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Research on Immigration and Integration in the Metropolis

Licence to Labour:
Obstacles Facing Vancouver's Foreign-Trained Engineers

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Abstract. This paper examines the problematic issue of foreign credential recognition among a sample of immigrant engineers, trained overseas. A review of the theoretical literature on labour markets suggests the wisdom of an institutional approach, where the market is socially constituted as a result of the intervention of several institutional and organisational forces. In the present case, the roles of provincial licensing bodies, government-funded job centres and co-ethnic organisations emerge as of particular significance. Interviews were conducted with 25 immigrants who had worked as professional engineers in their country of origin, and had landed in Canada primarily as skilled workers in the preceding five years. Respondents discussed their interaction with the licensing association of BC professional engineers'; a number had incomplete or faulty information; all were frustrated. The influence of job centre training on job-searching strategies is considered. Social institutions embed engineers and also shape their expectations and actions. In Vancouver co-ethnic social networks offered few if any advantages for engineering employment. 'Survival jobs' become an interim solution that may become permanent. More successful and a model in providing social capital is a Punjabi engineering association, accessible to new immigrants.

Key words: credential recognition, engineers, institutional analysis, job search, information, social capital

Introduction

> 'The New Mosaic.' Roughly one-third of Canada's population is starting to approach retirement age. A worker shortage looms without recruits from abroad. That's why attracting immigrants – and keeping them – is the country's greatest challenge (*Time* magazine, Canadian Edition, May 7, 2001: 3).

> More than any other country in the world, Canada consists of individuals who, for their own reasons, might have decided to live somewhere else, but instead chose to make Canada their home. The very best of these – the most skilled, the most creative, the most brilliant – demonstrate that, notwithstanding the talented Canadians we have lost, we have also benefited enormously. This is Canada's 'brain gain' (*Maclean's* magazine, July 1, 2001: 23).

In the summer of 2001, two Canadian magazines showcased the benefits immigrants have made to the nation. On the cover of *Time*, Nirmala Naidoo-Hill, a popular news anchor in Calgary who emigrated from South Africa, is shown wearing a stampede-style white cowboy hat in front of a large Canadian flag with the caption, "Meet Canada's Future." A few weeks later, *Maclean's* offered a similar feature article in its Canada Day edition. The Philadelphia-born Charlie Biddle, instrumental in making Montreal's jazz scene world-class, graces the cover. Along with Biddle, 50 popular and successful individuals who chose to live in Canada, such as Ujjal Dosanjh, Adrienne Clarkson, Michael Ondaatje, and Deepa Mehta, are highlighted in personifying the creativity, hard work, perseverance, and interesting cultural perspectives brought by immigrants.[1] These favourable characteristics of immigrants are set up against the concern of a "brain drain" to the US and an aging Canadian-born population. "New Canadians will fill the [looming] job gap" as *Maclean's* says.

This portrayal of immigrants as enhancing the Canadian labour market contrasts, however, with a widespread concern that many highly educated or professionally trained immigrants are not able to utilize their skills in Canada. For example, news reports present convincing descriptions of skilled immigrants washing dishes and delivering pizzas (*Globe and Mail* 1998*; Toronto Star* 2000; Calleja 2000; Dabrowski 2000; *Canadian Press Newswire* 2001a, 2001b). Having a taxi driver who is a recent immigrant with a PhD seems to have become somewhat of a Canadian cliché.

Clearly, there is a discrepancy between these two portrayals. On one hand, Canada is depicted as a successful multicultural nation, where immigrants can continue their own professional and cultural practices while also diversifying Canadian society. On the other, skilled and/or professional workers are facing significant obstacles to joining the workforce in the

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[1] Canadian-born people who left the country and later returned to make a major contribution to the nation are also listed by *Maclean's*.

occupation for which they are trained and desired. The former is what Canada strives to be. The latter is the harsh reality that many recent professionals face arduous and often insurmountable obstacles to gain professional recognition. It is this last issue, Canada's "brain waste," that this paper explores.

I will argue that our current understanding of immigrant skill underutilization in Canada is inadequate because previous studies have been too broad and failed to appreciate the particular difficulties experienced by immigrants seeking employment in different sectors of the labour market. In addition, few studies have recognized the existence of *multiple* institutional barriers operating together to disadvantage immigrants seeking work that utilizes their skills. To gain a better understanding of immigrant skill underutilization, I will first try to sketch a more appropriate model to comprehend immigrant issues in society that takes into consideration the multiple and overlapping institutions that shape immigrants' experiences in seeking employment. Because of the widespread anecdotal evidence that professionally trained immigrants are experiencing severe difficulties across Canada, I chose to focus on immigrants wishing to work in *regulated* professions, such as medicine, dentistry, engineering, and law. I will use a case study of engineers in Vancouver from this particular theoretical viewpoint to illustrate that the requirements of professional regulatory bodies, and the ability for immigrants to generate social support and professional contacts upon arrival are key institutional influences in the experience of finding employment.

The structure of the paper is four-fold. First, I will briefly review our current understanding of immigrant skill underutilization in Canada, and will show how previously used theoretical constructions miss important issues and offer a partial understanding. Second, I will sketch the concept of an "institutionalist" perspective in local labour markets, and will indicate why this alternative approach offers a more accurate understanding of immigrants' experiences as they progress along the process of seeking employment. Third, I will set the context of increasing numbers of foreign-trained engineers in Vancouver, and the alarmingly low number receiving professional designation. Last, based on interviews conducted with foreign-trained engineers in Vancouver, I draw upon the concept of "institutional" influence and unpack various institutional forces that bear on the experience of foreign-trained engineers seeking professional employment in Vancouver. The aim of this paper, then, is to use an unconventional theoretical approach that reconsiders the nature and regulation of local labour markets to address the very real social problem facing upwards of 2500 immigrants arriving in Vancouver each year, wishing to work as professional engineers.

Canada's "Brain Waste" – Immigrant Skill Underutilization

The economic integration of immigrants has long been an issue receiving academic attention in Canada, and skill underutilization is certainly not a new concern (e.g. Boyd 1985; Fernando and Prasad 1986; McDade 1988). In this section, I outline some key studies that examine immigrants' limited economic prosperity and occupational mobility, both for their empirical findings and also for the theoretical approaches employed.

To begin, there has been a tradition of human capital studies that builds upon a theoretical model developed by American economists (see Chiswick 1978; Borjas 1985). The basis of this approach is that an individual's relevant workforce characteristics, e.g. education level, training afforded by work experience, and language skills, are conceived as the capitalized value of the productive investments made in that person (Lipsey and Ragan 2001: 331). Using this model, workers with comparable workforce value and productivity are expected to receive comparable incomes and attain comparable jobs. For immigration studies, this model is used to compare immigrants and native-born workers with similar workforce characteristics, i.e. similar levels of education and training. The extent to which immigrants receive less than native-born workers upon entering the workforce has become called "the negative entry effect," and the ability for immigrants to raise their income levels to reach parity with natives with time spent in the new host country (giving time to improve language skills, improve their local human capital and knowledge of the labour market) is "the assimilation effect."

In Canada, studies based on the human capital model report that immigrants who arrived in the 1990s have experienced accentuated difficulties over their previous counterparts when compared against native-born workers. In other words, the "normal" occurrence of negative entry and assimilation periods has actually worsened over recent years. This is seen in lower initial earnings, taking longer to earn comparable salaries (to the point that many immigrants with comparable education levels may never reach parity with native-born workers) and encountering higher levels of poverty (Abbot and Beach 1993; Baker and Benjamin 1994; Bloom et al. 1995; Kazemipur and Halli 2000; Reitz 2001a).

In trying to determine if certain immigrants face greater hardship than others, studies have also combined a human capital perspective with either a racializiation/discrimination or institutional perspective. The discrimination approach presupposes that immigrants are disadvantaged in the labour market because employers or regulatory boards cannot disassociate a worker from the colour of his or her skin, and this disadvantages them in hiring and evaluation processes. The focus on institutional barriers emphasizes on the relationship between education

and employment, and assumes that immigrants do less well because employers or regulatory bodies (as institutions) create or perpetuate income disparity. Such studies have shown visible-minority immigrants, particular ethnic groups, women immigrants, and certain foreign-degree holders may face further disadvantage among immigrants (Beach and Worswick 1993; Chistofides and Swidinsky 1994, Reitz and Breton 1994; Pendakur and Pendakur 1996; Thompson 2000; Li 2000, 2001; Reitz 2001a).[2] Theoretically, these approaches compare salary or occupational attainments while controlling different variables to discover or discern what is causing immigrants to be economically disadvantaged. A range of causal factors have been highlighted, varying from human capital characteristics to systematic discrimination by employers and professional regulatory bodies against country of origin, country of education, race and gender. In short, studies have found there to be multiple and overlapping barriers that create and perpetuate immigrants' disadvantaged position in Canada, but unfortunately few studies have brought these factors together.

