résultats montrent que les immigrants qui travaillaient dans des professions réglementées avant leur migration au Canada et qui sont incapables de trouver de l'emploi dans ces professions au Canada, accusent une plus grande perte de statut professionnel à leur arrivée que ceux qui travaillaient dans des professions non réglementées dans leur pays d'origine. De plus, leur progression professionnelle avec le temps n'est pas plus rapide que celle de leurs homologues dans des pro-

fessions non réglementées. Ceux qui travaillaient dans des professions non réglementées avant leur arrivée, mais qui ont trouvé de l'emploi dans des professions réglementées au Canada, ont connu une amélioration de leur statut professionnel d'après-migration. Enfin, pour ceux qui travaillaient dans une profession réglementées dans leur pays d'origine *et* qui ont été en mesure de trouver de l'emploi dans une profession réglementée au Canada, leur position professionnelle initiale au Canada est restée semblable à celle qu'ils détenaient dans leur pays d'origine et l'on observe peu ou pas de changement dans leur statut professionnel avec le temps.

Ces résultats mettent en lumière l'importance de s'assurer que le processus de reconnaissance des titres professionnels soit facilité pour les nouveaux immigrants. Ils montrent clairement que les immigrants qui peuvent accéder à une profession réglementée dès leur arrivée s'en tirent beaucoup mieux en termes de statut professionnel que ceux qui n'auront pas réussi à se faire reconnaître leurs qualifications.

MOTS-CLÉS : immigrants hautement qualifiés, reconnaissance des titres professionnels, intégration des immigrants, mobilité professionnelle.

RESUMEN

Exigencias de autorización para el ejercicio y la movilidad profesional: la situación de los nuevos inmigrantes altamente calificados en Canadá

Este estudio compara las trayectorias ocupacionales de inmigrantes altamente calificados en las profesiones reglamentadas con respecto a aquellas no reglamentadas, a partir de su ocupación previa a la migración, pasando por su primer empleo en Canadá y hasta los empleos ocupados ulteriormente. Las exigencias en materia de reconocimiento de calificaciones profesionales en las profesiones reglamentadas son susceptibles de influenciar las trayectorias profesionales de los nuevos inmigrantes puesto que esas tienen efectos sobre la manera cómo los empleadores evalúan sus calificaciones. Este estudio utiliza un modelo de curva de crecimiento (MCC) y los datos de una encuesta única que contiene la información detallada de las experiencias de nuevos inmigrantes en Canadá: la Encuesta longitudinal sobre los inmigrantes de Canadá (ELIC).

Nuestros resultados muestran que los inmigrantes que antes de su migración al Canadá trabajaban en las profesiones reglamentadas y que son incapaces de encontrar un empleo en esas profesiones en Canadá, se ven confrontados a una pérdida más importante de estatuto profesional a su llegada à Canadá comparativamente a los inmigrantes que trabajaban en profesiones no reglamentadas en su país de origen. Además, su progresión profesional conforme avanza el tiempo no es más rápida que la de sus homólogos en las profesiones no reglamentadas. Los inmigrantes que trabajaban en las profesiones no reglamentadas antes de su

llegada, pero que han encontrado un empleo en una profesión reglamentada en Canadá, han experimentado una mejora de estatuto profesional después de la migración. Finalmente, por los inmigrantes que trabajaban en una profesión reglamentada en su país de origen y que han logrado obtener un empleo en una profesión reglamentada en Canadá, su posición profesional inicial en Canadá se ha mantenido similar a aquella que tenían en sus países de origen, y se observa casi ningún cambio en a su estatuto profesional a medida que avanza el tiempo.

Estos resultados hacen resaltar la importancia de asegurarse que le proceso de reconocimiento de títulos profesionales sean facilitado para los nuevos inmigrantes. Se muestra claramente que los inmigrantes que pueden acceder a una profesión reglamentada poco después de su migración, van mucho mejor en términos de estatuto profesional que aquellos que no han logrado hacer reconocer sus calificaciones.

PALABRAS CLAVES: inmigrantes altamente calificados, reconocimiento de títulos profesionales, integración de inmigrantes, movilidad profesional.