

Trades-Related Post-Secondary Educational Attainment among Immigrant and Canadian-Born Young Adults in Alberta

Parvinder Kaur Hira-Friesen¹, Michael Haan², Harvey Krahn³

University of Calgary¹, University of New Brunswick², University of Alberta³

This paper examines trades-related and university educational attainment (by age 25) of immigrant and Canadian-born Alberta youth while controlling for gender, family socio-economic status, high school grades, and parental encouragement regarding higher education. Data from the longitudinal Alberta School-Work Transitions Study (1996 – 2003) reveal significant differences between immigrants and non-immigrant young adults in terms of trades-related post-secondary education (PSE). Multinomial logit analysis shows that Alberta immigrant youth are significantly more likely than their Canadian-born counterparts to attain trades-related PSE credentials by age 25. Important factors explaining these differences include parental encouragement and high school grades.

Cet article porte sur les réalisations relatives aux métiers et à l'éducation universitaire avant l'âge de 25 ans chez de jeunes immigrants d'une part et de jeunes albertains nés au Canada d'autre part. L'étude tient compte du sexe, du statut socioéconomique de la famille, des notes au secondaire et de l'appui parental en ce qui touche l'enseignement supérieur. Les données provenant d'une étude longitudinale albertaine portant sur le passage de l'école au travail (Alberta School-Work Transitions Study 1996 – 2003) révèlent des différences significatives entre les jeunes adultes immigrants et non-immigrants quant à l'éducation postsecondaire associée aux métiers. Une analyse logit multinomiale démontre que les jeunes albertains immigrants sont nettement plus susceptibles que leurs homologues nés au Canada à obtenir un diplôme d'éducation postsecondaire associée aux métiers avant l'âge de 25 ans. Parmi les facteurs importants qui expliquent ces différences notons l'appui parental et les notes au secondaire.

The need for skilled workers has intensified and higher education has become an even more important determinant of Canada's overall competitiveness and economic well-being (Pyper, 2008). One solution may be immigration, admitting newcomers willing to be educated in, and subsequently employed in, skilled trades. Policy makers have offered incentives to persuade young Canadians to pursue employment in the trades, and possibly attract additional newcomers to Canada to take advantage of these programs. The Apprenticeship Incentive Grant, The Apprenticeship Job Creation Tax Credit, and The Tradesperson's Tools Deduction aim to boost the depleted skilled worker pool (Canada Revenue Agency, 2006; Canada Revenue Agency, 2007; Employment and Social Development, 2007).

Canada's tightest labour markets frequently experience shortages in skilled-trades workers,¹ making trades-related post-secondary education (PSE) a critical area for research. This type of PSE often involves a shorter period of training and a reduced economic burden on families. Although all Canadian families could benefit from lower PSE costs, this is especially true for newcomers who immigrate to Canada in part for a better life for their children. Hence, apprenticeship programs and technical diplomas have the potential to provide immigrant youth, whom we define as someone born outside of Canada, with a type of knowledge that meets specific demands within the host country. This applies particularly to resource-extraction and trade-focused economies. Thus, greater employment opportunities for immigrants with trades-related education, in comparison to those with university degrees, may contribute to the governments' goals of encouraging immigrants to settle in second and third-tier cities, rather than in Montreal, Toronto, and Vancouver (Frideres, 2006).²

In Canada, employment in the trades across all industries, where workers are 15 years of age and older, has steadily increased by 2.2% on average per year since the recession of the early 1990s (Pyper, 2008). Alberta, with about 9% of Canada's population in 1986, and 10% in 2006, accounted for 9% of all trades employment in Canada in 1987, but a full 15% by 2007 (Pyper, 2008). This is in sharp contrast to Ontario, where trades employment experienced a downturn from 41% of all trades employment in Canada in 1987 to 36% in 2007. Thus, Alberta is an ideal location for exploring trades-related education among immigrant youth. While the province's economy was already very strong in the late 1990s, it became even stronger in the 2000s, as evidenced by a 43% increase in the provincial GDP between 2002 and 2005 (Cross & Bowlby, 2006) and a drop in the unemployment rate from 6.9% in 1996 to 5.1% in 2003 (Statistics Canada, 2013). In 2006, Alberta's unemployment and employment rates were an impressive 2.9% and 71.1% respectively (Cross & Bowlby, 2006).

This study compares immigrant youth residing in Alberta with their Canadian-born counterparts in terms of their PSE attainment or completion rates in trades-related training (i.e., technical school diplomas or completed apprenticeships).³ We use the term *trades-related*, rather than *skilled trades*, since the latter concept is sometimes taken to refer only to blue-collar trades. However, in Canada some technical schools also offer diplomas leading to employment in business, accounting, secretarial/legal assistance, communications, and health-related areas. Most apprenticeships are in the skilled (blue-collar) trades, but apprenticeships can also be completed in beauty culture and food preparation, for example. Thus, the category of trades-related training is quite broad. What is important for our analysis is that, for both the blue-collar and white-collar varieties, individuals have made a decision not to attend university.

Specifically in our analysis, we show that there are substantial differences between university and trades-related PSE attainment among Alberta youth. Additionally, we demonstrate that these differences are not the same for immigrant and Canadian-born youth residing in that province. Moreover, we ask whether family values (in the form of parental encouragement for different types of PSE), high school grades, family finances, and parental education help explain these differences. We use province-wide data from the longitudinal Alberta School-Work Transitions Study (SWT) to focus on immigrant youth trades-related and university PSE attainment.