Because Canadian immigration policy has long been intended to enhance the Canadian labour market (Najm 2001; Reitz 2001a; Pendakur 2000; Li 1992), it is not surprising that the existence of barriers against the full use of immigrants' human capital resources have caught the attention of policy makers who want to know the extent and significance of immigrant skill underutilization. Two studies have recently been published attempting to "cost" this issue of immigrant "brain waste" in Canadian society. Reitz (2001b) estimates that if immigrants received premiums for their education and work experience at the same rate as native-born, and if immigrants were not disadvantaged based on their country of origin, immigrants' labour market earnings would rise from $11.7 to $15.0 billion annually.[3] This estimate, based on census data, translates into a 20% increase in workforce earnings. Similarly, the Conference Board of Canada, based on telephone surveys, found that unrecognized learning (both formal education and work experience) affects 550,000 people in Canada, costing the nation $4.1 to $5.9 billion in income annually (Bloom and Grant 2001).[4] This study's figures are based on self-reported estimates of foregone earnings when people were unemployed or underemployed due to unrecognised learning. The variance in these two estimated costs of skill underutilization (between the

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[2] Visible minority is a term used on census forms for persons who are not Aboriginals to identify themselves as non-Caucasian in race or non-white in colour.

[3] Reitz (2001b: 356-57) used 1996 Canada census microdata of immigrant and native-born men and women aged 20-64 with positive earnings during the previous year. To identify earnings differences related to skill underutilization, an analysis considering work experience education, minority origin, and occupational skill levels were considered. This figure represents the cost of the issue and reflects 1995 dollar values.

[4] Bloom and Grant's (2001) study is based on telephone surveys with 11,755 households in Toronto, Montreal and Vancouver. 75% of the affected group who self-reported experiencing unrecognised learning were immigrants.

Conference Board of Canada and Reitz) derives from using different data sets and methodologies, and somewhat different sample groups, but in both cases they demonstrate that the annual macroeconomic costs for Canadians are billions of dollars.

In a different vein from the studies that focus on the economic significance of skill underutilization, a few studies have explored the societal impact of Canada's "brain waste." For example, Mata (1999: 6) writes:

> When a large number of individuals from particular ethnic or racial backgrounds are blocked in their entry into the trades or professions there is an accumulated societal effect of higher levels of inter-group tensions, individual and collective alienation as well as generalized perceptions [of] "institutional" discrimination.

Furthermore, continued rejection and lack of recognition may lead not only to eroded skills and diminished confidence, but also to negative psychological effects of anxiety and frustration (CTFMH 1988). Second generation immigrants lose their occupationally successful role models, and perceptions of discrimination can cause inter-group tensions and overall weaker immigrant integration (Hall 1975). All issues raise disquieting questions about Canada's success as a multicultural nation.

Clearly, immigrant skill underutilization is a major national issue with grave economic and societal consequences. The enormity of the problem derives in part from the fact that immigrant skill underutilization occurs in many different forms and is caused by multiple barriers, making it a complex issue to understand and assess. Policy papers indicate obstacles preventing successful skill utilization include non-recognition of immigrants' credentials, skills, and work experience by professional associations, employers, and academic institutions, biased or discriminatory hiring and promotion practices, unclear or unavailable information about registration procedures, and language barriers (see also Boyd 1985; McDade 1988; Basran and Zong 1998; Mata 1999; Brouwer 1999; Spigelman 1999; Reitz 2001b; OMTCU 2002). It seems every immigrant in all facets of the labour market may be affected.

Immigrant Non-Accreditation

Immigrants seeking employment in regulated professions face particular barriers to finding employment that utilizes their skill because they must first gain a professional licence before they can seek relevant employment. This is because work conditions fall under provincial jurisdiction in Canada, and provincial governments delegate the regulation of professions to self-governing professional associations (McDade 1988: 9). One form of professional self-regulation is to establish a licensing body that controls the use of reserved professional titles, and the right to

offer a licensed service. These powers are granted to ensure that the public is protected from incompetent service (*ibid*: 9). For professionally trained recent immigrants, then, it is essential to obtain a professional licence in the province to which they immigrate so they can practice their profession in Canada, making their experience of finding employment considerably more complex than that of immigrants in non-regulated professions.

While having received little explicit academic attention (Basran and Zong 1998 is a notable exception), the particular difficulties facing immigrants with training in regulated professions has been the focus of recent roundtable discussions and conferences across the country. Here, criticisms have been launched at professional licensing bodies for using discriminatory and opaque procedures that disadvantage recent immigrants (McDade 1988; Looking Ahead 2001, 2002a, 2002b). Several provincial government task force reports such as Ontario's *Access!* (Cumming *et al.* 1989), Manitoba's *Issues, Trends and Options* (Manitoba 1992), and Alberta's *Bridging the Gap* (Alberta 1992) have also highlighted the difficulties in getting professional credentials fairly evaluated. In 1999 there was also a watershed ruling by the BC Human Rights Tribunal in favour of five foreign-trained doctors who argued that the BC College of Physicians and Surgeons discriminated against them on the basis of place of origin (Patch 1999).

In Vancouver, the issue is also germane. Vancouver is currently receiving large numbers of immigrants who wish to find work as "engineers" (approximately 2500 each year), but the provincial engineering licensing board who grants the essential licence to practice as an engineer, the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) only licenses annually approximately 150-200 foreign applicants to work as a professional engineer.

To perform this study a more appropriate theoretical model than the conventional human capital model is required. The conventional human capital approach rests on the assumption that workers are income-maximizing, atomized individuals who seek employment in a perfectly competitive labour market. But despite the simplicity of such an assumption, it also fails to acknowledge the aspects of labour markets that make them anything but perfectly competitive. Only when a theoretical approach that acknowledges that labour markets are social, political, and institutional constructs is adopted can the actual operation of the imperfect but real labour market be understood. There is a range of factors that govern access to jobs and information about jobs. To understand why immigrants are disadvantaged in attaining professional occupations, an empirical study detailing professionally trained immigrants' experiences during the *process* of seeking employment and professional licensing in a labour market laden with institutional affects

is needed. The way in which recent immigrants perceive and respond to the various social and institutional barriers they encounter and how they reconcile unmet expectations shapes their experience in finding work. Greater knowledge of institutional influences, and immigrants' responses to the opportunities and obstacles they present, will go some way to further our understanding of the *processes* that disadvantage them in attaining professional occupations. Such an understanding also informs discussions of what local labour market policy interventions may be helpful. Next, I will elaborate on the theoretical approach that will be adopted for analysing the situation facing many of Vancouver's foreign-trained engineers.

Local Labour Markets: An Institutional Approach

Conventionally, neoclassical economics forms the basis for understanding how markets work in capitalist society. According to neoclassical theory, free markets are self-equilibrating, elegantly bringing complex supply and demand functions together by an uninterrupted and uncontrolled price mechanism. In turn, the free workings of the price mechanism, neoclassicists believe, leads to allocative and distributive efficiency.

Labour (along with physical capital and land) is a factor of production and its market price fluctuates in accordance with the balance of supply and demand. The workers who supply their labour are atomized, competitive, price-takers. Gaining employment is based on having the appropriate workforce knowledge (education and training) for a job and the willingness to accept the market price for labour. In other words, the market for labour is no different from the market for any other commodity.

But labour is not simply a commodity, and workers are not atomized. As Jamie Peck says, believing labour markets function as commodity markets is "to deny the *social* nature of human labour and productive activity" (1996: 2, original emphasis). Instead, and despite the enduring hegemony of neoclassical theory, there is a burgeoning field of academic literature that acknowledges social relations and institutions are critically influential determinants of economic activity. Such arguments can been found in the varying disciplines and perspectives of economic sociology, regulation theory, institutional economics, international political economy (Peck 1996: 67) and organization theory (Amin and Thrift 1995: 51). These bodies of work have diverse origins, and differ according to the particular structure or institution they emphasize. However, they complement each other by offering a common critique of neoclassical economics, and by recognizing external influences of power. I will briefly elaborate on two of these wider fields: economic sociology and an institutional approach because I draw largely on their developed

theoretical concepts of social structures and institutions in analyzing the experience of immigrant engineers in Vancouver.

The new or "re-emerging" field of economic sociology stems from Mark Granovetter's (1985) now classic paper on "social embeddedness." Granovetter's central thesis builds upon Karl Polyani's (1944) work and his "substantivist" school in anthropology to argue that economic activity is not always based on rational calculations for individual gain. Instead, Granovetter writes:

> Actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations (1985: 487).

Granovetter believes that social structures constrain, support and/or derail individual goal-seeking behaviour (see also Portes and Sensenbrenner 1993). People are cognizant of expectations and responsibilities deriving from networks of personal relations, and incorporate these concerns into economic activity. Granovetter states that economic activity is always "socially embedded"; economic institutions are constructed through social relations, and economic activity is consequently a social activity. The social "embeddedness" of economic activity has come to represent the core concept of economic sociology.

