

Settling for More

Matching Newcomers to
Alberta's Tech Sector



Research by



The Information and
Communications Technology Council

Canada 

Alberta 

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Preface

The Information and Communications Technology Council (ICTC) is a not-for-profit, national centre of expertise for strengthening Canada's digital advantage in a global economy. Through trusted research, practical policy advice, and creative capacity-building programs, ICTC fosters globally competitive Canadian industries enabled by innovative and diverse digital talent. In partnership with an expansive network of industry leaders, academic partners, and policy makers from across Canada, ICTC has empowered a robust and inclusive digital economy for over 25 years.

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The opinions and interpretations in this publication are those of the authors and do not necessarily reflect those of the Government of Alberta.

Abstract

Alberta's digital economy is growing and thus faces potential labour shortages in the near future. At the same time, internationally educated newcomers to Alberta often face challenges finding employment for which they are qualified. This report investigates how best to enhance newcomer participation in Alberta's digital economy. Its findings draw upon a literature review, interviews with Alberta employers, focus groups with newcomers, and data on the skills newcomers bring to Canada. The report first covers labour demand among Alberta's digital economy employers, and compares this to the supply of available talent among newcomers. Key findings are that soft skills are in high demand and that newcomers are often overeducated and underemployed. The report then covers six challenges to newcomer participation in Alberta's digital economy that are unrelated to skills mismatches and provides potential solutions to each.

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Glossary of Key Terms

This glossary presents an overview of terminology used but not fully expanded upon in the text.

Digital Economy — An economy based on digital technologies that drive innovation, opportunities, and economic growth. ICTC's definition of digital economy includes all information and communication technology occupation classifications (NAICs and NOCs) identified in Appendix I.

ICT — An acronym for information and communications technology, which is composed of 30 NOCs or 19 NAICs. The ICT sector includes numerous subsectors.

Immigrant — A person who moves to another country to reside there permanently.

Internationally Educated Professionals (IEP) — post-secondary educated professionals who have obtained their education credentials outside of Canada.

Labour Force — All people who are able to work, including those who are unemployed and seeking work.

NAICs — The North American Industry Classification Standard is utilized by Canada, Mexico, and the United States. It divides all economic activity into 20 sectors and is used to collect data, manage information, and analyze market trends.

Newcomer(s) — Sometimes also referred to as "recent immigrants," a person or a group of people who have recently arrived in another country for residency. In this report, newcomers are defined as having arrived in Canada within the last five years.

NOCs — The National Occupational Classification (NOC) is a four-digit coding system classifying occupations by categories, considered a standardized language for describing work in Canada. It helps collect data, manage information, and analyze market trends.

Permanent Resident (PR) — In Canada, a status assigned to people by the government, indicating that they are a citizen of another country and are permitted to reside in Canada, but not a Canadian citizen.¹

Provincial Nominee Program (PNP) — "An economic immigration program that nominates people for permanent residence in a Canadian province. Nominees must have skills to fill job shortages or be planning to buy or start a business in the province."²

STEM — Acronym for the educational fields of science, technology, engineering, and math.

¹ "Glossary", Immigration and Citizenship Canada, <https://www.canada.ca/en/services/immigration-citizenship/helpcentre/glossary.html#p>.

² "Alberta Immigration Nominee Program (AINP)", Government of Alberta, <https://www.alberta.ca/ainp.aspx>.

Executive Summary

While Alberta's overall economy has faced some hurdles, its digital economy is rapidly growing and offers high-quality employment opportunities. Even during the COVID-19 pandemic, Alberta's digital economy remained highly resilient, seeing continued demand for talent. From February 2020 to August 2021, employment in Alberta's digital economy grew by 9.4%, compared to a decline of 0.7% in the overall economy.³ Moreover, this trend is expected to not just continue but accelerate. Recent ICTC research findings anticipate that employment in Alberta's digital economy will reach 203,000 by 2025.⁴

Yet, despite this opportunity, a major barrier exists: a lack of skilled talent available to meet employment demand. Skilled talent can be found among numerous supply groups, including new graduates, workforce transitioners, and newcomers. Each year, Alberta greets large numbers of internationally educated professionals (IEPs) who have skills and experience suited to the digital economy. Unfortunately, this talent is often underutilized, adversely impacting both Alberta's digital economy and the newcomers themselves. **This report investigates how best to enhance newcomer participation in Alberta's digital economy and leverage their skills and experience to support future growth and shared prosperity.**

To better understand labour supply and demand, this study conducted focus groups and interviews to engage with newcomers to Alberta who have foreign work experience in digital industries. The research uncovered which skills newcomers already possess compared to critical skills in top in-demand digital occupations in the province. Jobs like software developers, data scientists, dev-ops engineers, UX designers and others were considered in this analysis. While technical (or "hard skills") gaps were found in some cases, the most significant gaps discovered are in "soft skills" such as verbal and written communication, teamwork, and understanding of Canadian business culture.

While the solution may be partly about ensuring that the supply of newcomer talent suits labour market demand—and that newcomers need to improve their workplace skills—this misses other critical challenges that newcomers and employers report. The process of matching job-seeking newcomers and employers is critical as well. Many newcomers participating in this study noted barriers of missing information about the Canadian job market, biases, and challenges associated with hiring and being hired.

³ Seasonally-adjusted. Source: ICTC, Statistics Canada

⁴ Ivus, Maryna, and Akshay Kotak, "Onwards and Upwards - Digital Talent Outlook 2025," Information and Communications Technology Council, August 2021, <https://www.ictc-ctic.ca/wp-content/uploads/2021/08/digital-talent-outlook-for-2025.pdf>

The following are the core barriers to employment in the digital economy that newcomers to Alberta face:

The prioritization of Canadian work experience — Research shows that sometimes, employers can be unwilling to take on the risk of hiring an individual who has never experienced a Canadian work environment.⁵ Paradoxically, newcomers, who are often seeking their first role in Canada, report that their lack of Canadian work experience is a major barrier to finding employment.

Difficulty making connections and searching for jobs — Newcomers often lack social and community connections, as well as professional connections in the local market.⁶ Further, finding job postings and role openings can be difficult in a new country. Combined, these barriers complicate the early stages of job-seeking.

The application and interview process can be difficult for newcomers — Job application and interview procedures vary from country to country, and newcomers and employers in this study said that many newcomers lack a robust understanding of the Canadian hiring process. This can mean that qualified newcomers who would likely be good employees may not get hired.

Norms surrounding salary negotiations and job offers — With pressure to earn an income and build Canadian experience, newcomers sometimes feel uneasy negotiating or rejecting a first offer. Even after accepting job offers, some newcomers were unsure if their salaries were competitive.

Conflation of soft skills and “culture fit” — By their own admission, newcomers do sometimes lack soft skills needed to succeed in the Canadian workplace. Yet, the line between what constitutes a soft skill and what constitutes an in-depth understanding of Canadian workplace culture is sometimes blurred.

Lack of soft skill upskilling programs or courses — Upskilling, or the leveraging of short-duration training to fill skill needs, is gaining traction in Canada and around the world. Although numerous short-duration training courses are available to fill gaps in technical skills (e.g., programming languages, data science, etc.), fewer options exist that address soft skills. Newcomers’ prospects could be greatly strengthened by way of upskilling opportunities related to soft skills, Canadian business culture, and career development.

Amid concerns about labour shortages across the country and alongside federal efforts to increase immigration, Alberta’s digital economy has an unprecedented opportunity to empower a highly skilled workforce by employing talented, educated newcomers. Doing so will improve the fortunes of immigrants to Alberta, and it will also help companies grow, scale, and innovate. Understanding skill matches and gaps, effectively analyzing and addressing recruitment barriers, and streamlining the hiring process are all methods that can help businesses access the talent needed to succeed. As employment demand in Alberta’s digital economy continues to outpace other industries, capitalizing on available newcomer talent is a key strategy and cornerstone to advancing Alberta’s economic and cultural diversity.

⁵ Sakamoto, Izumi, et al., “An overview of discourses of skilled immigrants and “Canadian experience”: An English-language print media analysis,” CEROS – The Ontario Metropolis Centre, March 2013, <https://tspace.library.utoronto.ca/handle/1807/78816>

⁶ Feenan, Katherine, and Shamira Madhany, “Immigration and the Success of Canada’s Post-Pandemic Economy,” Public Policy Form, May 2021, <https://www.ryerson.ca/diversity/reports/ImmigrationAndCanadasPostpandemicEconomy.pdf>

Introduction

The increasing presence of digital technology is impacting sectors and provinces across the country, and Alberta is no exception. The ICTC study *Digital Talent Outlook for 2025* found that total employment in core digital economy roles in the province will likely grow to 203,000 positions by 2025.⁷ ICTC's *A Digital Future for Alberta* also identified top in-demand digital roles as software developers, data scientists, UX/UI designers, full stack developers, and backend developers.⁸ As demand for digital talent increases, labour shortages will become more urgent. At the same time, however, Alberta is now home to thousands of new immigrants, many of whom are underemployed and, in some cases, unemployed. Many of these internationally educated professionals also arrive with previous experience and/or education in the digital economy from their home countries.⁹ Yet the simple solution to the province's digital economy labour demand and supply imbalance—which is that new and skilled immigrants fill vacant digital economy roles—is not as straightforward as it may seem.