This study is important for several reasons beyond the most obvious; namely, the frequently expressed need for more skilled workers in Canada and debates about how this need might be best met. In addition, our findings highlight regional variations in patterns typically assumed to be national, namely, the greater preference for university over trades-related education among

youth, particularly among immigrants. In a resource-based economy such as Alberta's, patterns and determinants of PSE attainment can take quite different forms. Finally, this study adds to the small but growing literature on the important role played by immigrant parents in the educational choices of their children.

Immigrants' Post-secondary Educational Attainment in Canada

Higher education attained in Canada, regardless of whether it is university or trades-related, is a key determinant of the successful integration of immigrants into Canadian society. The existing immigrant PSE research focuses primarily on university education. This is not surprising, given that Looker and Thiessen (2004) reported university as the "pathway of choice" (p. 23) among Canadian youth in general. Furthermore, self-reported immigrant PSE aspirations are considerably higher than those of their Canadian-born counterparts. For example, Krahn and Taylor (2005) reported that in 2000, 61% of a sample of over 26,000 Canadian 15-year-olds (immigrant and Canadian-born youth) stated that they planned to attain one or more university degrees. This analysis of Statistics Canada's Youth in Transition Study (YITS) also revealed that immigrant youth were significantly more likely than Canadian-born youth to aspire to a university education (77% versus 50%). The same national study showed that very few students (6%) and a similar small proportion of parents (7%) had aspirations for trades-related PSE (Krahn and Taylor, 2005).

Anisef, Axelrod, Baichman-Anisef, James, and Turritin (2000), Boyd (2002), and Davies and Guppy (1998) also reported that immigrant youth have higher educational aspirations and are subsequently more likely to fulfill these aspirations when compared to Canadian-born youth. However, these previous studies have looked only at national patterns (Boyd, 2002; Davies & Guppy, 1998; Krahn & Taylor, 2005) or only at Ontario (Anisef et al., 2000). Possible regional/provincial differences have not been explored. Since 2011, Census data showed that western provinces are now the fastest growing,⁴ therefore, a careful look at PSE attainment of immigrant and Canadian-born youth in one of these provinces, such as Alberta with a strong resource-based economy, would be very useful.

Family Socio-Economic Status, Grades, and Intensive Parenting

Families with a high socio-economic status (SES) usually include one or both parents with a university education. As such, these parents are better positioned to help their children navigate the education system, getting them into better schools and helping them make more informed post-secondary educational choices. Parental modeling, along with more financial resources, increases the chances of children from these families completing post-secondary education.

Canadian studies showed that the majority of parents are eager for their children to continue their studies beyond high school and nearly all want their children to attend university (Krahn & Taylor, 2005; Sweet, 2005). This is particularly true for immigrants, and points to the presence of *newcomer optimism* (Kao & Tienda, 1995; Louie, 2001). What is not known is whether, in provinces like Alberta where the trades are more common and provide high incomes, these aspirations also include trades-related PSE. It is possible that in such settings some, or perhaps many, immigrant youth as well as their Canadian-born counterparts may wish to pursue trades-related PSE even though they have competitive grades for university admission, as well as parental encouragement to pursue a university education. Alternatively, it may be that young

people with relatively lower grades, whether immigrant or not, are more likely to be encouraged by their parents to go into the trades.

Sweet, Mandel, Anisef, and Adamuti-Trache (2007) defined intensive parenting as a method of parenting required to ensure PSE access for children involving “long-term educational planning and preparation strategies” (p. 2). Such preparation involves not only “establishing realistic PSE goals but also investing considerable material, social, and emotional capital in their children’s K-12 schooling” (Sweet et al., 2007, p. 2). Sweet, Anisef, and Walters (2008) proposed that such intensive parenting is more common among immigrants, and is a form of investment in their children. Glick and White (2004) also suggested that immigrant youth are more likely to pursue PSE, and that their parents have higher expectations for them, compared to their third-generation counterparts, even after controlling for family SES, ethnicity, and family structure.

In short, parental involvement in, and encouragement for, a child’s academic pursuits are a key determinant of immigrant academic success. Furthermore, Sweet et al. (2008) argued, “most immigrant children display the necessary levels of commitment to their studies, especially those in families where both parents are foreign born” (p. 1). In a province like Alberta where the trades made up 9.4% of the total labour force in 2007, compared to only 6.7% in Ontario (Pyper, 2008), and can generate high incomes, intensive parenting on the part of immigrant families might involve them encouraging their children to pursue a trades-related higher education.

Methods

Research Design and Sample Characteristics

In 1996, Grade 12 students in a cross-section of 58 Alberta high schools in different size communities and in both public and Catholic school districts, completed self-administered questionnaires in class (Krahn & Hudson, 2006). The Population Research Laboratory from the Department of Sociology at the University of Alberta was responsible for data collection. The sample of schools was constructed to be representative of the population of Alberta Grade 12 students, with two exceptions. A small minority of Alberta youth graduating from private high schools, and schools on First Nations reservations were not sampled. These two groups combined would constitute, at best, about 5% of all Alberta high school graduates (Krahn & Hudson, 2006).

Although 2,681 students completed the questionnaires in 1996, only 73% ($N = 1,967$) provided their name and contact information for a follow-up study. In 2003, the research team conducted 1,175 telephone interviews and received 43 completed mail questionnaires for a total of 1,218 respondents in the Time 2 follow-up sample. This translates into a response rate of 45% for the full 1996-baseline sample or 62% of the subset of sample members who had provided contact information in 1996 (Krahn & Hudson, 2006).