Complementary to Granovetter's work is "institutional economics," which was developed within economics. Originating with Thorstein Veblen (1919), this approach views all human activities, including economic and labour realms as "resolutely social, shaped by a set of institutional norms and expectations" (Barnes 1997: 240). Veblen uses the term institution informally to mean "settled habits and thoughts" (Veblen 1919: 239, as quoted in Barnes 1997), and recognizes that institutions are geographically and historically relative. Therefore, institutional economics is in direct opposition to the neoclassical rational abstraction of the profit-maximizing individual, *homo economicus*, who operates in an idealized labour market; instead, institutionalists understand humans as influenced by habits and norms that are historically and geographically relative, requiring a place and time specific understanding (see Barnes 1996: 213-214; Amin and Thrift 1995: 51). Institutions, then, take on the same function that social structures perform in Granovetter's work; that is, they allow contextual influences to be included into the analysis, affecting choices and actions of individuals in the workforce.

Contemporary economic geography draws theoretical inspiration from these alternative approaches to economic activity and the operation of local labour markets. Local labour markets

are viewed not as abstract supply and demand functions, but as sites of social regulation and politico-economic governance. As Martin (2000: 456) says, "The labour market is a prime site of social, institutional, and regulatory practices" (see also *Regional Studies* 1996; Peck 1996, 2001). Yet, how these various social, institutional, and regulatory practices function in local labour markets remains a contested issue among geographers (see Martin 2000). Various conceptions provide overlapping, and in some cases competing views of how labour markets function. But taken together, they enable labour markets to be conceptualized as complex, *socially constructed* and *politically mediated* structures that are influenced by *institutional forces* and *power relations* (Amin and Thrift 1995; *Regional Studies* 1996; Peck 1996, 2001; Martin 2000). Moreover, geographers continue, labour markets have a local level of operation and exist within a specific spatial setting and context. As Peck says, recognizing the social construction and regulation of markets enables us to "explain the complexities of real-world labour markets" (1996: 265), a far cry from the abstract notion of uninterrupted labour markets.

The theoretical perspective that I will adopt, then, is that a local labour market is influenced by local and non-local (national and international) systems of formal and informal institutions (regulatory, social, and cultural institutions) that intersect to shape local employment conditions. It is within this context that recent immigrants seeking professional employment must find work. The goal, then, is to understand how recent foreign-trained engineers navigate through various institutions in seeking engineering employment in Vancouver.

The Vancouver Context: Immigrant and Labour Market Figures

The emergence of professional accreditation issues for immigrants is part of a wider picture of immigrant labour market integration in Canada and in Vancouver. Since the regulatory system was introduced in 1967, independent immigrants have been awarded higher admission points for criteria such as level of education, occupational training, and knowledge of English and French (Li 1992; Green 1995).[5] The underlying belief was that individuals with these selected human capital characteristics could more easily enter the workforce, and thus could make significant contributions to the Canadian economy and society. This policy has, without a doubt, impacted and raised the labour market qualifications of new immigrants. Of the 290,000 skilled workers

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[5] During the research period of this paper, the federal government introduced a new Immigration and Refugee Protection Act. Brought into affect on June 28, 2002, the new act no longer considers specific factors such as occupation, personal suitability and age, and places greater emphasis on transferable skills, such as language, education and experience. It also raises the minimum points required from 70/110 to 80/100. This change indicates apprehension that occupational considerations in the old act were no longer producing desired economic outcomes.

(principal applicants) who arrived in Canada, 1998-2000, 82% had a minimum of a university degree, and 65% of their dependents had similar education qualifications – a *much* higher proportion than the average for Canadian-born (CIC 2001a: 5, 98). Among these skilled workers, approximately 82% choose to settle in Vancouver, Toronto, or Montreal (CIC 2001a: 95). In other words roughly 7,500 new immigrants selected for their skills or professional training arrive in Vancouver each year.

Looking at these skilled workers coming to Vancouver, there has been a dramatic increase in the absolute and proportionate number declaring upon arrival that they intend to work as engineers (Table 1). Over the ten year period shown in Table 1, there has been a rise from 3% of all principal skilled workers to nearly one-third of the total coming to Vancouver who wish to work as engineers – a 20-fold increase in absolute numbers. Moreover, 98% of foreign-trained engineers coming to the province of British Columbia are choosing to settle in its largest city, Vancouver.

Table 1: Landing Data of Immigrants Declaring Engineering as Intended Occupation in Vancouver, BC

	Principal Applicants to BC	PA's declaring 'Engineer' to BC	PA's declaring 'Engineer' to Vancouver	'Engineer' as % of PA's	'Engineer' in Vancouver as % in BC
1991	4107	115	94	3%	82%
1992	3672	173	153	5%	88%
1993	4978	468	414	9%	88%
1994	5614	715	647	13%	90%
1995	7509	1010	888	13%	88%
1996	9976	1430	1307	14%	91%
1997	10153	1665	1596	16%	96%
1998	7171	1462	1394	20%	95%
1999	7675	2089	2045	27%	98%
2000	8196	2506	2444	31%	98%

Source: Author's calculations, based on data from LIDS 2000.[6]

While there are no data available to determine how many of these immigrants obtained employment as licensed engineers, APEGBC made available unpublished figures for the purpose of this study on approximately how many people are granted a professional engineer licence in

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[6] See Appendix 1 for kinds of engineering considered.

the province (P.Eng.).[7] APEGBC receive approximately 700-750 applicants for the P.Eng each year. Only 150-200 of these are "new" applicants, likely meaning they are immigrants. The other applicants have either been licensed elsewhere in Canada and are moving through inter-provincial mobility, or are moving up from the Engineer-in-Training (EIT) program, meaning that they have had their engineering education recognized, and have been meeting the four years of working experience under the supervision of a licensed engineer, the natural progression for recent graduates of Canadian "accredited" engineering programs.[8] The "new applicants," therefore, are generally immigrants who need to apply for licensing to work in Canada.[9] According to APEGBC, nearly all "new" applicants were awarded a P.Eng. But, the figure of 150-200 is shockingly lower than the almost 2500 people who landed in Vancouver in 2000 who declared engineering as their desired profession. Seemingly there are barriers that prevent large numbers of foreign-trained engineers from even applying for certification.

Research Methodology and Participants

To achieve in-depth understanding of the diversity of foreign-trained engineers' experiences in the labour market, and why so few are applying for the professional licence they need, I chose to use qualitative research methods for the richness and texture they offer of informants' experiences. In-depth interviews enable a researcher to unravel how immigrants experience and make sense of their lives. Through listening to their stories, we see how they manipulate and reconstruct their resources as they come up against obstacles, and uncover the ways in which social relations and institutions mediate the process (Valentine 1997). Such information is not attainable through quantitative techniques. The limitations of my methodology are discussed at the end of this section.

Twenty-five semi-structured interviews with foreign-trained engineers were conducted between October 2001 and May 2002, with the bulk being completed during the November – February period. Individuals were identified using a snowball sampling technique, utilizing several different local immigrant service agencies for initial contact. Each of the engineers I

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[7] IMDB data is available for "Architects and Engineers" at the national level that would show the number of immigrants submitting tax forms for work in these professions. This is not a useful comparison, however, because the LIDS data that I have is for BC only. To receive IMDB data for provincial levels and for engineers only is prohibitively expensive.

[8] Approximately 15-30 foreign-trained engineers with non-accredited degrees are in this EIT category.

[9] APEGBC describes those in the non-accredited degree category to be mostly immigrant applicants with offshore engineering degrees. This also includes applicants who have science degrees and are writing exams to make up the difference, but this is rare.

interviewed had been in Canada for less than five years, lived in the GVRD,[10] had worked as a professional engineer in their home country, and was actively seeking professional employment in Vancouver.[11] They represented various fields of engineering (civil/structural, mechanical, electrical/computer, mining), and varied in years of working experience from 2-20 years, with 9 years as the average. The highest attained level of education was the equivalent of a Bachelor's degree for 60% of the interviewees, a Master's for 25%, while 15% had completed PhDs. Participants came directly from or via one of the following countries: Austria, China, Colombia, Finland, Jordan, India, Iran, Iraq, Libya, Malaysia, Mexico, Philippines, Russia, Saudi Arabia, Serbia, Ukraine, or Yugoslavia.[12] Overall, eight identified being from the Middle East, six were from East Asia, four were from Eastern Europe, three were from South America, and three came from India. All interviewees came under the "skilled principal applicant" immigration category, with the exception of two who came as students, two as spouses of principal applicants, and one as a political refugee. All but four of the 25 were male.

All interviews followed a semi-structured format and were conduced in public libraries or coffee shops, with the exception of three interviewees who welcomed me into their homes. The interview schedule outlined 30 questions that asked about general experiences with immigration, their overseas engineering work experience, pre-migration employment expectations, specifics about their job search in Vancouver, knowledge of APEGBC, and perceived changes to their social status following migration. In particular, to investigate the role of social networks in assisting with the migration process and job search, I asked where they lived on arrival, community involvement, and the support of family and other immigrants. The questions posed were open-ended, and the format of the interview was fluid and conversational, with no fixed order to the questions. Interviewees also raised new ideas, and the open format meant that I was able to pursue them. All interviews lasted one to one and a half hours, with the exception of one interview that was only 40 minutes. For confidentiality reasons, each respondent was given a pseudonym. Contact was continued with many of the informants after the interview and they updated me on the progress of their job search via e-mail.