This report analyzes primary data on newcomers' skills and training,¹⁰ alongside available secondary data to compare skills supply (of newcomers) with demand (from employers) for top in-demand occupations in Alberta's digital economy. In so doing, this research highlights both skill matches and gaps. Three focus groups made up of newcomers to Alberta provide an in-depth discussion of newcomer experiences throughout the process of seeking work in the digital economy. Ten Key Informant Interviews (KIIs) with Albertan digital economy employers provide additional information on demand-side needs and barriers in the hiring process. A review of secondary data and existing literature on immigrant employment in Canada provides additional context and background to shape findings.

Section one provides background context about Alberta's economy, including its labour market, its digital economy, and in-demand jobs in the province. It also outlines the skills and educational requirements in Alberta's digital economy, and describes what employers seek when considering newcomer employees. Section two provides an overview of immigration to Alberta and summarizes the skills and backgrounds of newcomers (with digital economy experience and/or education) arriving to Alberta. Section three summarizes six barriers to newcomer participation in Alberta's digital economy and responds to each barrier with possible solutions.

⁷ Ivus, Maryna, and Akshay Kotak, "Onwards and Upwards - Digital Talent Outlook 2025."

⁸ Cutean, Alexandra, and Ryan McLaughlin, "A Digital Future for Alberta: An Analysis of Digital Occupations in Alberta's High-Growth Sectors," Information and Communications Technology Council, 2019, https://www.ictc-ctic.ca/wp-content/uploads/2019/11/ICTC_alberta-digital-future-final-11.12.19.pdf

⁹ Alberta received 240,218 immigrants between 2011 and 2016, 163,348 (68%) of whom were economic migrants.

¹⁰ From participants in ICTCs GO Talent immigration program.



Section I

High Demand for Skilled Talent in Alberta's Digital Economy



The Ebb and Flow of Alberta's Resource Sector: An Opportunity for Digital Diversification

Alberta's economy has been tied strongly to the oil and gas sector for many years, growing by 57% from 1990–2003 (compared to 43% for all of Canada).¹¹ However, this sector has also proven susceptible to economic busts. While many people have been able to navigate these cycles, research suggests that in Canada, recessions disproportionately harm economic outcomes of immigrants and especially newcomers.¹²

In 2008, oil prices lost nearly half their value during the global financial crisis,¹³ plunging Alberta into an economic downturn. In 2015, the Alberta economy again fell into recession and shed 19,600 jobs following the oil price collapse of 2014,¹⁴ when unemployment rates in Alberta exceeded those nationwide. In response, many oil and gas companies scaled back or halted expansion projects, while others sold their assets and reduced their workforce by 5% to 25%.¹⁵ The downturn coincided with growing pressure to reach the Paris Agreement's goals to limit green house gas emissions¹⁶ and pipeline uncertainty.¹⁷ In many ways, it was a repeat of a familiar story when the COVID-19 pandemic struck (and also resulted in falling oil prices) in 2020. By some estimates, Alberta's economy was the hardest hit Canadian province due to the pandemic.¹⁸

¹¹ Ménard, Marinka, "Canada, a Big Energy Consumer: A Regional Perspective," Statistics Canada, <https://www150.statcan.gc.ca/n1/pub/11-621-m/11-621-m2005023-eng.htm#ftnt35>

¹² Kelly, Philip, Stella Park, and Laura Lepper, "Economic Recession and Immigrant Labour Market Outcomes in Canada, 2006-2011", Toronto Immigrant Employment Data Initiative, July 2011, <https://www.yorku.ca/tiedi/doc/AnalyticalReport22.pdf>

¹³ "Oil Prices," Alberta Government, 2021, <https://economicdashboard.alberta.ca/OilPrice>

¹⁴ "Alberta lost the most jobs in 2015 since 1980s recession: Statistics Canada," The Canadian Press, January 26, 2016, <https://business.financialpost.com/investing/outlook/alberta-lost-the-most-jobs-in-2015-since-1980s-recession-statistics-canada>

¹⁵ Cake, Susan, et al., "Boom, Bust, and Consolidation: Corporate Restructuring in the Alberta Oil Sands," Parkland Institute, November 2018, https://www.parklandinstitute.ca/boom_bust_and_consolidation

¹⁶ Cake, Susan, et al., "Boom, Bust, and Consolidation: Corporate Restructuring in the Alberta Oil Sands."

¹⁷ "Reimagining Canada's energy policy: Pipelines vital to national energy strategy as global landscape shifts," PricewaterhouseCoopers, <https://www.pwc.com/ca/en/industries/energy/energy-visions-2019/reimagining-canadian-energy-policy.html>

¹⁸ Vernon, Tom, "Alberta's economy hardest hit of all Canadian provinces in 2020 due to COVID-19 pandemic," Global News, May 4, 2021, <https://globalnews.ca/news/7834442/alberta-economy-pandemic/>.

Fortunately, Alberta's digital economy typically fared well through these events and continued to provide a relatively stable source of jobs.¹⁹ Private equity firms, in particular, were interested in Alberta's tech sector and invested heavily when oil and gas activity was low. These investments helped to lay the foundation for the digital sector that we see today in Alberta. The province offers an innovation grant to support research and development in the tech sectors, signalling greater appetite for diversification as the province emerges from the COVID-19 pandemic. The sector has seen significant growth and enthusiasm as of late, led by "unicorn" companies like Benevity Inc. and NeoFinancial, both having raised substantial funds from international investors.²⁰ As Alberta rebounds from the pandemic, its GDP is expected to grow by 4.3% by 2022,²¹ largely due to the growth of clean energy, agribusiness, and the digital economy.²² Comprising over 3,000 companies,²³ Alberta's digital economy is proving to be both resilient and fast-growing.

According to recent research by the Alberta Enterprise Corporation and PricewaterhouseCoopers (PwC), over half of Alberta tech companies are in the scaling stage of their development,²⁴ typically the point at which companies focus on hiring new staff and expand their markets and user base. This focus on scaling presents an opportune moment for the Alberta economy, but it can be hamstrung by labour shortages. Accentuating this point, a recent survey completed by Digital Alberta found that 42% of tech companies identified finding skilled personnel as the biggest challenge for their industry.²⁵ Two years prior, ICTC found that just over one-third of digital economy employers in the province identified lack of digitally skilled talent as a key barrier to their business growth,²⁶ while many cited a particular need for mid-level and senior-level talent.²⁷ In other words, it is possible that the pandemic, which has left the digital economy largely unscathed, has accentuated previously existing digital talent shortages. If Alberta's digital economy is to continue to grow, it will require more digitally skilled talent. The following sections detail these talent needs.

Backgrounds and Roles Employers Seek

ICTC's *A Digital Future for Alberta* identified top-in-demand digital roles across the economy (see figure 1). Interviewees for this study confirmed similar findings, highlighting their need for roles that largely fit one of two categories: software developers (including full stack developers and software engineers) and data scientists. Other roles highlighted by interviewees included more customer or sales-oriented work, such as technical sales, IT support, customer support, and BI (business intelligence) professionals.

¹⁹ Cutean, Alexandra and Ryan McLaughlin, "Alberta Digital Economy Employment: Course Correction in Uncertain Times," Information and Communications Technology Council, May 4, 2020, <https://www.ictc-ctic.ca/alberta-digital-economy-employment-course-correction-uncertain-times/>

²⁰ Stephenson, Amanda, "Alberta now home to 3,000 tech companies; new report shows an industry hitting its stride," *Calgary Herald*, April 28, 2021, <https://calgaryherald.com/business/local-business/alberta-now-home-to-3000-tech-companies-new-report-shows-an-industry-hitting-its-stride>.

²¹ "Budget 2021 Economic outlook", Government of Alberta, 2021, <https://www.alberta.ca/economic-outlook.aspx>

²² Wright, Virginia, "Alberta's economic outlook a 'mix of sun and cloud': ATB report," *CTV Calgary*, June 10, 2021, <https://calgary.ctvnews.ca/alberta-s-economic-outlook-a-mix-of-sun-and-cloud-atb-report-1.5464574>.

²³ Stephenson, Amanda, "Alberta now home to 3,000 tech companies; new report shows an industry hitting its stride."

²⁴ "2021 Alberta Technology Deal Flow Study," Alberta Enterprise Corporation and PricewaterhouseCoopers, 2021, <https://www.alberta-enterprise.ca/wp-content/uploads/2021/04/AEC-Deal-Flow-Report-2021-April-21.pdf>

²⁵ Hampel, Meagan, "Member Survey Results," Digital Alberta, <https://digitalalberta.com/digital-alberta-member-survey-results/>.