Most (59%) of the Time 2 non-response was due to telephone interviewers being unable to locate respondents, 13% was a consequence of unanswered answering machines, and 17% involved other reasons (Krahn & Hudson, 2006). Older high school graduates (19 years of age or older in 1996), those born outside Canada, members of visible minority groups, and disabled graduates were somewhat less likely to have participated in the 2003 follow-up survey. Since the final 2003 sample was not weighted to correct for this non-response (the population data needed to calculate appropriate weights were unavailable), findings that highlight these

particular groups need to be interpreted more cautiously. Nevertheless, the 2003 response rates did not differ significantly by gender, region, community size, family background, or respondents' school and work experiences in 1996 (Krahn & Hudson, 2006).

The final follow-up sample ($N = 1,218$) was weighted to make it once again representative of the 1996 Alberta high school graduating class in terms of school size, community size, and school district (Krahn & Hudson, 2006). The 2003 sample ($N = 1,218$) contained slightly more females than males. By 2003, 48% of respondents were 24 years of age, while 42% were 25 years old (only 2% were under 24, and 8% were over 25). One in ten, or 9%, of the respondents had been born outside of Canada, while 14% self-identified as a member of a visible minority group. Only a small proportion (4%) of the follow-up survey participants reported that they were of Aboriginal origin.

Measurement

The Time 2 SWT survey asked whether, by age 25, participants had completed any PSE including university, community college programs, technical school programs, and formal apprenticeships. For the dependent variable in our multinomial logit analyses below, we separated PSE educational attainment by age 25 into university degrees (coded 2) and trades-related training (apprenticeships and technical school diplomas) coded as 1. A majority of trades-related PSE credentials (60%) acquired by study participants were in blue-collar skilled trades, 12% were in accounting & secretarial areas, 13% were health-related, and 15% were apprenticeships in beauty culture or food preparation. Study participants who had acquired neither kind of PSE credential, including those with community college diplomas, were assigned a value of 3.

Our primary independent variable was the respondent's immigrant status. We also examined the effects on type of PSE attainment of gender, Grade 12 grades (50-64%; 65-79%; 80% or more), and two measures of family SES: parental education (either one or both parents have a degree = 1; other = 0), and family financial situation (below average, average, above average). An additional predictor was a measure of parental PSE encouragement constructed from two Likert-style questions, the first asking respondents to agree or disagree that their parents encouraged them to get a university education, and the second asking similarly about a technical school education. This derived variable had three categories: encouraged to attain university credentials coded as 1=yes, encouraged to attain trades credentials coded as 2=yes, no encouragement=reference category. All independent variables were self-reported by study participants (i.e., 18-year-old Grade 12 students) at Time 1 (1996).

Profile of Immigrant and Non-Immigrant Youth in Alberta

Reflecting previous research (e.g., Boyd, 2002; Krahn & Taylor, 2005; Sweet et al., 2008), immigrant youth were more likely than their Canadian-born counterparts (62% versus 46%) to aspire at the age of 18 to go to university (see Table 1). However, almost equal proportions of immigrant (25%) and Canadian-born youth (23%) aspired to a trades-related PSE. Post-secondary attainment profiles of immigrants and non-immigrants were quite different. By the age of 25, 45% of immigrant youth had acquired a bachelor's degree, in contrast to 39% of non-immigrant youth, although this difference was not significant. Additionally, 32% of immigrant youth reported trades-related post-secondary credentials compared to 23% of their Canadian-

Table 1

Post-Secondary Aspirations, Attainment, and Grades by Immigrant Status (SWT 1996/2003)

	Immigrant (n=96) %	Non-Immigrant (n=1050) %
Aspirations in 1996		
Aspire to Attend University *	62.3	46.2
Aspire to Pursue Trades	25.6	23.4
Education Credentials in 2003		
Bachelor Degree	44.7	38.8
Technical Diploma or Apprenticeship *	32.2	23.1
Grades in 1996		
50-64%	25.28	23.55
65-79%	46.07	53.32
≥80%	28.65	23.13

* p < 0.05

born counterparts. In short, not only are immigrant youth more likely to acquire a university education, but they are also exceeding their Canadian-born counterparts in attainment of trades-related education.

Children in families with high SES are typically more successful in school because they have access to a wider range of material and cultural resources (Davies & Guppy, 2006). This is particularly important for immigrant families as they face added challenges upon arrival in their host countries.

As indicated in Table 2, 41% of non-immigrant youth reported that their family financial situation was above average as compared to 37% of immigrant youth, but the difference was not statistically significant. Interestingly, a greater proportion of immigrant youth (39%) reported either one or both of their parents having a university degree, as compared to non-immigrant youth (34%), but again this difference was not significant. This pattern likely reflects the situation for the majority of Canadian immigrants as this country's immigration policies give preference to highly educated immigrants.⁵

Table 2

*Family Finances, Parental Education, and Parental Encouragement by Immigrant Status (SWT 1996/2003) **

	Immigrant (n=96) %	Non-Immigrant (n=1050) %
Family Finances (1996) *		
<i>Below Average</i>	5.6	8.7
<i>Average</i>	57.8	50.6
<i>Above Average</i>	36.6	40.7
Parental Education *		
<i>One or Both Parents Have a Degree</i>	38.6	34.0
Parental Encouragement		
Attend University **	70.8	61.0
Attend Trades or Technical School	33.0	27.6

* p > .05

** p < 0.05

A greater proportion of immigrant youth reported receiving parental encouragement to attend university after completing high school than their Canadian-born counterparts (71% compared to 61%). Interestingly, a slightly higher percentage (33% compared to 28%) of immigrant youth also reported similar encouragement to pursue a trades-related education. Hence, this study demonstrates that by strongly encouraging their children to pursue both university and trades PSE, immigrant parents exhibited their drive and desire for their children to succeed in the Canadian labour market.