In addition to interviews with foreign-trained engineers, I also conducted several interviews with individuals involved in the issue of foreign accreditation and/or the

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[10] Greater Vancouver Regional District. Interview subjects lived in Vancouver, North Vancouver, Burnaby, and New Westminster

[11] Note, two respondents had recently been offered engineering jobs at the time of the interview. We were still able to discuss their job search experiences, with the added bonus of what strategies had proved successful.

[12] Eight migrated to and worked in transit countries before arriving in Canada.

engineering profession. In particular, in the Spring of 2002 I was granted one interview with a senior registration staff member at APEGBC, two with the project director of a provincially led pilot project also examining the obstacles facing foreign-trained engineers (see Walker 2001), and one with the director of a local international credential assessment agency. I also met informally with three employment counsellors. So as not to lose the style of speech and subtle comments made by informants, interviews with all foreign-trained engineers and the administrator at APEGBC were tape-recorded and transcribed verbatim. Hand-written notes from the less formal meetings and personal observations were also typed. Together, all compiled notes became the text from which I worked.

Using interviews as my primary source of information does create methodological limitations to my findings. Firstly, this research cannot claim representativeness. I opted to sacrifice comprehensiveness for in-depth, individual accounts available through interviews. Still, while not claiming representativeness, I made concerted efforts to hear from a range of perspectives among foreign-trained engineers. The variance in kinds of engineering, ethnicity, and level of education in my sample match those found among the wider composition of foreign-trained engineers in Vancouver (for more elaboration see Geddie 2002). There is, however, an under-representation of engineers from Asian countries other than China, and an over-representation of engineers from Iraq. This is a result of my recruitment procedures. Because of the difficulty in securing contacts with engineers, I needed to rely on referrals of past informants. I attempted to have a representative sample based on ethnicity, gender, level of education, and kinds of engineering differences, but my recruitment within the groups was commonly opportunistic (see Fernando and Prasad 1986: 21). Nonetheless, I contend that the tendencies and experiences shared among my 25 respondents point to similar patterns among the wider community of immigrant engineers.

Secondly, this study only considers labour supply in the Vancouver market. It was beyond the scope of this study to research employers' views and the fluctuating market demands among different types of engineering knowledge; therefore, additional research into the demand-side of is needed to complete the picture of the operation of Vancouver's engineering labour market. According to the Canadian Manufacturers and Exporters

Management Issues Survey (2000), however, engineering (in most specialities, but especially in systems and electrical engineering) is ranked as the number one occupation currently in high demand. For the purpose of this paper, then, I assume there is substantial market demand for different kinds of engineers.

In the remainder of this paper I will use the empirical materials gathered through interviews to consider the ways in which the ability of foreign-trained engineers to gain professional engineering employment in Vancouver is mediated, controlled, and disrupted by "institutional" influences. In the next section I consider the results of interviews conducted with foreign-trained engineers, and inform the discussion with various conceptions of "institutional" influences. Crucial to our understanding, however, is to move beyond an understanding of the various institutions that exist, and to explore the way in which Vancouver's newcomers construct their resources in the face of the regulatory and social institutions that condition the opportunities to succeed or fail in attaining professional employment. In turn I will look at formal regulatory institutions, followed by informal social institutions.

Politico-Economic Governance and Regulatory Institutions

To begin, I will examine the influence of regulatory institutions on foreign-trained engineers seeking work in Vancouver. Regulatory institutions have been the focus of analysis in other labour market studies for the influence they exert on both the supply and demand for labour in the labour market as well as individuals' access to certain occupation. For example, the influence of state activities such as the structure of taxation, the structure of welfare provisions and the associated eligibility rules, supply and governance of childcare, support for the training system, differentiation with the education system have all been considered (Peck 1989, 1996; Jonas 1996; O'Neill 1997).

Such systems and institutions of governance operate at different geographical scales. For instance, Vancouver's labour market is influenced by *international* accords that affect the transferability of certain nations' professional degrees, *federal* immigration policy that shapes national labour supply characteristics, *provincial* wage rates that set labour prices, and *local* employment programs that direct labour into certain industries. When these regulatory institutions combine with the local economic, political and social context, the result is a *locally-specific* articulation of the labour market.

APEGBC: "P.Eng. The License to Engineer"

The regulatory institution with the most apparent influence on foreign-trained engineers in Vancouver is the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). This provincial engineering licensing board plays a crucial role as a regulatory institution in influencing access to certain occupations within the labour market. To illustrate, I will begin by outlining the licensing requirements for foreign-applicants, followed by engineers' experience with this institution.

Professional engineering licenses are only awarded by 12 provincial/territorial associations/*ordres* in Canada.[13] In the province of BC, the regulator is APEGBC. It has legal jurisdiction to confer or take away the right to perform engineering services. It also determines who can use the professional engineer title (P.Eng), and whether someone can call themselves an "engineer" in the province.[14] In short, it is illegal for anyone, including individuals licensed as professional engineers in other countries to call themselves "engineer," sign their names with "P.Eng," or to perform engineering work in BC without first being registered with APEGBC. The Association's institutional function is to maintain professional engineering standards by ensuring that all members in the province meet a minimum level of competence.

Registration as a P.Eng at APEGBC is contingent upon three factors: academic training that meets Canadian standards; four years of relevant engineering experience under the supervision of a licensed engineer (of which *one year must be in Canada or the United States*); and the testing of professional and character standards (through, for example, professional conduct, and ethical standards).[15] APEGBC insists on performing all evaluations, including the evaluation of academic credentials.[16] For graduates of Canadian accredited engineering programs, academic requirements are automatically met since the national umbrella organization, the Canadian Council of Professional Engineers (CCPE) has a standing committee called the Canadian Engineering Accreditation Board (CEAB) ensuring Canadian undergraduate engineer programs "meet or exceed educational standards acceptable for professional engineer registration

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[13] One agency, the Association of Professional Engineers, Geologists, and Geophysicists of the Northwest Territories (APEGGNT) govern the Northwest Territories and Nunavut. *"Ordre"* is used in Quebec.

[14] APEGBC is responsible for both professional engineering and geoscientist titles in the province. There are several grades of membership, but this study will only be concerned with criteria to be a Registered Engineer Member (P.Eng.) or Engineer-in-Training (EIT).

[15] Provincial licensing procedures for foreign applicants *differ* between provinces by method of evaluation for technical and academic knowledge and the number of required years of experience.

[16] Other evaluation services do now exist, such as the provincial International Credential Evaluation Services (ICES), which is operated by the Open Learning Agency and was established by the then BC Ministry of Multiculturalism and Immigration in 1995.

in Canada" (CEAB 2001). For applicants educated outside Canada, methods of evaluation vary depending upon the country where the degree was attained. Currently, CCPE and CEAB have an international mobility agreement with the respective engineering accreditation boards in Australia, Ireland, New Zealand, United Kingdom, United States, South Africa, and most recently Hong Kong.[17] This agreement, now commonly called the "Washington Accord," establishes that member countries recognize each other's engineering academic programs as comparable. CCPE has also signed the NAFTA mutual recognition agreement, and recently concluded an agreement with *La Commission des Titres d'Ingénieur* (CTI) in France, which is a bilateral agreement between all Canadian provincial/territorial associations/*ordres* (with the exception of Ontario) and French *ingénieurs diplomés* (CEAB 2001: 32-34). According to CCPE, fundamental to these agreements is each country's belief that "the accreditation of engineering programs is a key foundation for the practice of engineering."[18] No engineers in this study benefited from the Washington Accord.

CCPE's international mobility agreements mean that APEGBC accepts the academic qualifications from applicants trained in the above-mentioned countries. But as the list of top 10 source countries for immigrants intending to work as "engineers" in BC shows (see Table 2), the Washington Accord only holds in one of the top ten source countries (Hong Kong). The vast majority of engineers coming to BC were trained in countries that do not have international mobility agreements with CCPE. They thereby face more difficult licensing and credential evaluation procedures with APEGBC because their academic credentials are not considered comparable. Instead, to evaluate the academic credentials of engineers from these other countries, each institution is checked against a "list" of baccalaureate programs in engineering from foreign universities.[19] If an applicant's institution is on the "Foreign List," a minimum of three or four "confirmatory exams," each costing $247 may be assigned to verify technical knowledge. If an applicant's institution is not on CEQB's "Foreign List," the minimum number of confirmatory exams increases to six, with the maximum number of exams being 20 (APEGBC Application

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[17] The first agreement was signed in 1980 between the CEAB of the CCPE and the Engineering Accreditation Commission of the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET) of the United States. Six countries signed the second agreement between in 1989, with South Africa joining in 1993 and Hong Kong in 1995.
[18] Source: www.ccpe.ca/ccpe.cfm?page=Mobility_Int.
[19] The Canadian Engineering Qualifications Board's (CEQB), a standing committee of the CCPE, maintains this list. The evaluation done of each university is based on broad criteria, and is used to generally rank engineering programmes. This evaluation process is not comparable to the accreditation process used for Canadian programmes.