²⁶ Cutean, Alexandra, and Ryan McLaughlin, "A Digital Future for Alberta: An Analysis of Digital Occupations in Alberta's High-Growth Sectors."

²⁷ Cutean, Alexandra, and Ryan McLaughlin, "A Digital Future for Alberta: An Analysis of Digital Occupations in Alberta's High-Growth Sectors."

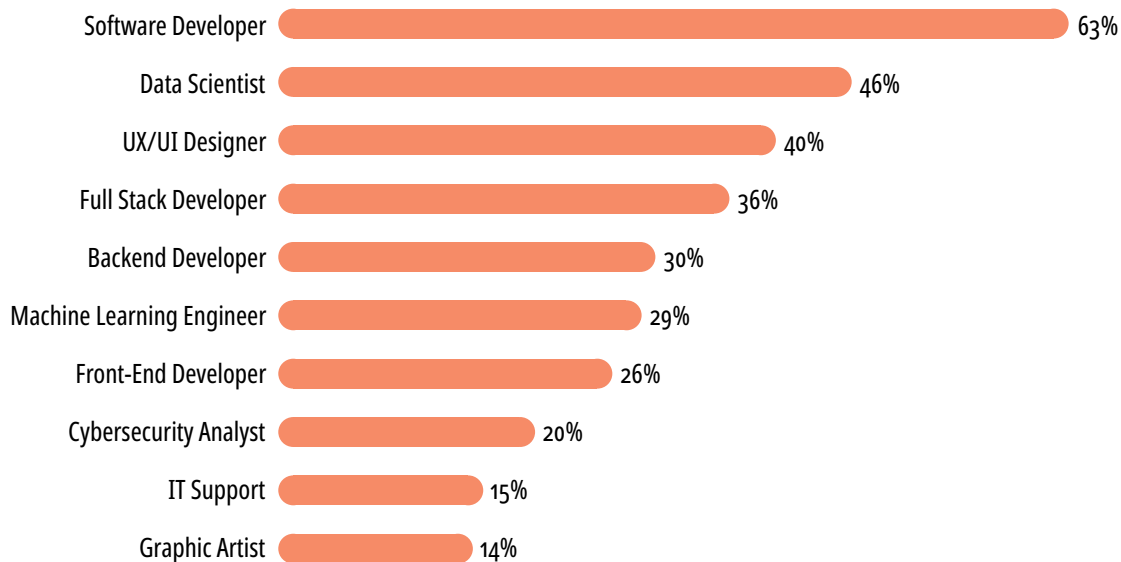


Figure 1. Top 10 most in-demand digital jobs in Alberta (% of ICT employers ranking these roles as “in-demand”). Source: ICTC, 2019

Employers that ICTC spoke with had varying needs of employee experience, either in terms of backgrounds in particular roles or industries, or knowledge of specific domains. For example, domain expertise needs highlighted by interviewees ranged from oil and gas, to marketing, to robotics, to finance. Instead, interviewees wanted employees with well-rounded experience, including competence with full stack web development, understanding of entire products and their purposes (rather than a single element in their production) and the ability to interpret and relay results.

The sort of educational backgrounds that employers desire in new hires are relatively consistent. While some interviewees said that they would hire individuals with no formal education, they added that most hires have at minimum a bachelor’s degree in computer science or engineering. Despite the demand for experienced, well-rounded employees, some employers also expressed willingness to hire individuals straight out of university (although this was never stated with explicit reference to newcomers). The value of a newcomers’ educational background depended on the employer’s perception and the country in which newcomers obtained their education. Inevitably differences in educational quality between countries can lead employers to stereotype prospective hires, resulting in discriminatory hiring. Some foreign education may be found lacking; however, some can exceed expectations.

“Newcomers from certain countries study things in high school that Canadians learn in university.”

Noel Simpson, Co-Founder, EHS Analytics

Mapping Key Technical Skills in Alberta's Digital Economy

Alberta's tech employers operate across a range of industries and offer a variety of products and services. As such, talent requirements vary from business to business. When asked explicitly about technical skills sought in newcomers, many interviewees covered a range of expected technical skills, including cloud computing, machine learning/AI, web programming, and automation. Multiple interviewees also noted outward-facing skills such as technical sales ability or the ability to explain complex data. Specific programs and coding languages cited include SQL, Power BI, C#, Python, Unix, Linux, C++, JavaScript. In *A Digital Future for Alberta*, the following top digital skills are desired by employers:

General Digital Skills	Top 10	Specific Digital Skills
Data Analytics	1	JavaScript
Machine Learning	2	Python
Cloud Computing	3	SQL
Database Management	4	Node.js
Cybersecurity	5	C#
Graphic Design	6	Java
Build Automation	7	C++
Blockchain	8	Ruby on Rails
AR/VR	9	HTML5
Natural Language Processing	10	PHP

Figure 2. Alberta employers' perception of top in-demand digital skills. Source: ICTC, 2019

ICTC compared top digital skills desired by employers (figure 2) and possessed by newcomers²⁸ to paint a picture of mismatched technical skills (figure 3). For the most part, employers should be able to find newcomers with the skills they desire: SQL, HTML, Python, and JavaScript are common among newcomers. A few more notable discrepancies between employer needs and newcomer skillsets exist, however, with Ruby on Rails, Node.js, C++, and C# in high demand, yet not especially common among newcomers. Similarly, knowledge of Linux/Unix is the most widely held skill among newcomers, yet it is not even in the top-10 desired skills among employers.

²⁸ Skills possessed by newcomers were identified using data from participants in ICTC's GO Talent program. Section 2 provides further detail regarding technical skills of newcomers. GO Talent participants are internationally educated professionals. Data used in this report is from a sample of GO Talent participants looking for work across the country, not solely those looking for work in Alberta. This means that they are not perfectly representative of Alberta-based newcomers.

Desired Employer Digital Skills	Rank	Newcomer Digital Skills
JavaScript	1	Linux/UX
Python	2	HTML
SQL	3	SQL
Node.js	4	JavaScript
C#	5	Java
Java	6	Python
C++	7	CSS
Ruby on Rails	8	REST
HTML	9	Oracle
PHP	10	AWS
	11	C#
	12	PHP
	13	C++
	14	C
	15	ASP.NET
	16	Node.js
	17	SAP
	18	CRM
	19	VBA Coding
	20	Matlab
	21	R
	22	VBA Debugging
	23	iOS
	24	SAS
	25	CAD
	26	Ruby on Rails
	27	Wekka

Figure 3. Top skills in Alberta's digital economy: supply and demand

Soft Skills in High Demand

Employers were quick to focus on the importance of soft skills.²⁹ In fact, when prompted to discuss technical skills, interviewees initially focused their responses on newcomers' soft skills. As one interviewee put it:

"I'd say soft skills account for 60–70% of my hiring decision."

Anonymous employer

Interviewees described numerous soft skills as being important, including "subtleties of language," patience, flexibility, openness, collaboration skills, critical thinking, independence, and understanding of business context. Interviewees also highlighted the sorts of profiles they seek when hiring, often with heavy emphasis on soft skills:

"[New hires] need the ability to respectfully challenge authority—critical thinking and independence are really important. We need people to try things without waiting for permission."

Employer

"We need somebody who's going to work with a vague requirement that a customer gave us and figure out what it means, how to implement it and how to make sure it works properly in the software."

Employer

"Being able to work within a team, willing to help others, able to communicate confidently, and have empathy for teammates and customers... these qualities don't always come with technical people."

Roger Milley, Founder & CEO, Fuzeium Data Analytics

"[Candidates] who stood out already demonstrated a willingness to influence others, demonstrate their work. For example, one fellow had posted on LinkedIn a number of his own projects. This shows courage and non-formal leadership. Those who are compelled to help others. Put themselves out there. Be balanced in their perspective. Come across as respectful."

Roger Milley, Founder & CEO, Fuzeium Data Analytics

²⁹ There is a growing debate regarding the use of the term "soft skills" as opposed to terms such as "people skills" or essential skills. Soft skills are often unmeasurable and difficult to define. Soft skills usually encompass communication, leadership, problem solving and organizational skills. For more on the soft skills debate see: <https://www.procurious.com/procurement-news/stop-calling-soft-skills>

Employer stated preferences sometimes differ from the skills they actually hire for. With this in mind, the relationship between salary growth and specific skills can reveal employer preferences and the skills they value. Figure 4 shows the relationship between (primarily) soft skills and salary growth. The top identified skills (such as operations analysis, systems analysis, and complex problem solving) are largely related to more individual, task-based work—the sort of work regularly performed by programmers and developers. More socially oriented skills (such as active listening, negotiation, and social perceptiveness) are further down the list, while skills related to manual work (such as finger dexterity and stamina) are at the bottom.