Both immigrant and Canadian-born youth might choose to pursue a trades-related education because of the high marks required for entrance into most Canadian universities. Given that, students with higher grades are also more likely to attend university (Davies & Guppy, 2006), we expected that grades would help explain the differences between trades PSE attainment and university PSE attainment. Therefore, we hypothesized that those reporting grades of $\geq 80\%$ would be more likely to go on to university. Alternately, those reporting grades of 65-79% would more often pursue trades-specific PSE, perhaps because they may have been encouraged to do so by teachers and school counselors (Gray & Herr, 2006). It is possible that the relationship between grades and PSE attainment would differ between immigrants and the Canadian-born, but we did not propose a specific hypothesis about this possible interaction effect.

Results of Multinomial Logit Analysis

Tables 3, 4, and 5 display multinomial logit models for two types of post-secondary educational attainment outcomes: attainment of a trades-related credential by 2003 and attainment of a bachelor's degree by 2003.

Table 3

Attainment of Trades-related and University Credentials, Multinomial Logit Analysis, Model A

Multinomial Logit Analysis

	Model A			
	Trades-Related Credentials		University Credentials	
	Relative Risk Ratio	Standard Error	Relative Risk Ratio	Standard Error
Immigrant (yes = 1)	2.14**	0.27	1.58	0.26
Gender (Male=1)	1.15	0.16	0.57**	0.14
Family Finances:				
Below Average (ref)				
Average	1.88	0.34	1.07	0.27
Above Average	2.53*	0.35	2.12*	0.27
Parental Education:				
Either one or both parents have a degree	0.95	0.19	3.32**	0.15

Note. Trades-related credentials include technical diploma and/or apprenticeship completion.

* $p < 0.05$

** $p < 0.01$

For both outcomes, Model A (see Table 3) illustrates differences between immigrants and non-immigrants while controlling for gender, family finances, and parental education. Model A indicates the importance of separating trades-related and university PSE in analyses of the educational attainment of immigrant youth, since there is a significant difference between immigrants and non-immigrants with respect to completing a trades-related PSE. The odds of having a trades-related credential in contrast to having neither a bachelor degree nor a trades-related credential are 2.14 times ($p < 0.01$) higher for immigrant youth than Canadian-born youth in Alberta. The odds of having a university degree, when compared to no PSE credential, are also higher (1.58) for immigrant youth compared to Canadian-born youth, but the difference is not significant. Thus, in Alberta immigrant status has an impact on trades-related PSE attainment for young adults, but not on university degree attainment.

Socio-demographic variables also have significant effects on PSE choices made by Alberta immigrant youth and their Canadian-born counterparts. As indicated in Table 3, males are less likely than females to attain a bachelor degree (relative risk ratio of 0.57; $p < 0.01$); a pattern reflected in national differences in university attendance levels of men and women (Turcotte, 2011). However, the effect of gender on obtaining a trades-related PSE is not significant. Young adults who, in high school, reported that their family's income was above average were more likely to have obtained a trades-related PSE by age 25 (odds of 2.53; $p < 0.05$) compared to having no PSE credential. These young people were also more likely to have obtained a university degree (odds of 2.12; $p < 0.05$) by age 25 compared to having neither a degree nor a

Table 4

Attainment of Trades-related and University Credentials, Multinomial Logit Analysis, Model B

Multinomial Logit Analysis

	Model B			
	Trades-Related Credentials		University Credentials	
	Relative Risk Ratio	Standard Error	Relative Risk Ratio	Standard Error
Immigrant (yes = 1)	2.18**	0.27	1.55	0.28
Gender (Male=1)	1.15	0.16	0.62**	0.16
Family Finances:				
Below Average (ref)				
Average	1.90	0.35	1.32	0.30
Above Average	2.56	0.36	2.41**	0.31
Parental Education:				
Either one or both parents have a degree	0.89	0.19	2.32**	0.16
Grades:				
50-64% (ref)				
65-79%	1.28	0.19	6.30**	0.29
≥80%	1.62	0.29	34.81**	0.31

Note. Trades-related credentials include technical diploma and/or apprenticeship completion.

* $p < 0.05$

** $p < 0.01$

trades-related training. In contrast, significant effects of parental education are only seen for obtaining a university degree. Sample members from families where one or both parents had a degree were 3.32 times more likely to have obtained a university degree themselves by age 25.

Table 4 (Model B) displays relative risk ratios once high school grades are added to Model A. In general, the odds ratios for the predictor variables examined in Model A change very little. For example, the odds of immigrant youth compared to Canadian-born youth attaining trades credentials, as compared to neither trades/university credentials, are almost unchanged (2.18 in Model B, compared to 2.14 in Model A). However, there is a sizeable decrease in the relative risk ratios (from 3.32 in Table 3 to 2.32 in Table 4) with respect to parental education's effect on sample members having themselves acquired a university degree. The explanation is likely that young people whose parents were university-educated tend to obtain higher high school grades. In other words, some of the family SES effect on university attainment of children is being shared with the high school grades measure.