Guide 2002).[20] Other costs for registration include a \$360 application fee, \$110 for the Professional Practice exam (now used to evaluate professional standards), plus the cost of manuals and books for exam preparation. Note, however, that this foreign list is used as a guideline for associations like APEGBC, and not all provincial associations in Canada choose to use it.

Table 2: Top Ten Source Countries of Engineers Coming to Vancouver 1991-2000

Country of Birth	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991
China	1465	1085	371	500	336	133	70	24	4	8
Taiwan	88	129	313	140	266	127	22	12	4	4
Iran	97	132	180	145	102	46	27	9	4	7
Romania	54	51	92	38	52	83	59	84	24	6
Hong Kong	7	9	80	14	103	92	64	34	21	7
India	95	78	73	58	53	27	22	12	9	1
Korea, Rep.	105	84	35	88	24	24	24	4	0	0
Yugoslavia	17	28	24	13	28	75	76	64	17	0
Russia	33	39	54	34	24	13	1	5	0	0
Pakistan	52	27	34	31	12	10	5	3	3	2

Source: Author's Calculations, LIDS 2000[21]

APEGBC has also recently introduced an interview program for more educated or more experienced foreign applicants. Rather than writing confirmatory exams, applicants with 10 years or more work experience have their engineering knowledge assessed in an interview with senior APEGBC members. (Recognized Masters or PhD degrees can also count towards the required 10 years.)

For all applicants, once APEGBC recognizes suitable academic training, the next step is to gain a minimum of four years engineering experience meeting the Association's suitability criteria.[22] Herein lies the often-insurmountable obstacle for foreign-trained engineers: *one year of the experience must be gained in Canada and/or the United States.* To meet APEGBC's licensing requirements, foreign-trained engineers must find local employment. However, without local professional recognition from APEGBC or recognizable academic credentials, foreign-trained engineers face the difficult task of needing to convince employers of the validity of their

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[20] Graduates of Philippine universities are singled out as simply not welcome to apply. No explanation is given for this on CCPE or APEGBC's website.
[21] See Appendix 1 for kinds of engineer included in category.
[22] Supervised work is required of recent graduates of Canadian schools, as well as foreign applicants. Relevant experience includes first-hand involvement with projects and application of various engineering theories, including analysis, design and synthesis, testing and implementation (APEGBC Reference Guide, 2002). An applicant with less than four years experience must apply for the Engineer-in-Training (EIT) program, as would any graduate from a Canadian engineering program.

engineering degrees and work experience on their own. In a profession that relies on institutional recognition and professional licensure to ensure technical competency, these foreign-trained engineers are at a severe disadvantage, caught in what many felt was a "catch-22 situation." Experience is needed to get a P.Eng license, but few employers want to give foreign-trained engineers work opportunities before they are assured of their competence (with a P.Eng license). During the interviews, "chicken and egg" and "catch-22 situation" were frequently employed in frustration to describe the difficulties imposed by this requirement. Typical is the description given by Nehru, a civil engineer from India:

> I went to APEGBC and they said you need one year's experience in Canada, North America to be enrolled in our association. I tried a number of companies to get some experience. Everybody said that you are in a "catch-22" position. You can't get experience unless somebody gives you a chance, and nobody will give you a chance! It's like that, because you have no experience. So, I was going like that for about 16/17 months.

Similarly, Jasmine, a structural engineer from Iraq, expresses how the required one year is her only real obstacle:

> … but only one problem, this one year experience… I told them, it's become like the egg and the chicken. Which one is first? Because the APEG asks for one year's experience, when you go to the private sector, I'm not sure about the government, they ask about the P.Eng. So how to get this? Which one first, the egg or the chicken?

Unsure of the validity of immigrants' foreign credentials and experience, many Vancouver employers seem instead to hire local Canadian graduates (also seeking work for licensing requirements) or an individual who already has attained a P.Eng. Resultantly, many immigrants spend several months or years seeking employment before they will apply for a P.Eng with APEGBC. As Fedor, an electrical engineer from the former Yugoslavia says, "Why should I pay to apply when I have not yet the one-year experience required?"

In fact, it is permissible to apply and begin licensure without having the one-year local experience but many do not want to apply until they are certain they will meet all requirements. At the time of the interview, only six of the 25 foreign-trained engineers I spoke with had sent completed applications to APEGBC, three of whom were in the process of writing their confirmatory (academic) examinations. The remaining 19 others had not applied for various reasons: three said they needed more information about what was required and what would be gained from registration; five said they would not apply because costs were too prohibitive; and nine believed that they needed to get local work experience, or Canadian credentials by either taking English or engineering-related university/college courses before applying.

For example, Malak, who has 17 years experience and a PhD in structural engineering, and has all the required supporting documents (university certificates and letters of reference from previous employers), still has not applied for this reason:

> …but the problem if you apply you have to pay a lot of money - $360 just for application, $110 for each exam. And there are some books you have to buy to prepare for the exam, so I don't know, maybe $1000 you have to spend. Maybe tomorrow I decided to go to Ontario, and they will not recognize the APEGBC. That's the problem…I still didn't apply, because I am not sure how long I am going to stay here without a job so…

There was variation among interviewees regarding the level of understanding of APEGBC's procedures. Indeed, how well interviewees understood APEGBC's licensing requirements corresponded to the means of attaining the information. Those who had already applied, had gone to information sessions, or were currently working in engineer-related jobs, possessed a clear comprehension of APEGBC's procedures.[23] Among the other half, knowledge was much more uneven, particularly stemming from word-of-mouth communication. Misinterpretations included beliefs that there is one single-chance exam, that Canadian education was *required*, and/or that 3 or 4 years of *only Canadian* work experience would be acceptable. Fred exemplifies these misconceptions:

> Because many, many, you know, many, many Chinese immigrants are engineer, used to be an engineer, they want to have engineer job here, and they want to have engineer certificate, but all my friends, all my network, they all failed. It's very difficult and very hard to pass that. First you need engineering education here, this will spend at least 2 years to get a diploma, some BCIT diploma, or you need to spend 4 years in UBC or Simon Fraser to get you engineering bachelor, and then you need to work 2 or 3 years working experience, and then you can apply. Oh, long way…[24]

Information is available on APEGBC's website, but the interviewees who visited this site found it difficult to understand. The information is provided in formal language and uses flow charts to depict the procedures. Inaccurate information about licensing procedures was frequently passed along social networks, and misconceptions were most common among the more recent arrivals. Licensing requirements and procedures for engineering employment thus comes to immigrants from multiple sources, helping both to disseminate information but also creating misconceptions. I suggest then that the one-year requirement is not the only obstacle. Simply not understanding APEGBC's requirements dissuades or prevents many otherwise qualified

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[23] 12 of the 25 respondents illustrated a strong understanding of APEGBC's procedures.
[24] "BCIT" is the acronym for the British Columbia Institute of Technology (which notably does *not* offer an accredited engineering program, but does offer many part-time technical programs). "UBC" is the University of British Columbia, and "Simon Fraser" refers to Simon Fraser University.

applicants from applying. But certainly, because of APEGBC's licensing procedures, gaining engineering employment is anything but an unobstructed, free process. Entrance into the engineer labour market is controlled and regulated through access to professional engineering licenses, creating a barrier for many newcomers (both qualified and unqualified).

The desire or need among recent immigrants to obtain Canadian educational credentials merits further comment, however, due to the frequency of such remarks. Sixteen of the 25 engineers interviewed were either currently enrolled in an educational institution or intended to do so. This strategy adopted by many immigrants to return to school, though, was often not based solely for meeting APEGBC's academic requirements. The concern among immigrants is that the academic institution they attended had low social or symbolic value for Canadian *employers*. It seemed to many recent immigrants that even when armed with a certificate by a provincial credential evaluation agency showing that their foreign engineering degree is comparable to a Canadian programme, employers were still sceptical. For example, Alexei shows frustration over the lack of value of his Ukrainian credentials in Canada:

> And I think I need some education from Canada, Canadian education system, because many people see Dnepropetrovsk State University, it's difficult to pronounce even! University, what university? Maybe it doesn't exist at all!

Among those who returned to school, the goal is not to gain knowledge, but simply to obtain Canadian credentials, hoping this would convince local employers of their competence to obtain a preliminary job and work experience. For example, one recent immigrant who has a PhD in Civil Engineering from a university in Iran said:

> If I can't get a job very soon, I will maybe apply to UBC to complete my second Ph.D from Canada. This I think will be a good chance for me to find a job in Canada. I think that, because if you want to work in Canada, you must have Canadian experience, and this I think is very impossible to get. Nobody will accepted to you because you didn't have Canadian experience, and I don't know how you can get this experience if you didn't work with a company in Canada (Marwan).