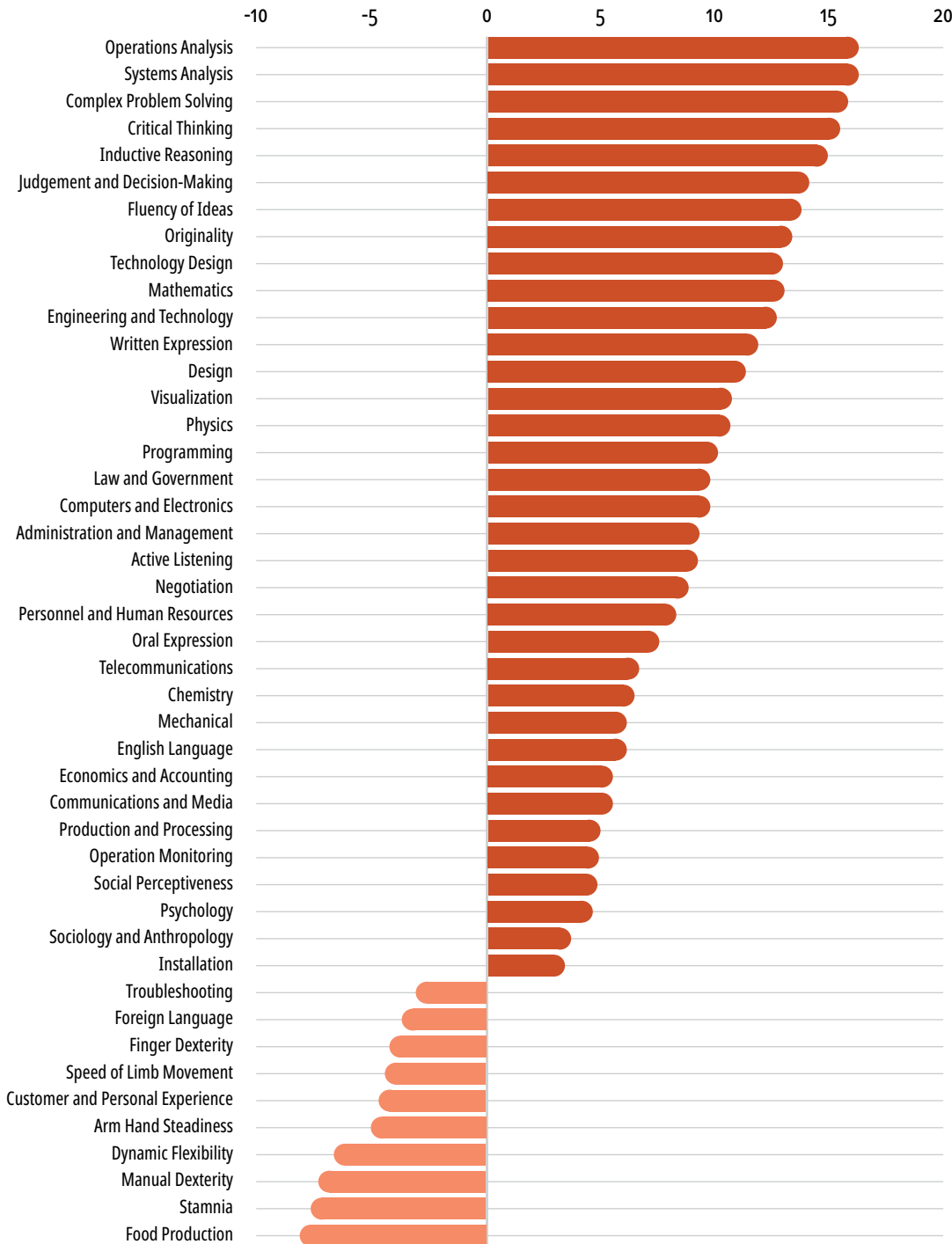


Figure 4. Skills most frequently associated with salary growth (Alberta, 2009–2018). Average % change in median annual salary based on an increase of one standard deviation in skill importance

While employers suggested that many newcomers were missing the requisite soft skills, the primary issue appears not to be about finding qualified newcomers. AJ Tibando and Arvind Gupta note that “the talent challenge faced by ICT firms is less a problem of an underlying skills gap in the workforce and *more* a problem of skill underutilization.”³⁰ The authors warn that assumptions about skills gaps and talent shortages can cause long-term issues in immigration policies.³¹

While employers are aware of the difficulty people face in transitioning to Canada, it is important to make a distinction between skills gaps and employment barriers, and acknowledge that newcomers find Canada’s hiring process challenging for multiple reasons.



³⁰ Tibando, AJ and Arvind Gupta, “Emerging Stronger: Addressing the Skills Under-Utilization Challenge for the Future of Work in Canada,” *Public Policy Forum*, June 12, 2020, <https://ppforum.ca/publications/emerging-stronger-addressing-the-skills-under-utilization-challenge-for-the-future-of-work-in-canada/> Emphasis added.

³¹ Tibando, AJ and Arvind Gupta, “Emerging Stronger: Addressing the Skills Under-Utilization Challenge for the Future of Work in Canada.”

Section II

Talent—Cornerstone of Alberta’s Digital Future



Alberta’s Immigration Trends: Recent History

Alberta is home to about 845,000 immigrants, meaning that about one in five Albertans is an immigrant.³² About a quarter (or 208,000) are classified as “recent immigrants,” having arrived in the last five years.³³ Immigration to Alberta grew steadily between the early 2000’s and 2015.³⁴ Alberta experienced a surge of immigrants in 2016, outpacing BC as a top destination for newcomers. Experts attribute the surge in part to the Provincial Nominee Program (PNP),³⁵ which provides provinces more authority when selecting specific skills and talents among the economic immigrants entering Canada.³⁶ Despite the downturn of oil prices, Alberta welcomed immigrants who brought skills, creativity, entrepreneurial spirit, and energy required to “weather the buffets of the up-and-down resource market.”³⁷ Since 2016, immigration to Alberta has been relatively steady at about 40,000 new immigrants per year until tapering off again during 2020 and especially 2021—a reduction due to the COVID-19 pandemic (see figure 5).^{38 39}

Alberta Immigration Trends 2011–2021

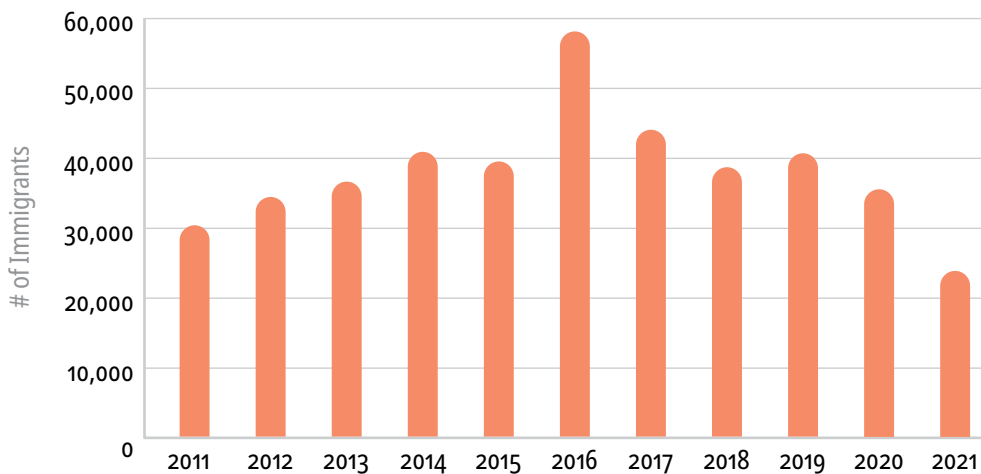


Figure 5. Alberta immigration trends (2011–2021). Source: Statistics Canada.

³² According to the most recent available data, from the 2016 census. These numbers may have changed in the last 5 years. Notably, given rates of immigration in recent years, the aggregate immigrant population is likely to have grown. “Focus on Geography Series, 2016 Census,” Statistics Canada, 2017, <https://www12.statcan.gc.ca/census-recensement/2016/as-sa/fogs-spg/Facts-pr-eng.cfm?Lang=Eng&GK=PR&GC=48&TOPIC=7>

³³ “Focus on Geography Series, 2016 Census.”

³⁴ “Estimates of the components of demographic growth, annual,” Statistics Canada, September 29, 2021, <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000801>

³⁵ Grenier, Eric, “21.9% of Canadians are immigrants, the highest share in 85 years: StatsCan,” CBC News, Oct 25, 2017, <https://www.cbc.ca/news/politics/census-2016-immigration-1.4368970>

³⁶ Grenier, Eric, “21.9% of Canadians are immigrants, the highest share in 85 years: StatsCan.”

³⁷ Simons, Paula, “Alberta attracts more immigrants than B.C., new census data shows,” Edmonton Journal, Oct 25, 2017, <https://edmontonjournal.com/news/local-news/paula-simons-alberta-attracts-more-immigrants-than-b-c-new-census-data-shows>

³⁸ “Estimates of the components of demographic growth, annual.” Data for 2020/21 is preliminary.