As for high school grades themselves, it is no surprise that they play a highly important role in PSE attainment, especially a university level PSE. Table 4 shows that the odds of obtaining a university degree, when compared to no PSE credential, for students reporting grades between 65-79% in Grade 12 are 6.30 ($p < 0.01$) times the odds for those reporting 50-65% grades. The effect of very high grades ($\geq 80\%$) in high school is even more pronounced; the odds ratio for

Table 5

Attainment of Trades-related and University Credentials, Multinomial Logit Analysis, Model C
Multinomial Logit Analysis

	Model C			
	Trades-Related Credentials		University Credentials	
	Relative Risk Ratio	Standard Error	Relative Risk Ratio	Standard Error
Immigrant (yes = 1)	2.32**	0.28	1.26	0.30
Gender (Male=1)	0.98	0.17	0.65*	0.17
Family Finances:				
Below Average (ref)				
Average	2.01	0.37	1.52	0.31
Above Average	2.77*	0.38	2.46**	0.32
Parental Education:				
Either one or both parents have a degree	1.08	0.20	1.65**	0.18
Grades:				
50-64% (ref)				
65-79%	1.42	0.19	5.31**	0.30
$\geq 80\%$	2.20*	0.30	24.53**	0.32
Parental Encouragement:				
No Encouragement (ref)				
Encouraged to attain university credentials	0.70	0.20	3.39**	0.23
Encouraged to attain trades credentials	2.34**	0.20	0.63	0.24

Note. Trades-related credentials include technical diploma and/or apprenticeship completion.

* $p < 0.05$

** $p < 0.01$

this group is 34.81 ($p < 0.01$) times the odds for students in the lowest grade reference category. In contrast, the effect of high school grades on attainment of a trades-related PSE, while also positive, is not significant (see Table 4). Clearly, high grades are much more important for university participation and success than they are for obtaining a trades-related higher education.

Model C (see Table 5) displays the net effects of the various predictor variables once parental encouragement is added to the model. Again, little changes with respect to immigrant status, gender, and self-reported family financial situation. However, with the inclusion of parental encouragement for a university education, the effects of parents' education and high school grades on attainment of a university degree are further reduced, although both remain as significant predictors. This is not surprising, since university-educated parents would be expected to be encouraging their children with high grades in Grade 12 to go to university. Controlling on grades and parental education, the effect of parental encouragement to go to university on attainment of a university degree is statistically significant (odds ratio = 3.39; $p < 0.01$).

Similarly, if parents encouraged their children to obtain a trades-related education, their children were more likely to have done so by age 25 (odds ratio = 2.34; $p < 0.01$). Furthermore, once this variable was included in the analysis, the effect of having grades higher than 80% on obtaining a trades-related credential became statistically significant (odds ratio = 2.20; $p < 0.05$). In combination with the findings about university completion reported in Table 5, this interaction effect leads to three linked conclusions: (1) Grade 12 students with high grades are more likely to complete university, (2) encouragement from their parents makes this more likely, and (3) Grade 12 students with high grades are also more likely to acquire trades-related PSE credentials, but only if their parents encourage them to do so.

Discussion

One of the most notable shifts in Canadian immigration over the past few decades has been the influx of well-educated newcomers. This shift is the result of Canada's immigration policies that have been in place since 1967, specifically, policies that favour more highly educated applicants. Canadian immigration policies have been designed to reflect labour market conditions (e.g., occupational demand) as well as "characteristics that are deemed important for long term success of immigrants (e.g. education)" (Aydemir, 2002, p. 33).

Recently, a greater number of newcomers have settled in regions such as Alberta with prosperous resource-based economies, relying heavily on workers with trades-related education as well as others with university education. However, there is a major gap in the Canadian research literature on post-secondary educational attainment, particularly studies of immigrant youth, none of which have addressed trades-related PSE attainment. Given that immigrant youth continue to outperform their Canadian-born counterparts in the university system, it is important to ask whether they experience a similar level of success in trades-related PSE.

This study shows that, while Alberta immigrant youth are more likely than their native-born counterparts to complete a university degree by age 25, the difference is not statistically significant. This is in contrast to a recent national study (Abada, Hou, & Ram, 2009) showing that children of immigrant parents achieve higher university completion rates than children of Canadian-born parents, partly due to the higher education levels of their parents.

However, while we are unaware of national studies of trades-related PSE attainment of immigrant and native-born youth, our Alberta-based study shows that the former are significantly more likely to obtain a trades-related PSE credential by age 25. This may be due to the relative prominence of the trades in the Alberta labour market, compared to the national labour market. Immigrants with trades training, who might pass along an interest in the trades to their children, may have been attracted to or steered towards Alberta. Furthermore, the prominence of the trades in the provincial labour market might have made them a more attractive option for immigrant youth. The Alberta government has been promoting trades-related education to high school students via the Registered Apprenticeship Program (RAP), which began in the early 1990s to meet the demand for skilled tradespersons (Lehmann, 2005). RAP was offered as a career option for high school students seeking training other than traditional university PSE, and to “bring at least some aspects of the secondary curriculum more in line with industry needs” (Lehmann, 2005, p. 327).

We find, as other research have shown, that young people from more affluent families are more likely to complete university. Somewhat surprisingly, since most research showed a positive correlation between family income and children’s university attendance, we observed the same relationship for trades-related PSE. This may be an Alberta-specific phenomenon, since people working in the trades in this province can often earn incomes on par with or higher than those who are university-educated and working in white-collar managerial and professional occupations.