Nehru also indicated that he pursued courses in Canada simply for the sake of his resume (notably in a non-university program that is not recognized by APEGBC). He explains:

> I took some courses at BCIT just for the heck of it so that I had some credentials from Canada. I took three courses in BCIT, and I think my marks were in the range of 90-97%. That's fairly good and not too much effort was required to get those… I just took because I wanted to have something of Canada to put on my resume.

The subjective value of academic credentials held by employers based on place of origin may indeed be playing a large role, and is beyond the influence of APEGBC. But for many recent

immigrants, the inability to get a P.Eng and the need for evidence of Canadian credentials go hand-in-hand. Next, the search for employment and the strategies adopted will be further explored.

"Job-Search Skills" Programs and Immigrant Service Agencies

A second example of state institutional influence can be found in state-financed employment assistance programs. After facing APEGBC's licensing procedures that require local engineering experience and the pressing need for some income, finding employment becomes the essential task for many new immigrants. This job search is often associated with an initial shock for many foreign-trained engineers who expected a business community that would warmly welcome their skills.[25] Older engineers from countries where education was fully government-funded also explain that their first jobs were assigned after university graduation, and so they are totally inexperienced in the task of looking for work.

Consequently, many recent immigrants turn to government-sponsored immigrant service agencies around the Lower Mainland for help.[26] In the GVRD, there are at least a dozen large centres offering services ranging from settlement assistance, translation services, English courses, and employment programs, such as job training, career planning, entrepreneurialism and job-search programs.[27] While many of these centres are not-for-profit, employment assistance programs are largely state-financed, and are intended to smooth the employment transition process for immigrants to make use more quickly of the skills and knowledge brought with them. Job-search programs, in particular, vary from one-day resume writing workshops, to six-week intensive job-search training programs tailored to immigrants with professional skills. All but three of the 25 engineers interviewed had taken job-search courses in Vancouver.[28] Three respondents began courses the day after they arrived in Canada. As Peck (1996) notes, local state forms, structures, practices, and institutions considerably impact and mediate the experience of entering the labour market. These Canadian government-sponsored programs are no exception for

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[25] Because engineering qualifications received high points under the immigration points system, many interviewees expected there to be an engineering shortage in Canada.

[26] Despite contacting several immigrant centres on multiple occasions, I am frustrated by the inability to know how many people are using these centres. It would be enormously helpful to see trends by ethnicity and occupational training, but only one smaller centre replied to my request, stating that over a 12 month period, they serviced 300 immigrants in employment programs, of which 41 were engineers. The remaining centres contacted were never able to provide such figures due to reasons such as "out-dated databases."

[27] AMSSA, the Affiliation of Multicultural Societies and Service Agencies (AMSSA) lists 81 member agencies in BC. Not all offer employment related assistance (AMSSA Annual Report 2001).

[28] A bias in this research comes from recruiting immigrants through such centres with posters. 10 respondents contacted me after seeing these posters, but 15 others contacted me through referral or other means, helping to neutralize somewhat the bias in the study sample.

they play a major role in shaping labour market expectations and directing job-search behaviour of recent immigrants.

Evidence of the impression left by job-training programs was clear when discussing job-searches with the engineers. Terminology such as "information interview," "hidden market," "survival jobs," and "telephone techniques," loosely and frequently rolled off the tongues of engineers who otherwise found difficulty expressing themselves. Such expressions, commonly used by engineers who attended *different* programs offered by different agencies throughout Vancouver, illustrate the shared aims and strategies of state-sponsored programs. One example is the common message to search beyond formally advertised jobs, to reach the "hidden market." As Malak says:

> I don't know whether this is for B.C. or Canada, but 15% is advertised job, 85% is the hidden market. They call it the hidden market.

After taking a course geared to professional immigrants, Malak now focuses his job search on contacting firms directly *regardless* of whether they have posted job openings. His strategy is to reach what he has been told is the sizeable number of unadvertised jobs. Nine other interviewees also mention needing to reach the "hidden market."

In total, of the 22 who took courses through immigrant service agencies 18 described using learned techniques. Based on information from interviewees, these job search courses stress the importance of establishing and using a wide social network to learn of jobs, contacting appropriate companies regardless of postings, writing professional cover letters and resumes, and maintaining a systematic search approach. Clearly, strategies for looking for work are positively developed and transformed as a result of the courses taken and advice received.

A small number of interviewees who attended job-training programs nevertheless did not heed the advice they received. For example, Alexei finds the suggestions of job training programs helpful, but is not comfortable making use of them. He says:

> [My instructors] helped me learn how to make phone calls and showed me different methods to look for work. The problem is that networking like they suggest is not feasible. I cannot employ them to their full extent. It is difficult for me to speak with a person…

Alexei's concern arose from being overly self-conscious of his language abilities. Particularly when speaking with professionals or potential employers, he felt inadequate and nervous about saying the wrong thing or making the wrong impression. Many others similarly expressed uneasiness in making such contacts saying they did not feel comfortable in English. Many techniques require assertive behaviour, such as networking and phoning companies who

have not placed postings. Engineers who were more introverted or uncomfortable with their language abilities resorted to other recommended activities that do not require communication. For example, Tomas also spoke of spending 75% of his time "researching" companies on the internet so that *when* he eventually contacted them, he would be prepared. Horado, however, expressed regret for following the advice of his counsellor. He came to Canada with intentions of finding professional employment, but in a course not tailored to professionals was encouraged to get "survival job:" These "survival jobs" are what is commonly referred to in the immigrant community as a job taken simply to have income, usually requiring few skills, and paying little.

> Horado: [The instructors] told us all the time that we should find a survival job, any kind of job. After that we can try to find a job in our profession, and I think this is a mistake…
>
> KG: Why did you think it was a mistake?
>
> Horado: I feel my self-esteem came, er… went down. Yeah, when I came, I started looking, I sent my resume, I went to visit some people. That was before that program. I didn't know too much about the workplace, but I was looking for [a] job in engineering. I thought it would be easy. It wasn't. And then I found that program, and they say that we should be looking for any kind of job, survival job. (…) But I found a survival job, but I didn't feel good.

Although Horado's case was atypical from all other foreign-trained engineers with whom I spoke, I raise it because of the overwhelming influence that counsellors seem to have on directing new immigrants into certain jobs. In Australian society, Fincher *et al.* (1993: 12) believe that job search agencies (state or non) expose new immigrants to the staff's stereotyped view about what immigrants "should" do, or are best suited to work at. I do not think that this is a danger in the centres that I encounter in Vancouver, but employment counsellors have considerable impact on shaping labour market behaviour, and negative or inappropriate advice will have adverse consequences on newcomers. This is important because few programs in Vancouver are specifically targeted to professionals. Taking courses geared to gaining general employment wastes the time of the professional, and may direct other highly skilled immigrants into low-skill labour before they attempt to find work using their skills. A recent Ontario report indicates that immigrants who do not gain professional employment as their first job in Canada experience greater difficulties eventually entering their field. Receiving appropriate assistance is invaluable to gaining an appropriate first job (see OMTCU 2002: 37).

Social Institutions: Co-ethnic Networks and the Diffusion of Job Opportunity Information

The second type of institutional or structural influence that I will consider with regards to foreign-trained engineers seeking employment and licensure in Vancouver are "social" institutions. For

this paper, social institutions are considered to be structures of social relations that "embed" individual decisions and economic activity (Granovetter 1985). Rather than discussing the entire literature on the social nature of labour, I choose to focus on the particular concepts on "social capital" and "social networks" for they have gained recent salience in labour market studies, particularly among immigrant communities. "Social capital" as a concept has received increasing attention in recent years in multiple disciplines to describe the benefits of group membership.[29] Loosely defined, having social capital means accessibility to resources available within and through networks of personal contacts for (mainly economic) gain. The original use of the term 'social capital' is attributed to the French sociologist Pierre Bourdieu who defined the concept as:

> the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition (1986: 248).

This definition emphasizes social capital as the benefits accrued to an individual by virtue of their participation in groups. Bourdieu (1986) suggests that individuals may deliberately construct social relations for the purpose of creating this resource. The ultimate goal with this usage, then, is to have a large quantity and high quality of people in one's social circle. This will provide a better resource (material and non-material), and result in better economic capital, the ultimate purpose of accruing social capital.

Other studies, however, illustrate that social capital can also have a *negative* or exclusionary effect. Waldinger (1995), for example, illustrates the "other side" of embeddedness. Just as social capital provides access to group members it can exclude others who do not have membership. This is particularly important in studies of ethnic networks because immigrants of different ethnicities who do not have access to the needed cultural bond may be excluded from the same resources. Waldinger writes:

> the same social relations that embed economic behaviour in an ethnic community and thereby enhance the ease and efficiency of economic exchanges among community members implicitly restrict outsiders (1995: 557).

Waldinger finds that "most immigrant economies are highly specialized in a few industries or business lines where ethnic firms enjoy competitive advantages" (1995: 561). The trust that is created between co-ethnics is invaluable to success in certain industries, but *it is not available to everyone*.