³⁹ “AINP – Changes due to COVID-19,” Alberta Government, 2021, <https://www.alberta.ca/ainp-changes-due-to-covid-19.aspx>

Despite the reduction in immigration during the pandemic, Alberta remains a primary immigration destination compared to other Canadian provinces.⁴⁰ Newcomers that participated in ICTC's focus groups expressed that Alberta was a top destination of choice:

"I chose Alberta because Calgary was our dream city."

Focus group participant

The Pandemic's Impact on Immigration

Canada welcomes roughly 300,000 immigrants each year,⁴¹ but this changed significantly during the global pandemic, with immigration dipping by 46% from 2019 to 2020.⁴² Immigrants arriving to Canada as healthcare workers or temporary agricultural workers were the only two groups for whom immigration was not paused during this time.⁴³ As pandemic restrictions were lifted, some concessions were made for those applying to immigrate to Canada. In Alberta, the Provincial Nominee Program allowed accommodations for visa applicants who had lost jobs in Canada or who had been unable to renew work permits due to COVID-19. As a result of the immigration drop induced by COVID-19, Canada will aim to welcome an average of 400,000 or more immigrants per year over the next three years,⁴⁴ ⁴⁵ a signal that immigrants are considered key to Canada's recovery plan.⁴⁶

Immigration to Alberta is concentrated in its largest cities. Calgary and Edmonton's immigrant population alone is approximately 713,000, or nearly 85% of all immigrants in the province (see figure 6).⁴⁷

⁴⁰ "Estimates of the components of demographic growth, annual."

⁴¹ "Immigration in Canada: Statistics & facts," Statista Research Department, September 10, 2021, <https://www.statista.com/topics/2917/immigration-in-canada/#:~:text=Currently%2C%20annual%20immigration%20in%20Canada,of%20the%20total%20Canadian%20population.>

⁴² Esses, Victoria, et al. "Supporting Canada's COVID-19 resilience and recovery through robust immigration policy and programs," FACETS, May 13, 2021, <https://www.facetsjournal.com/doi/10.1139/facets-2021-0014>

⁴³ Esses, Victoria, et al. "Supporting Canada's COVID-19 resilience and recovery through robust immigration policy and programs."

⁴⁴ Feenan and Madhany, "Immigration and the Success of Canada's Post-Pandemic Economy."

⁴⁵ The estimates announced October 2020 have not changed since COVID-19. "Notice – Supplementary Information for the 2021-2023 Immigration Levels Plan," Immigration, Refugees and Citizenship Canada, June 18, 2021, <https://www.canada.ca/en/immigration-refugees-citizenship/news/notices/supplementary-immigration-levels-2021-2023.html>

⁴⁶ Feenan and Madhany, "Immigration and the Success of Canada's Post-Pandemic Economy."

⁴⁷ According to the most recent available data, from the 2016 census. These numbers have likely grown in the last 5 years. "Focus on Geography Series, 2016 Census."

Alberta Cities with the Largest Immigrant Populations

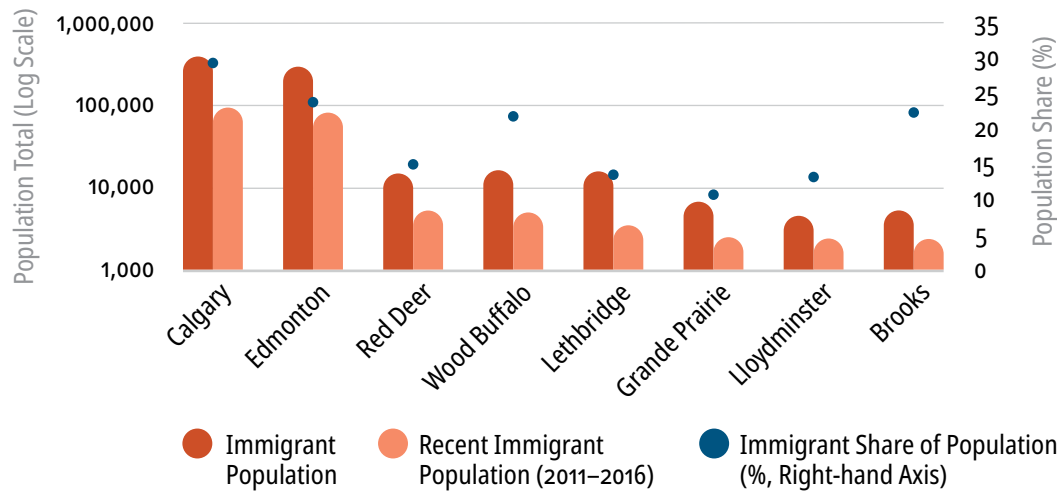


Figure 6. Alberta Cities with the largest immigrant populations

Approximately two thirds of immigrants admitted to Alberta are economic immigrants, referring to people who are permitted to immigrate to Canada based on their labour market skills or assessed suitability for Canada’s economy.⁴⁸ The current PNP, through which the majority of Alberta’s economic immigrants apply, aims to resolve labour shortages based on regional labour needs. The program gives preference to immigration applicants who possess skills or certifications that are in-demand based on provincial labour market needs.⁴⁹ This is largely a welcome shift among provinces, as it avoids a disconnect between Canada’s (federal) immigration policies and (provincial) labour market needs.⁵⁰

Newcomers Are Overeducated and Underemployed

Newcomers typically arrive in Canada with strong educational credentials and experience. According to the 2016 census, about four of every 10 immigrants holds a bachelor’s degree, while only a quarter of Canadian-born people do. Similarly, the proportion of immigrants with master’s or doctorate degrees is twice that of the Canadian population.⁵¹ Under the express entry pathway to citizenship⁵²—intended for skilled immigrants—approximately 90% of candidates have post-secondary degrees, and nearly 40% have five or more years of foreign work experience.⁵³ Nearly all of ICTC’s focus group participants had educational backgrounds equivalent to a bachelor’s degree in a STEM field, and many had

⁴⁸ For example, they may be specifically selected to meet labour market needs; own, manage or build businesses, or make substantial investments. “Focus on Geography Series, 2016 Census.”

⁴⁹ “How the Provincial Nominee Program (PNP) works,” Government of Canada, March 21, 2019, <https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/provincial-nominees/works.html>

⁵⁰ Frank, Kristyn, “The Economic Integration of Recent Immigrants to Canada: A Longitudinal Analysis of Dimensions of Employment Success,” Doctoral Thesis, 2009, https://central.bac-lac.gc.ca/.item?id=TC-OWTU-4495&op=pdf&app=Library&oclc_number=1262874266.

⁵¹ “Education in Canada: Key results from the 2016 Census,” Statistics Canada, November 29, 2017, <https://www150.statcan.gc.ca/n1/en/daily-quotidien/171129/dq171129a-eng.pdf?st=GW9-K1Bg>

⁵² Express entry is a Canadian immigration that is separate from the PNP. It assesses applications for permanent residence using a points-based system, and is designed to encourage immigration of skilled workers.

⁵³ “How Express Entry works”, Immigration, Refugees, and Citizenship Canada, June 29, 2021, <https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry/works.html>

more than 10 years of experience outside of Canada. Over half (54%) of university-educated STEM graduates in Canada are immigrants, while this share is even higher among engineering and computer science graduates (61%).⁵⁴

Despite high levels of education, immigrants are often underemployed when compared to their Canadian-born peers. For example, the STEM employment rate is lower among adult immigrants educated abroad (42%) than among those educated in Canada (58%).⁵⁵ Figure 7 depicts immigrant status by skill levels for different STEM fields in Alberta, with a majority of newcomers to Alberta arriving with professional skills. Feng Hou *et al.* note that between 2001 and 2016, university-educated immigrants accounted for 70% of low-skilled employment growth but only 38% of high-skilled employment growth.⁵⁶ Immigrants who received STEM education in Canada are less likely to be employed in a STEM occupation, compared to their Canadian-born peers.⁵⁷ More education can even diminish immigrants' employment potential: "Immigrants with higher international educational attainment, as well as those with more international employment experience, tended to have lower rates of employment in Canada than those with lower levels of international educational attainment."⁵⁸ Yao Lu and Feng Hou point out that overeducation is an especially significant challenge in Canada: "The immigrant-native gap in the overeducation rate is remarkably higher in Canada than in the United States."⁵⁹