In contrast, while we find a significant relationship between students’ and their parents’ university education, we do not see evidence that the children of university-educated parents are more likely to obtain trades-related PSE credentials by age 25. Even in Alberta where a trades-related education can lead to a high income, parents with degrees may continue to encourage their children to go to university, perhaps because of the higher prestige associated with this type of education or because they are not really aware of how much a skilled tradesperson can earn in this province.

Again, as we would expect, high grades in Grade 12 are very strong predictors of university completion. Interestingly, we also observe that high grades in Grade 12 are associated with the attainment of trades-related PSE credentials, but only if parents (both immigrant and non-immigrant) encourage their children to pursue trades-related PSE. This might mean that high school teachers and counselors who frequently steer young people into different PSE pathways tend to promote university education (Gray & Herr, 2006). Only when parents encourage their children to contemplate a PSE alternative do we see such choices being made. However, since our study did not ask about advice and encouragement from high school teachers and counselors, this speculation requires further research.

Immigrant families not only view higher education as an investment in their children’s future but also as “an instrument of integration” (Christopoulou & Leeuw, 2008, p. 255). Hence, immigrant parents continue to encourage their children to pursue PSE as a part of successful integration into their host country. In this study, situated in the resource-based economy of Alberta where trades-related PSE can lead to a fulfilling career, immigrant parents not only encouraged their children to attain university credentials, but to also pursue trades-related PSE. This interaction between the nature of the economy, the PSE ambitions of immigrant youth, and the PSE encouragement of their parents, is perhaps the most original of the various findings emerging from this longitudinal study.

Limitations and Future Research

Our findings that regional economic labour demands and intensive parenting practices are important factors are based on student self-reported data, including their views on PSE encouragement. Our conclusions would have been strengthened with access to data collected from parents, but the costs of such a study would have been prohibitive and the logistics extremely difficult.

While our data allowed us to examine the role of intensive parenting, we did not have information on possible language, cultural, or social capital barriers faced by young Alberta immigrants that might have led them to choose a trades-related rather than a university PSE track. Thus, it is possible that there are structural, in addition to individual factors (i.e., parenting) that might account for PSE decisions. Future research could fruitfully explore this possibility.

The longitudinal data set we analyzed did not contain information about how old immigrant youth were when they arrived in Canada. It is possible that age on arrival could influence our findings since those who arrived at an early age might experience an easier transition into the Canadian elementary and high school systems (Boyd, 2000; Cummins, 1981; Gluszynski & Dhawan-Biswal, 2008). In turn, those who arrived at a later age might be less likely to have been encouraged at school and perhaps at home to pursue a university education and directed towards the trades instead. Future research could usefully focus on this *age at arrival* issue.

We have had to speculate about whether PSE transition patterns and processes might be different in a resource-based economy like Alberta. Future comparative research across Canadian provinces or regions could determine more conclusively whether and how the receiving economy shapes immigrant youth PSE transitions, in the same way that country of origin has been shown to shape school-work transition outcomes for second generation immigrants (Boyd & Grieco, 1998).

Because of the small sub-sample sizes, we were unable to disaggregate our *immigrant youth* category in a way that would allow us to compare Asian with African youth, for example. Previous research suggests differences in parenting style across different ethnic groups (Chao, 2001; Chao & Tseng, 2002; Kao, 2004; Pong, Hao, & Gardner, 2005). Consequently, it is important for future research to address different parenting styles and their influence on university and trades-specific PSE choices among immigrant youth. Even larger data sets than that analyzed in this study would be required, of course.

Finally, even though the sample was reweighted to be representative, there may be some attrition and selectivity bias in this longitudinal study. Previous attritions analyses revealed that immigrant youth were less likely to have participated in the 2003 follow-up survey (Krahn, 2004). This might be because some of the most successful immigrant study participants were, by age 25, studying or working in other provinces and countries, and so more difficult to contact. Alternatively, some immigrant youth might have been less successful in their PSE transitions and, hence, less willing to participate in the follow-up (age 25) survey. The latter, however, is less likely given the many studies reporting the high academic achievements of immigrant youth (Anisef et al., 2000; Boyd, 2002; Davies & Guppy, 1998; Krahn & Taylor, 2005).

Conclusion

Despite these limitations, this research makes important and original contributions to the scholarly research on post-secondary educational attainment amongst immigrant and Canadian-born youth, most importantly by comparing trades-related and university PSE attainment. The finding that immigrant youth are not only high achievers in universities but also in trades-related PSE is noteworthy for several reasons. First, it highlights that generalizations about immigrants (e.g., most want their children to go to university) based on national averages need to be examined more closely since there might be significant regional variations reflecting the extent to which immigrants adapt to the economic opportunities available to them. In other words, local or regional economies can have strong moderating effects on patterns and determinants of PSE attainment. Second, this finding adds to the small but growing literature on intensive parenting in immigrant families (Sweet et al., 2008). As both first and second generation immigrants come to comprise an even larger proportion of the Canadian population, further research on these patterns and processes, in different provinces or regions, within different immigrant groups (with respect to ethnicity and country of origin), and across generations would add even more to our understanding of different types of PSE attainment among immigrant youth.

Acknowledgements

The Social Sciences and Humanities Research Council of Canada (Grant no. 410-96-0804) and the Government of Alberta provided funding for this study. The Population Research Laboratory, at the University of Alberta, handled the data collection and processing. Helpful comments and suggestions from two anonymous reviewers are gratefully acknowledged.