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[29] Portes (1998) attributes social capital's novelty and heuristic power to its ability to call attention to how non-monetary forms can be important sources of power and influence.

Similarly, networks of relations among members of an ethnic group, or "ethnic networks," are a particularly important element of social and economic organization within migrant communities (Mitchell 2000). Networks of ethnicity are social relations based on commonalities shared by a group, consisting generally of a combination of language, culture, religion, and/or region of origin (*ibid)*. Within migrant ethnic communities, these ties are particularly valuable in providing support, assisting in the settlement process, and sharing knowledge about the social and economic organization of the new community (Castles and Miller 1998). Because occupational skills are commonly devalued and language skills may be poor in the new country, "immigrants' economic destinies depend heavily on the [social] structures in which they become incorporated" (Portes and Sensenbrenner 1993: 1322). Currently, co-ethnic networks of recent immigrants are believed to assist in developing major components of the informal economy, particularly in the United States as other immigrants in this sector bring in unemployed newcomers (Sassen 1991). As immigrants new to a country are likely to have few contacts for employment, they are likely to rely heavily on co-ethnic assistance.

So do co-ethnic contacts play an important role in securing professional employment? In a now classical study titled *Getting a Job,* Granovetter (1974) importantly illustrates that social contacts are of utmost importance for diffusing job opportunity information for professional positions. While his study focuses on white, male professionals (i.e. not recent immigrants or ethnic minorities), his empirical findings indicate that job searches based on "informal methods" (word-of-mouth) net the most successful professional jobs – reaching the highest paying and most satisfying jobs because labour market information is "transmitted as a by-product of other social processes" (1974: 16). In other words, one's social circle impacts one's information network. So those who have the right professional contacts (well-placed social contacts on the "inside" of the profession) are informal recipients of relevant and often hidden job opportunity information.

If Granovetter is correct (and Vancouver's job-search counsellors would certainly agree), informal word-of-mouth contacts should be the most promising method to learn of professional engineering jobs for foreign-trained engineers. The engineering job seekers in this study are certainly aware of the importance in having the right contacts. But despite being aware of the importance, 19 felt their network of social contacts was inadequate or underdeveloped (i.e. they have weak social capital). They believe finding professional employment is contingent upon knowing local professionals, and were clearly frustrated with their underdeveloped networks. Oman says, "But the main problem here is that we miss the network. I miss the network." Rationales offered to explain their undeveloped networks included language barriers (although

only six expressed concerns over English abilities in the interview), being newcomers to Vancouver, having limited contact outside their ethnic community, and being too busy between their survival job and formal job search to meet people. For instance, Markov said:

> Because especially for me it's difficult to find [contacts] in my [engineering] field… … you see, because I do not see any way of coming in touch with people, like people in business, so where can we meet each other? I wouldn't think there is such probability. So because I do not have much time for recreation or an occasion where there are these sorts of people, so I cannot afford it for myself… I cannot just have acquaintances or any people I meet and just say can I just make friends with you (laughs). It must be natural.

Yet while all interviewees stress the importance of having the right contacts or network, when describing their own practice of looking for work, the greatest amount of time is not spent socializing or speaking with others, but surfing the internet.[30] They employ it to search job postings at sites such as www.monster.ca or www.workopolis.ca. It is also used to search and gain information about companies who will later be contacted regardless of available postings – a technique encouraged in job search courses, again to reach the "hidden market." However, the success rates with the internet were low. None of the interviewees had received a response after applying to posted positions, and only five had been granted the requested information interview after targeting specific firms. Nonetheless, it is heavily relied upon and enormous amounts of time are spent searching the internet because, as Hector says, "It's easy… and you never know." Nehru guessed he spent around 75% of his day surfing the internet, and Jasmine said around 90% of her time is spent using this tool. In doing so, however, they make no social contacts.

This is not to say though that these foreign-trained engineers are without social contacts. Every engineer interviewed mentioned co-ethnic contact in Vancouver, though the number and level of involvement varies enormously. Several respondents received settlement and housing assistance from family members or other co-ethnics contacted prior to migration. Many of the South Asian and East Asian engineers spoke of links with innumerable other co-ethnics. Barbara said, "I don't see local people. Only Chinese, only Chinese." There is also a relatively large Iranian community on the North Shore (North Vancouver). In comparison, the various South American and Eastern European ethnic groups described small communities in Vancouver, yet all still had at least some co-ethnic contact. Cultural and familial bonds heighten trust and indebtedness in a new host society and hence constitute strong social ties.

The willingness of co-ethnics to assist, however, does not necessarily translate into the provision of valuable information about job opportunities. On the contrary, the assistance offered

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[30] 23 of the 25 interviewees say they spend the greatest time surfing the internet.

to engineers was heavily limited to helping find "survival jobs" (non-professional employment). For the most part, the social capital or networks that most immigrants possess are tied to their ethnic community, where few professional success stories are found in Vancouver, and knowledge of underemployed engineers abound. Only six interviewees could even name an immigrant engineer who had found engineering employment. With previous immigrants unable to attain professional employment, a negative cycle of cumulative causation begins: the lack of social contacts for engineering employment is perpetuated through each successive wave of immigrants, establishing a cultural group excluded from knowing available, but unadvertised job opportunities.

Attaining survival jobs is relatively easy for recent immigrants, and 14 of the interviewees had accepted such offers of work. These jobs included working as "back staff" in restaurants, in convenience stores, in a factory/assembly line, as a cleaner/caretaker, in construction, and two had worked in engineering-related jobs (albeit considerably lower-status and with lower-pay) as technician assistants.[31] Seven interviewees simultaneously held more than one survival job. These low-pay, low-skill jobs were readily available for those interested, and over two-thirds of interviewees obtained these low-skill jobs through co-ethnics.[32] Barbara, a Chinese structural engineer, describes getting her factory job:

> My friends introduced me. I think many people from China they get their first job through the friends introducing. If they try to find a job alone it's hard, it's difficult. Right now the boss I am working for is Chinese.

Rogelio also said:

> Almost all Mexicans have a job under the table. Almost all of them. And it's like a chain. 'Okay, I'm looking for a job, do you know something?' 'Well I have something in cleaning offices,' so basically the jobs under the table for Mexican people at least can clean offices, construction, that's basically it. Connections, friends, 'Well, I'm leaving my job because I'm going back to Mexico, do you want to take it?' 'Okay, do you know somebody who is willing to take it?' And after that, any job after that, 'hey do you know a friend, we need a dishwasher, for cheap, $7 an hour because it's under the table. Do you know somebody? Okay.' To one of those jobs, 2 or 3 friends. One of those guys is back in Mexico and the other one I don't know. That's the way you get the jobs here.

As Rogelio's description suggests, many survival jobs are reserved for other needy or trustworthy co-ethnics. Some who worked in factories or restaurants described working solely

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[31] Discussions about "survival jobs" were often short and simple. Respondents often lowered the eyes and/or voices when describing the jobs that they had performed, seeming embarrassed and uneasy about admitting this work. Nehru feared that engineering employers would look down on him doing "survival jobs", but after 8 months, he needed income.
[32] The remaining one-third got their jobs through applying to newspaper advertisements.

with other co-ethnics, entering ethnic niche industries in Vancouver. Hiebert (1999) has also found patterns of occupational segmentation along ethnic (and gender) lines in Vancouver.

Many foreign-trained engineers, however, do not want to become like their co-ethnics who are working in jobs that do not employ their professional skills, and 11 declared they were strictly opposed to survival jobs. Nehru says:

> I spent ten precious years of my life. It isn't that easy to get admission into engineering colleges in India…it's a very intensive competition and needs intensive study. Having come this far, I don't want to go and start a smoke shop or anything like that.

Such engineers would rather move again elsewhere in Canada, to a third country, or home before giving up their professional identity.

An interesting exception to the seeming lack of professional co-ethnic assistance was found among the South Asian community. Two of the engineers who emigrated from India were members of an association called the Society for Punjabi Engineers and Technologists of British Columbia (SPEATBC). This organization, founded in 1995, is expressly intended to promote the Punjabi culture within engineering, and engineering within the Punjabi community. It was introduced to two Indian engineers I interviewed, Vasin and Nehru, when they were desperate for employment assistance. Currently with over 300 members (membership is free), it is an association comprised of immigrants from India who have been professionally successful in Vancouver, new immigrants, and second-generation Indian immigrants.[33] The society organizes monthly executive meetings, an annual picnic, an annual barbeque, a bowling night, and professional development programs throughout the year. Through these social events, it offers Indian-trained engineers exactly the opportunity that so many foreign-trained engineers are seeking: the chance to socialize casually with successful professionals, who as potential employers and co-ethnics can recognize the validity of their overseas engineering training. It was through SPEATBC contacts that both Nehru and Vasin gained their current engineering-related jobs. And while both are still *under*employed, they are working in their field, progressing through APEGBC's licensing examinations, and feeling positive about future professional engineering employment.