Skill Levels in STEM Fields by Immigrant Status Alberta

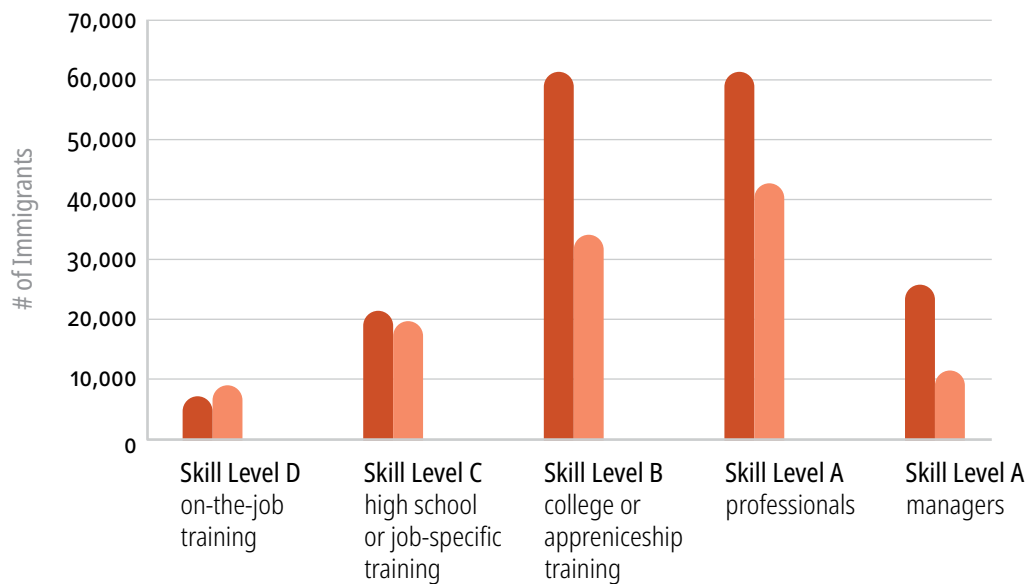


Figure 7. Skill levels in STEM fields, by immigrant status (Alberta). Source: Statistics Canada

⁵⁴ Picot, Garnett and Feng Hou, "Skill Utilization and Earnings of STEM-educated Immigrants in Canada: Differences by Degree Level and Field of Study," Statistics Canada, December 13, 2019, <https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019023-eng.htm>

⁵⁵ Skill Utilization and Earnings of STEM-educated Immigrants in Canada: Differences by Degree Level and Field of Study

⁵⁶ Hou, Feng, Yao Lu, and Christoph Schimmele, "Recent Trends in Over-education by Immigration Status."

⁵⁷ Picot, Garnett, and Feng Hou, "Immigrant STEM Workers in the Canadian Economy: Skill Utilization and Earnings," Canadian Public Policy, November 2018, <https://utpjournals.press/doi/full/10.3138/cpp.2017-036>

⁵⁸ Feenan and Madhany, "Immigration and the Success of Canada's Post-Pandemic Economy."

⁵⁹ The immigrant-native gap refers to the difference in the rate of overeducation between immigrants and native-born people. Liu, Yao and Feng Hou, "Immigration System, Labor Market Structures, and Overeducation of High-Skilled Immigrants in the United States and Canada," International Migration Review, January 30, 2020, <https://journals.sagepub.com/doi/abs/10.1177/0197918319901263>

This overeducation gap is in part the result of historical immigration policies that were drafted without accounting for provincial labour needs.⁶⁰ More recently, the Government of Canada has altered immigration policies significantly to capture regional labour and talent needs under the PNP, meaning that employers can now request skills needs and sponsor specific immigrants to fill their labour shortages.⁶¹ However, trends among immigrants continue to show a decline in earnings and difficulty finding employment. A Statistics Canada study notes that there is “no single explanation for this decline” but rather “a number of factors such as a shift in source countries, weak language skills, low economic recognition of foreign work experience and the high-tech bust of the early 2000s.”⁶²

Given the high level of education of many immigrants to Canada, the fact that immigrants tend to have more work (relatively speaking) in lower-skilled roles is further indication of a mismatch between training and the work that immigrants often perform. In 2017, Alberta’s immigrant labour force participation rate was the second highest in Canada, at 70.8%, though this featured a concentration of immigrants in Service-Producing Sectors (413,200), with a significant number of these in Health Care and Social Assistance (76,800), and Trade-Retail and Wholesale (70,200).⁶³ Despite high participation rates, the quality of this participation has not risen. As Picot and Hou write, economic “outcomes among the university STEM-educated immigrants deteriorated from 1986 to 2011 while remaining more or less constant among their Canadian-born counterparts.”⁶⁴

Overeducation and underemployment can harm businesses and newcomers. Feng Hou *et al.* write that these factors have “psychological costs in terms of job satisfaction, quality of life, and health status.”⁶⁵ Also, “overeducated workers tend to have lower earnings and more precarious working conditions.”⁶⁶ An Australian study by Colin Green *et al.* finds that overeducation limits the productivity gains that are the objective of skill-focused immigration policies.⁶⁷ Hou *et al.* suggest that the growth in knowledge-based industries and greater growth in resource-based industries may partially explain the underemployment trend among newcomers. However, knowledge-based industries may see an upturn in the future, particularly since the global pandemic has accelerated the digital economy.

Alberta’s immigrants are arriving with higher levels of education than that of Canadian-born citizens. Despite a decline during the pandemic, immigration is due to increase as the province rebuilds. Increasingly, immigrants to Alberta are likely to have skills relevant to the demands of the economy in large part because the PNP program allows provinces to prioritize industry labour needs. Still, despite high levels of education and experience, immigrants continue to face hurdles getting hired for several reasons, which are elaborated in the following section.

⁶⁰ Picot, Garnett and Arthur Sweetman, “Making It in Canada Immigration Outcomes and Policies,” Institute for Research on Public Policy, April 4, 2012, <https://irpp.org/research-studies/making-it-in-canada/>

⁶¹ Hou, Feng, Yao Lu, and Christoph Schimmele, “Recent Trends in Over-education by Immigration Status.”

⁶² Hou, Feng, Yao Lu, and Christoph Schimmele, “Recent Trends in Over-education by Immigration Status.”

⁶³ “2017 Alberta Labour Force Profiles,” May 2018, <https://open.alberta.ca/dataset/cab80384-59c6-42a1-9d7c-4b1f8b676ad8/resource/8914b60c-0962-42ea-9480-54f1b29b0186/download/labour-profile-immigrants.pdf>

⁶⁴ Picot, Garnett and Feng Hou, “Skill Utilization and Earnings of STEM-educated Immigrants in Canada: Differences by Degree Level and Field of Study.”

⁶⁵ Hou, Feng, Yao Lu, and Christoph Schimmele, “Recent Trends in Over-education by Immigration Status.”

⁶⁶ Hou, Feng, Yao Lu, and Christoph Schimmele, “Recent Trends in Over-education by Immigration Status.”

⁶⁷ <https://www.sciencedirect.com/science/article/abs/pii/S0272775706000446>

Section III

Key Challenges to Newcomer Employment

In many regards, newcomers to Alberta have precisely the skills, experience, and backgrounds that digital economy employers are looking for. Further, employers interviewed for this report said that a third to half of the applicants to their job postings are newcomers, suggesting that labour supply is not a factor limiting their hiring of newcomers. Yet when looking to match newcomers to in-demand roles, there are a few critical missing pieces in what newcomers offer, what employers expect, and the social and institutional networks that assist in this matching process. Responsibility to limit these barriers rests with both immigrant services and government, and tech employers. According to Denise Shortt *et al.*, “the underemployment of skilled immigrants is offered as evidence that the problem is recruitment and retention practices, not a shortage of skilled workers.”⁶⁸

Challenge 1: Requirements for Canadian Experience

Not having Canadian experience has been identified as a top barrier to employment for newcomers.⁶⁹ For employers, one way to increase the likelihood that a new hire is prepared to work in a Canadian office setting is to ensure that they’ve done so previously. While employers may accept foreign experience, Canadian experience is certainly seen as providing a leg up:

[It’s good] if they have North American software experience. If they’re from elsewhere, it may be more difficult. If they work with Uber in Hungary—no problem. If they work with a mom-and-pop shop or consultancy outside of Canada, it might be tougher.”

Anonymous employer

Furthermore, educational credentials from outside of Canada are not always valued—or even recognized—by employers. In the words of one newcomer:

⁶⁸ Shortt, Denise, Brian Robson and Magdalena Sabat, “Bridging the Digital Skills Gap: Alternative Pathways,” *Public Policy Forum*, 2020, <https://technationcanada.ca/wp-content/uploads/2020/10/DigitalSkills-AlternativePathways-PPF-JAN2020-EN-1.pdf>

⁶⁹ “How do I deal with the lack of Canadian work experience during a job interview?” *JVS Toronto*, October 15, 2018, <https://www.jvstoronto.org/blog/facing-the-challenge-of-finding-work-without-canadian-experience/>



“Most [immigration] programs require that you are educated or have some foreign credentials. So, to come to Canada, you have to upgrade your credentials. And it’s a long process, but it is an immigration requirement. But once you are in Canada, you [still] can’t work with these credentials [if they are not recognized].”

Focus group participant

The challenge of earning recognized education credentials is so significant that Katherine Wall *et al.* writes: “It is likely that immigrants with a degree in engineering from outside Canada will complete a graduate degree in engineering after arriving in Canada in order to earn Canadian educational credentials that are recognized by employers.”

Employers noted feeling more assured when hiring newcomers who had completed some upgrading, as this provides some Canadian experience and accreditation. However, enrolling in yet another program after arriving to Canada may not be affordable for every newcomer. Barriers such as childcare, precarious immigration status, and having already invested in their education in their country of origin may make attending such courses unappealing.