References

- Abada, T., Hou, F., & Ram, B. (2009). Ethnic differences in educational attainment among the children of Canadian immigrants. *Canadian Journal of Sociology*, 34, 1-28.
- Anisef, P., Axelrod, P., Baichman-Anisef, E., James, C., & Turriffin, A. (2000). *Opportunity and uncertainty: Life course experiences of the class of '73*. Toronto: University of Toronto Press.
- Aydemir, A. (2002). *Effects of selection criteria and economic opportunities on the characteristics of immigrants*. (Report No. 11F0019MIE-No. 182). Retrieved from Statistics Canada Website: <http://www.statcan.gc.ca/pub/11f0019m/11f0019m2002182-eng.pdf>
- Boyd, M. (2000). Ethnicity and immigrant offspring. In M. Kalbach, & W. Kalbach (Eds.), *Race and ethnicity* (pp.137-154). Toronto: Harcourt Brace.
- Boyd, M. (2002). Educational attainments of immigrant offspring: Success or segmented assimilation? *International Migration Review*, 36(4), 1037-1060. Retrieved from <http://www.jstor.org/stable/4149491>
- Boyd, M., & Grieco, E. (1998). Triumphant transitions: Socioeconomic achievements of the second generation in Canada. *International Migration Review*, 32(4), 857-876. Retrieved from <http://www.jstor.org/stable/i323518>
- Canada Revenue Agency, Government of Canada. (2006, December 6). *Tradesperson's Tool Deduction*. Retrieved from <http://www.cra-arc.gc.ca/whtsnw/tls-eng.html>
- Canada Revenue Agency, Government of Canada. (2007, March 12). *Apprenticeship Job Creation Tax Credit*.

- Chao, R. (2001). Extending research on the consequences of parenting style for Chinese Americans and European Americans. *Child Development*, 72(6), 1832-1843. Retrieved from <http://www.wiley.com.ezproxy.lib.ucalgary.ca/WileyCDA/>
- Chao, R., & Tseng, V. (2002). *Parenting of Asians*. In M. Bornstein (Ed.), *Handbook of parenting* (2nd ed., Vol. 4). Mahwah, NJ: Lawrence Erlbaum Associates.
- Christopoulou, N., & Leeuw, S. D. (2008). Changing childhoods: Migrant children and the confrontation of uncertainty. In C. S. Arnlaug Leira, *Childhood changing contexts* (pp. 239-264). London: Emerald Group Publishing Limited.
- Cross, P., & Bowlby, G. (2006). The Alberta economic juggernaut: The boom on the rose. *Canadian Economic Observer*, 19(9), 3.1-3.12. Retrieved from <http://www5.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=11-010-X&chprog=1>=eng
- Cummins, J. (1981). Age on arrival and immigrant second language learning in Canada: A reassessment. *Applied Linguistics*, 2(2), 132-150. doi:10.1093/applin/II.2.117
- Davies, S., & Guppy, N. (1998). *Race and Canadian education*. In V. E. Satzewich, *Racism and social inequality in Canada: Concepts, controversies and strategies of resistance* (pp. 131-155). Toronto: Thompson Educational Publishing.
- Davies, S., & Guppy, N. (2006). *The schooled society: An introduction to the sociology of education*. Don Mills, ON: Oxford University Press.
- Employment and Social Development of Canada, Government of Canada. (2007, January 26). *Apprenticeship Incentive Grant*.
- Frideres, J. (2006). Cities and immigrant integration: The future of second and third-tier centers. *Our Diverse Cities*, 2, 3-8. Retrieved from http://www.metropolis.net/pdfs/ODC_2_Frideres_e.pdf
- Glick, J. E., & White, M. J. (2004). Post-secondary school participation of immigrant and native youth: The role of familial resources and educational expectations. *Social Science Research*, 33(2), 272-299. Retrieved from <http://www.journals.elsevier.com/social-science-research/>
- Gluszynski, T., & Dhawan-Biswal, U. (2008). *Reading skills of young immigrants in Canada: The effects of duration of residency, home language exposure and schools*. Retrieved from Learning Policy Directorate, Strategic Policy and Research, Human Resources and Social Development Canada website: <http://www.yorku.ca/pathways/literature/Literacy/gluszynski%2008.pdf>
- Gray, K. C., & Herr, E. L. (2006). *Other ways to win: Creating alternatives for high school graduates*. Thousand Oaks, CA: Corwin Press.
- Kao, G. (2004). Parental influences on the educational outcomes of immigrant youth. *International Migration Review*, 38(2), 427-449. Retrieved from <http://www.jstor.org/stable/127645381>
- Kao, G., & Tienda, M. (1995). Optimism and achievement: The educational performance of immigrant youth. *Social Science Quarterly*, 76(1), 1-19. Retrieved from <http://www.blackwellpublishing.com/journal.asp?ref=0038-4941&site=1>
- Krahn, H. (2004, June). *Access to post-secondary education in Alberta*. Paper presented at the 2004 Annual Meeting of the Canadian Sociology and Anthropology Association, Winnipeg, MB.
- Krahn, H., & Hudson, J. (2006). *Pathways of Alberta youth through the post-secondary system into the labour market*. Retrieved from Canadian Policy Research Networks website: http://www.cprn.org/documents/46032_EN.pdf
- Krahn, H., & Taylor, A. (2005). Resilient teenagers: Explaining the high educational aspirations of visible-minority youth in Canada. *Journal of International Migration and Integration*, 6(3,4), 405-434. Retrieved from <http://www.springer.com/social+sciences/population+studies/journal/12134>
- Lehmann, W. (2005). Choosing to labour: Structure and agency in school-work transitions. *The Canadian Journal of Sociology*, 30(3), 325-250. Retrieved from <http://ejournals.library.ualberta.ca/index.php/CJS/c>
- Lehmann, W., & Taylor, A. (2003). Giving employers what they want? New vocationalism in Alberta. *Journal of Education and Work*, 16(1), 45-67. doi:10.1080/1363908022000032885