SPEATBC is the ideal opportunity for new Indian immigrants to develop social capital comparable to that which they had before migration. Because of a common cultural bond and the trust and recognition of academic institutions, recently-arrived foreign-trained engineers are

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[33] Membership is not limited to Punjabis. Currently the association also has members from throughout India, Pakistan, and Bangladesh.

provided with a forum to make social contacts with professionals who are aware of engineering employment opportunities, and who are willing also to assist. Intriguingly, this single example of promising and helpful social interaction with co-ethnic professionals was arranged through a *formal* social institution, or what Vasin calls a "networking organization." This "casual" social interaction occurs at *organized* events, not *randomly*, as Granovetter's notion of information dispersal implies.

In summary, co-ethnic contacts are of mixed value in assisting foreign-trained engineers to find professional employment. The social capital that newcomers can access usually provides only settlement assistance and knowledge of low-skill, "survival jobs." An interesting exception, however, is found with SPEATBC, an ethnic-based social organization created by successful engineers to assist recently arrived co-ethnics.

Summary, Policy Remarks and Future Research

Through interviews conducted with 25 foreign-trained engineers in Vancouver, I find evidence of multiple institutions controlling, shaping, and governing access to professional employment for recent immigrants. Beginning with regulatory and state institutions, the greatest (and most evident) institutional impact occurs when foreign-trained engineers encounter APEGBC. Because engineering is a regulated profession in Canada, a "P.Eng" title is legally required to work in the profession. Recent immigrants with foreign training and experience must meet the licensing requirements, including the difficult condition of gaining one year of relevant engineering experience in Canada or the US to enter the labour market of professional engineering work. This local experience is the most significant obstacle noted by foreign-trained engineers in the study. The need to gain a licence, coupled with the need for income means convincing a local employer to hire them *without* a P.Eng licence. It becomes an all-consuming task for many newcomers. To compensate for their lack of institutional recognition, a large number of recent arrivals seek Canadian educational credentials to illustrate to employers their technical competence and local aptitude. Few pursue education to gain new knowledge, and spend valuable time and money seeking credentials to impress employers.

Immigrant service agencies offering job search programs that are partially state-funded also influence an immigrant's job-seeking behaviour, and are popular among foreign-trained engineers. Generally, these programs promote systematic, extensive job searches that look beyond formally advertised positions. Employment counsellors promote "networking," meeting

other professional engineers, sometimes by requesting information interviews, but also by actively phoning engineering companies. Most of my sample group of engineers were certain that this advice would provide the key or secret to attaining their desired job, but several also expressed discomfort in employing these techniques. Clearly, then, these state-financed institutions shape the experience and expectations of immigrant engineers in entering the Vancouver labour market.

The ability of foreign-trained engineers to use social contacts to their advantage, as well as the broader influence of social institutions was also a key issue. Social contacts with co-ethnics were generally found only to be of assistance in finding non-professional, low-skill employment, or what many immigrants call "survival jobs." Significant numbers of interviewees knew co-ethnics who resorted to accepting low-skill labour jobs in Canada when professional occupations were unattainable. Having the "right" professional social contacts, then, required extending social relations beyond their ethnic community. Few interviewees knew of successful immigrant engineers who could provide them with assistance or guidance in gaining professional employment, and were left hoping simply to be "the right person at the right time." It seems, then, that exclusion from professional social circles is perpetuated in a vicious cycle: foreign-trained engineers are excluded from "inside" information about available engineering job openings, and so remain in survival jobs, but as a result they then cannot provide later rounds of immigrant engineers with social contacts either, and they in turn are forced into survival jobs. An interesting exception was found with respect to ethnic social networks. Among the South Asian community, an ethnic-based formal networking association was established to assist newcomers gain entrance into the profession. By creating social opportunities for newcomers to speak with successful Indian engineers, recent Indian immigrants are given the opportunity to speak with professionals who respect and recognize their foreign credentials, have an interest in helping them to find employment, and can share information about "hidden" or unadvertised engineering positions from "inside" firms.

Recent policy responses to the problem of immigrant skill underutilization have been to establish academic credential evaluation services in many provinces (Mata 1999). These include the International Qualification Assessment Service (IQAS) in Alberta, the Manitoba Credentials Evaluation Program, the International Credential Evaluation Service (ICES) in BC, the *Service des Equivalences* (SDE) under the *Ministère des Relations avec les Citoyens et de l'Immigration*

of Quebec, and the most recently established World Educational Services (WES) in Ontario.[34] This is an important first step for creating information banks to evaluate the innumerable different degree programs immigrants bring to Canada. This reduces "statistical discrimination," where employers or licensing bodies negatively evaluate degree programs or institutions about which they have limited information, resulting in even qualified applicants being viewed unfavourably (Mata 1999). In Canada, however, these services remain provincial, if they exist at all. To maximize sharing of information, a national credential evaluation body would be most effective, as well as continued and increased Canadian involvement in international professional recognition agreements.

However, recognizing formal degrees alone is insufficient in two regards for professional immigrants. First, most professional regulatory boards, such as APEGBC, insist on performing their own evaluations, and hence do not accept evaluations done by provincial centres. Second, most professional occupations require a residency period before granting the licence. Gaining employment to fulfill a residency requirement necessitates much more than having recognized academic credentials. As this study has shown, gaining local professional employment ('experience') is perhaps the greatest obstacle of all in obtaining a full-time, long-term engineering position. Again, entering the labour market is very much a social process. Employment opportunities are shared through social networks. Many recent immigrants have little-to-no social contact with professionals, and are out of the information loop. They also have few social contacts who can speak on their behalf when internal hiring decisions are made. More social interaction and assistance with practitioners and employers would enable newcomers to learn workplace norms, hiring procedures, and most importantly, to gain information about available jobs. A mentorship program that brings new immigrants in contact with established professionals in their field would provide preliminary information about licensing requirements, and possible employment avenues. Skills for Change in Ontario has initiated such a program (Silkowska-Masior and Swajkowski 1998). The difficulty, however, as Granovetter suggests, is that job availability information is only passed when there is a propensity to assist the job seeker. This is an unavoidable aspect of the social nature of labour. Still, being a mentor on an occasional basis to recent immigrants could become a requirement of having a professional license, and would at least open dialogue.

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[34] ICES received assistance from the provincial Ministry of Multiculturalism and Immigration for set up in 1995, but now operates independently on a cost-recovery basis. The SDE is the most widely used agency and was established in 1981. WES was created in 2000.

In addition, whether employers are discriminatory or not, they are also faced with a lack of information about foreign applicants. If a foreign-trained engineer applies for a job without a P.Eng, an employer does not know the reason they are unlicensed; the applicant may meet all requirements with the exception of one-year local experience, or the applicant may be completely unqualified. APEGBC could design a new category for foreign-trained engineers that indicates that they have met all other academic and professional requirements, but now require local employment experience. Such a program would considerably assist employers trying to determine the aptitude of foreign-trained applicants.

More broadly, APEGBC has been an exemplary regulatory board in its willingness to be involved in discussion on licensing foreign-trained professionals, and for attempting to make procedures more transparent and in accommodating applicants' characteristics (e.g. introducing the interview process for more experienced engineers). Indeed, many regulatory boards have made recent attempts such as creating fact sheets that outline licensing requirements; however, there are several (particularly in the health sciences) which remain opaque and cloak their procedures with secrecy. Behind these closed doors may be outdated or discriminatory selection criteria. Regulatory boards need to be pressured to review their licensing procedures to ensure that they are fair, easily understandable, and as equally open to foreign-trained professionals as home-educated ones.

Finally, more research is needed to decipher many of the ethnic and gender trends uncovered in this research. First, the level of social support and professional linkages in the different residential communities in which immigrants settle is unclear. Ethnographic research on various ethnic communities around Vancouver and the spatiality of communication networks would shed further light on this issue. Second, a gendered analysis of the strategies employed by professionally-trained women immigrants, particularly in a masculine field such as engineering, would be instructive to see how gender positions play out differently in the socially constructed labour market. Third, a comparative study with engineers in another Canadian city or province would heighten our understanding of the place-specific nature of the institutions under analysis. Further investigation into these issues would lead, I believe, to a deeper understanding of systematic institutional barriers to immigrant skill utilization, an issue central to the lives of immigrants, Canadian immigration policy, and the Canadian labour market, and thereby provide a basis for their removal.

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Appendix 1: NOC Classifications used for LIDS Data

To determine the inflow of immigrants declaring "engineering" as their desired profession, these are the types of engineers that I included, based on the National Occupational Codes.

NOC Engineering Codes

2131	Civil Engineer
2132	Mechanical
2133	Electrical and Electronics Engineer
2134	Chemical Engineer
2141	Industrial and Manufacturing Engineer
2142	Metallurgical and Materials Engineer
2143	Mining Engineer
2144	Geological Engineer
2145	Petroleum Engineer
2146	Aerospace Engineer
2147	Computer Engineers
2148	Other Professional Engineers, n.e.c.
0211	Engineering Managers

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