The Ontario Human Rights Commission suggests that asking for Canadian experience results in discrimination,⁷⁰ yet Alberta (and the rest of Canada) has no regulations that prevent employers from requiring Canadian experience. Newcomers spoke at length about their frustration with the need for Canadian experience:

“[I have] more than 13 years of experience in Korea. But I have zero experience in Canada. That means I’m not sure that they care about my previous experience in other countries.”

Focus group participant

“Most of the jobs, even when I got calls and emails, the first question was how many years have you worked in Canada? I told them, ‘Look, I have not worked in Canada obviously: I’m going to be moving there. I do not have the local experience [yet].”

Focus group participant

“As we got talking and it was like, ‘Oh, where did that project take place?’ And I’m like, ‘Oh, in Nigeria.’ And immediately I felt the conversation change, and he said, ‘I’m sorry. We’re actually looking for somebody who has worked in Canada before.’”

Focus group participant

⁷⁰ “Removing the “Canadian experience barrier,” Ontario Human Rights Commission, <http://www.ohrc.on.ca/en/removing-canadian-experience-barrier-brochure>

Response

The requirement for “Canadian experience” is a conundrum for many newcomers. However, experience does not always have to include paid work experience; rather, enrolling in a bridging program, completing courses, or taking volunteer positions in Canada can provide newcomers local experiences. As one employer stated:

“I’m looking for some experience in Canada, whether it’s schooling, volunteer work—anything just to show that we’re not the first stop for them”

Shane Rogers, CTO, Intelliview Technologies

For someone who recently immigrated or is earning a low salary, a need to volunteer or take bridging courses can be both challenging and unfair. Still, for those who are able to volunteer or take courses, doing so may provide a valuable opportunity to improve their employability and develop relationships and networks in Canada. The requirement for Canadian experience places the emphasis on newcomers to demonstrate their soft or business skills, including language proficiency and understanding Canadian workplace culture. Some of the newcomers in our focus groups took lower-paid or lower-skilled jobs for a short period, just to develop these skills.

While some employers require Canadian experience, many recognize the difficulty of moving to a new country and navigating a Canadian job search. Employers expressed their admiration for newcomers:

“It’s not easy to immigrate to Canada. If you’re able to get here you’ve managed to navigate the many rules, regulations, long time delays and strict requirements necessary to be in Canada. That means you’ve got the tenacity and fortitude which is a very good leading indicator for success in the workplace. Second of all, Canada is selective when admitting newcomers. Many are highly educated and they have really good work ethic.”

Noel Simpson, Co-Founder, EHS Analytics

Over the longer term, advocates for newcomers suggest that companies need to reorient hiring practices to improve inclusivity and make more explicit their recognition of international credentials, skills, and training.⁷¹ For example, the Ontario Human Rights Commission suggests that hiring practices focus on practical skills and ability to perform responsibilities of the job, as opposed to the location of previous experience.⁷²

According to the Conference Board of Canada, unrecognized foreign credentials contribute to a net loss of \$13.4 to \$17 billion in Canadian earnings.⁷³ To remedy the issue, Bill 11, The Fair Registration Practices Act, came into law in 2020, however, it is still too early to tell if the bill will make a positive impact for newcomers.⁷⁴

There are also calls for governments to improve the “mechanisms required to assess international credentials, skills, and competencies”⁷⁵ across Canada, which would improve the integration of newcomers into the workforce. One such example is the International Qualifications Assessment Service (IQAS), which assesses international educational credentials to determine how they compare to Canadian education credentials.⁷⁶ These assessments can ensure individuals’ foreign credentials are equivalent to Canadian credentials.

Challenge 2: Newcomers Networking, Making Connections, and Searching for Jobs

Newcomers reported struggling with the process of networking and identifying opportunities. To begin with, for those who are new to Canada, making industry connections can be challenging in the best of times. In a World Education Services survey of more than 6000 immigrants to Canada, nearly half (48.5%) cited a “lack of professional connections” as a barrier to employment.⁷⁷ Recent research indicates that social integration of immigrants can be a major barrier to employment.⁷⁸ Newcomers leverage arts, culture, and sports to engage with their networks.⁷⁹ Unfortunately, the COVID-19 pandemic exacerbated some of the difficulties already facing newcomers to Canada. Not only did the job market shrink during this time, but opportunities to network and meet new people—at least face-to-face—became exceedingly rare. While most newcomers highlighted the necessity of using LinkedIn or other forms of online networking, they suggested that these are not replacements for social and professional networks, which have been adversely impacted by the pandemic.

⁷¹ Feenan and Madhany, “Immigration and the Success of Canada’s Post-Pandemic Economy.”

⁷² “Removing the “Canadian experience barrier,” Ontario Human Rights Commission.

⁷³ “Brain Gain 2015,” The Conference Board of Canada, July 8, 2014, <https://www.conferenceboard.ca/infographics/brain-gain.aspx>

⁷⁴ Saint-Cyr, Yosie, “Alberta Fair Registration Practices of Regulatory Bodies Proclaimed in Force,” *Slaw*, February 6, 2020, <http://www.slaw.ca/2020/02/06/alberta-fair-registration-practices-of-regulatory-bodies-proclaimed-in-force/>

⁷⁵ Feenan and Madhany, “Immigration and the Success of Canada’s Post-Pandemic Economy,” p. 5.

⁷⁶ “International Qualifications Assessment Service (IQAS)” Government of Alberta, <https://www.alberta.ca/iqas-overview.aspx>

⁷⁷ Feenan and Madhany, “Immigration and the Success of Canada’s Post-Pandemic Economy.”

⁷⁸ Pathways to Prosperity. “Social and Cultural Integration of Immigrants in Canada.”

⁷⁹ “Social and Cultural Integration of Immigrants in Canada,” Pathways to Prosperity, 2021, <http://ip2pcanada.ca/research/social-and-cultural-integration-of-immigrants-in-canada/>.

Successful immigrant job searches often hinge upon the “presence of social networks in Canada.”⁸⁰ ICTC’s focus groups uncovered many details about newcomer experiences in the early stage of looking for work, particularly in networking and using job boards. Respondents explained that their primary means of finding job openings was through LinkedIn, though other job boards such as Indeed and Job Bank were also mentioned. Newcomers noted that LinkedIn was particularly helpful for finding old or distant connections. They also said that networking is key to successfully finding open opportunities in Canada, but that the pandemic changed the way newcomers networked. As one respondent said, “LinkedIn is the only way to expand my network right now because we cannot have any kind of meetings [due to COVID].” Another respondent said:

“I started networking prior to the pandemic. So, I was going for coffee, talking to people, meeting with people that were in the area of work I was interested in... then, of course, with the pandemic, everyone had to go virtual.”

Focus group participant

Response

COVID-19 presented unique challenges for newcomers. Newcomers, in our focus group, demonstrated their resiliency during the pandemic by pivoting their networking efforts online. However, additional online networking support could benefit newcomers by helping them navigate online etiquette, improving their digital portfolio, and their helping them stand out in networking events.

Many newcomers said that immigrant services organizations were helpful in regard to networking. For example, the Edmonton Regional Immigrant Employment Council (ERIEC) runs mentorship and networking programs designed for newcomers. Other newcomers benefit from their immediate community, family, religious or cultural associations, and friends to help navigate the Canadian job search experience. Again, volunteering was mentioned by both employers and newcomers as a great way to expand one’s network. Volunteering helped this newcomer secure a job:

“I volunteer with the Catholic Social Service. I also did three months as a volunteer with an electrical company. It was very useful to volunteer because... I discovered new strategies and improved my skills in Canada.”

Focus group participant

⁸⁰ Yssaad, Lahouaria and Andrew Fields, “The Canadian Immigrant Labour Market: Recent trends from 2006 to 2017,” *The Immigrant Labour Force Analysis Series*, Statistics Canada, December 24, 2018, <https://www150.statcan.gc.ca/n1/pub/71-606-x/71-606-x2018001-eng.htm>

Another respondent mentioned that some newcomers are not always aware of how Canadian networking events function. To remedy this, they suggested that services should be offered to newcomers to provide tips for job-search networking.

“I think newcomer associations should help the newcomer practice [networking].”

Focus group participant

Challenge 3: The Application and Interview Process

Canadian standards and expectations when applying for jobs are not always clear to newcomers. While some newcomers and employers may be a perfect match, in reality, application and interview processes can introduce significant barriers. Focus group participants shared a number of ways in which this was the case.

Standards for **resumes and cover letters** vary from country to country. Newcomers said they often write resumes to suit the format that they believe employers want, sometimes at the cost of what they felt was the best representation of their experience. For example, research suggests that immigrants sometimes downgrade their experience, education, and qualifications when writing cover letters and resumes.^{81 82} This corresponds with the advice some focus group members received: to only include immediately relevant information, thus discounting varied yet valuable experience, or experience that they thought employers might not understand:

“I removed a lot of qualifications from my resume.”