- Looker, E., & Thiessen, V. (2004). *Aspirations of Canadian youth for higher Education: Final report*. Retrieved from Strategic Policy and Planning website: <http://www.pisa.gc.ca/eng/pdf/SP-600-05-04E.pdf>
- Louie, V. (2001). Parents' aspirations and investment: The role of social class in the educational experiences of 1.5- and second-generation Chinese Americans. *Harvard Educational Review*, 71(3), 438-474. Retrieved from <http://www.hepg.org/main/her/Index.html>
- Pong, S. L., Hao, L., & Gardner, E. (2005). The roles of parenting styles and social capital in school performance of immigrant Asian and Hispanic adolescents. *Social Science Quarterly*, 86(4), 928-950.
- Pyper, W. (2008). Skilled trades employment. *Perspectives on Labour and Income*, 5-14. Retrieved from <http://www.statcan.gc.ca/pub/75-001-x/75-001-x2008110-eng.pdf>
- Statistics Canada. (2008). *Canada year book: Ethnic diversity and immigration*. Retrieved from Statistics Canada website: <http://www.statcan.gc.ca/pub/11-402-x/2008000/pdf/ethnic-ethnique-eng.pdf>
- Statistics Canada. (2013). *Annual average unemployment rate, Canada and provinces, 1976-2012*. Retrieved from Statistics Canada website: <http://www.stats.gov.nl.ca/statistics/Labour/PDF/UnempRate.pdf>
- Sweet, R. (2005). *Educational plans and parenting practices in immigrant and non-immigrant families*. Toronto: International Metropolis Conference. Retrieved from <http://www6.carleton.ca/metropolis/>
- Sweet, R., Anisef, P., & Walters, D. (2008). *Immigrant parents' investments in their children's post-secondary education*. Retrieved from The Canadian Millennium Scholarship Foundation website: http://inpathways.net/cmsf/081117_Immigrant_Parents.pdf
- Sweet, R., Mandell, N., Anisef, P., & Adamuti-Trache, M. (2007). *Managing the home learning environment: Parents, adolescents and the "homework problem"*. 1-52. Retrieved from Canadian Council on Learning website: <http://www.ccl-cca.ca/pdfs/OtherReports/200710SweetFinalReport.pdf>
- Turcotte, M. (2011). *Women in Canada: A gender based statistical report* (Report No. 89-503-X). Retrieved from Statistics Canada website: <http://www.statcan.gc.ca/pub/89-503-x/2010001/article/11542-eng.pdf>

Notes

- ¹ Skilled trades include, for example, individuals employed as plumbers, pipefitters and gas fitters, carpenters and cabinetmakers, masonry and plastering trades, other construction trades, stationary engineers, power station operators, electrical trades and telecommunications occupations, machinists, metal forming, shaping and erecting occupations, mechanics, crane operators, drillers and blasters.
- ² Researchers frequently categorize cities on the basis of size and economic/industrial complexity. In Canada, Vancouver, Toronto, and Montreal are considered first-tier cities, in contrast to second-tier cities like Calgary, Edmonton, Winnipeg, Hamilton, and Ottawa-Gatineau. Third-tier cities include Victoria, Saskatoon, Regina, Quebec City, and Halifax (Frideres, 2006; Krahn et al., 2005).
- ³ Apprenticeships are defined as post-secondary education programs that combine work experience, on-the-job, and technical training. Technical schools include post-secondary institutions that provide skill-oriented education to high school graduates which result in diplomas granted upon completion of training. Universities are post-secondary institutions that provide a research-focused education and offer degrees at undergraduate and graduate levels. First degrees typically require four years of PSE education, while diplomas typically require two years.

- 4 <http://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-310-x/98-310-x2011001-eng.cfm>
- 5 One in three people aged 25 to 54 who immigrated to Canada from 2001 to 2006 had at least a bachelor's degree, compared with one in six Canadian-born people in the same age group. One in five recent immigrants had a graduate degree, compared with one in 20 Canadians (Statistics Canada, 2008).

Parvinder Hira-Friesen is a doctoral candidate at the University of Calgary in the Department of Sociology. She has a BSc in Physics/Math and MA in Sociology from the University of Alberta. Her research includes social stratification, race and ethnicity, immigration and labour using advanced quantitative methods. She is currently examining Canadian immigrants and their participation in precarious work in the Canadian labour market using the *Canadian Labour Force Survey*.

Michael Haan is Associate Professor and Canada Research Chair in Population and Social Policy at the University of New Brunswick. He is also an honorary research associate at the Prentice Institute for Global Population and Labour at the University of Lethbridge and research affiliate at the Centre for Population Dynamics at McGill University. His research interests include immigration, internal migration, homeownership, and the Canadian Labour Market.

Harvey Krahn is Professor and Chair of Sociology at the University of Alberta. His teaching and research interests are in social inequality, sociology of work and education, immigration, environmental sociology, and quantitative research methods. He designed and directed the 1996–2003 Alberta School-Work Transitions Study.