Focus group participant

At the same time, other newcomers noted the novelty of finding and matching key words from job descriptions:

“Here in Canada, we see the job description, and then we have to put all those [key] words, whatever they are, matching those skills in our resume. Then the system will pick it up and only then will it go the next stage”

Focus group participant

⁸¹ Hou, Feng, Yao Lu and Christoph Schimmele, “Recent Trends in Over-education by Immigration Status,” *Analytical Studies Branch Research Paper Series*, Statistics Canada, December 13, 2019, <https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019024-eng.htm>

⁸² Feenan and Madhany, “Immigration and the Success of Canada’s Post-Pandemic Economy.”

Numerous newcomers said they find **pre-screening interviews** challenging. For example, in focus group discussions, participants mentioned that they did not always know how to respond when asked about salary expectations. Other newcomers noted the challenge of interviewing in a second language:

“Yes, definitely language is a barrier and especially having an accent. It’s not helpful to getting a job. I have found so much stigma about accents.”

Focus group participant

Some newcomers, meanwhile, were surprised with the attention given to personal experience (as distinct from work experience) in interviews. Others had difficulty with behavioural questions. Participants expressed that they were not sure why such questions were weighed so heavily.

“They didn’t even ask anything about my experience as a business analyst. But it was more about... my home country, and what generally I do in day-to-day activities. So nothing specific about the role for which I applied.”

Focus group participant

“It is kind of more like human-problem issues, like company cultures. But those questions, those scenario questions, were kind of complex for me.”

Focus group participant

Newcomers also expressed frustration with the uncertainty of **the post-interview stage**, often not knowing where they stood in the application process and not receiving feedback if they were rejected:

“You never hear back. And, you know, at some point you start looking at yourself and you’re thinking maybe it’s me, maybe there’s something wrong with me.”

Focus group participant

“I really don’t know whether they are considering my application. For two months, I really didn’t understand whether they’d shortlisted another candidate, whether the interview has happened [for other candidates], whether the position is open or closed.”

Focus group participant

Many of these challenges cited by newcomers may come across as standard (yet frustrating) for many Canadians, but they can be particularly frustrating for people coming from different application processes. Interview and resume procedures and expectations can be highly nuanced, and navigating these social norms is critical for employment success.

Response

One response to the challenges newcomers face in applying and interviewing for jobs is for employers to do their utmost to ensure inclusive hiring practices. Such practices are designed to ensure that candidates are hired based on their ability to perform while ensuring that bias is minimized. Such practices involve ensuring consistency in interview questions, asking how interviewees would apply their skills, writing job descriptions that do not use jargon, writing job descriptions that ask for ability rather than experience, ensuring job postings are inclusive of underrepresented groups, providing mentoring opportunities, and providing training that is presented in multiple formats.^{83 84}

Employers in this study recommended that newcomers take the time to tailor their job applications to specific roles, rather than canvassing multiple available jobs with a general resume and cover letter:

“When I just get a generic resume or cover letter that says ‘Hi, I think I’m good for this job, thanks,’ I don’t have confidence that they’ve actually given it some thought. And I feel like they’re probably just applying to everything.”

Anonymous Employer

“Creating a resume and cover letter that’s specific to the job is key. It’s just so easy to apply for things electronically. And it’s really clear that you’re not actually trying to work for EHS Analytics, you’re just spamming your resume out to as many companies as you possibly can. Spend some time learning about the company you’re applying for, tailor your resume and cover letter to that company and job and you will substantially increase your chances of landing an interview.”

Noel Simpson, Co-Founder, EHS Analytics

⁸³ “HR Inclusive Policy Toolkit,” Government of Canada’s and MentorAbility Canada, January 2021, https://supportedemployment.ca/wp-content/uploads/2021/03/HR-Inclusive-Policies-EN-CASE-2021_web.pdf

⁸⁴ “Inclusive Hiring Resource Guide,” Harvard Human Resources, June 30, 2021, https://hr.harvard.edu/files/humanresources/files/inclusive_hiring_resource_guide.pdf?m=1610551858#:~:text=The%20Inclusive%20Hiring%20Resources%20Guide,help%20mitigate%20biases%20in%20our

Finally, while understanding Canadian norms related to applications and interviews may seem like a proxy for “soft skills” to employers, it is often learnable, contextual knowledge, rather than an inherent individual trait. Immigrant services organizations (as well as training and upskilling initiatives) are well-placed to (continue to) assist in this area by developing training to help newcomers better navigate expectations around applications and interviews.

Challenge 4: Confusing Soft Skills with “Culture Fit”

Employers, newcomers, and related support organizations consistently highlighted that the technical skills of newcomers differ little from those of non-newcomers. Rather, they suggested that soft skills related to communication, organizational expectations, and business customs were sometimes lacking. Such skills, including the social and emotional skills to develop strong relationships with colleagues and clients,⁸⁵ are typically considered exceedingly important for newcomers and Canadian-born employees alike. Especially as a result of increased remote work, companies are particularly careful when hiring, and often emphasize soft skills. In 2020, the most popular LinkedIn course was time management and strategic thinking, underscoring the demand for soft or business skills.⁸⁶ Further, there is a call for employers to develop “clear definitions of what employers mean by skills” to improve inclusion and diversity in workplaces.⁸⁷

Yet it is important to note the complex interplay between what is considered a soft skill and in-depth understanding of Canadian workplace norms and expectations—a distinction that is often challenging for someone who has not worked in Canada. Newcomers acknowledged difficulty with this, as noted by one focus group member:

“I don't think I totally understand how things work in Canada in terms of job cultures.”

Focus group participant

For example, employers suggested that newcomers would benefit from adopting slightly different working styles more in line with the expectations of Canadian employers—styles that could be perceived both as soft skills and as components of organizational culture:

⁸⁵ Ng, Eddy, Anjum Sultana, Kory Wilson, Simon Blanchette and Rochelle Wijesingha, “Building Inclusive Workplaces,” *Public Policy Forum*, May 2021, <https://ppforum.ca/wp-content/uploads/2021/05/Building-Inclusive-Workplaces-May2021-EN.pdf>

⁸⁶ Ng et al. “Building Inclusive Workplaces.”

⁸⁷ Ng et al. “Building Inclusive Workplaces.”

“Newcomers need to share more! They need to be proud and proactive about what they’ve done and worked on, not guarded. I think this has to do with kind of an old management style versus a new one, and in Canada we really operate with a new style. I can’t be teasing things out of them.”

Anonymous employer

“Culture fit” can sometimes be more explicitly connected to factors such as race and language skills. Foreign names and foreign credentials can be the subject of unconscious bias or beliefs that such individuals may not possess strong communication and English language skills. For example, in one study, candidates with “Asian sounding names” were 20% less likely to be called for interviews in large organizations, and 40% less likely in smaller organizations than similar candidates without Asian sounding names.”⁸⁸

Picot and Sweetman attribute poorer employment outcomes of immigrants in part to their fluency in English and French.⁸⁹ Language skills were considered a barrier for employment by some employers but were also often grouped with soft skills:

“English can be challenging. Soft skills are critical—they shouldn’t hide their lack of understanding; they should be forthright about that.”

Shane Rogers, CTO, Intelliview Technologies

Response

Many of the basics of inclusive hiring processes (described in response to Challenge 3 above) can also be used to reduce instances of discrimination related to perceptions of “culture fit.” To avoid conflating soft skills with “culture fit,” employers should develop interview questions or exercises designed specifically for soft skills assessment. Companies could also try to define their company’s culture and grade prospective hires against that criteria.

Additionally, onboarding was considered by focus group participants who had secured jobs as a mechanism for understanding company culture. Employers expressed positive assessments of their own onboarding. When asked to rate how well they onboarded employees, employers gave themselves an average score of nine out of 10. Newcomers corroborated these assessments:

“I was lucky enough to get some job shadowing. So I was able to learn from somebody in the company before I started.”

Focus group participant

⁸⁸ Banerjee, R., Reitz, J.G., and Oreopoulos, P., 2018, quoted in Ng et al. “Building Inclusive Workplaces,” p. 23.

⁸⁹ Picot, Garnett and Arthur Sweetman, “Making it in Canada,” Institute for Research on Public Policy, April 4, 2012, <https://irpp.org/research-studies/making-it-in-canada/>

“The most important thing that they did for me was [that] they very clearly laid out my objectives and [how] they are going to measure [my performance]. Then I knew exactly what I needed to do to get there.”

Focus group participant

The first [few] months, I was very shy and just tried to learn the jargon of the people that I work with [and the terms] that are new for each team or industry. But so far, my team has been very supportive, and managers as well.”

Focus group participant

Challenge 5: Salary Negotiation and Accepting the Job Offer

Among the newcomers in focus group discussions, many felt pressured to take the first job offered to them. This is especially true for those who have precarious immigration status, moving through temporary and probationary immigrant status before they can apply for permanent residence.⁹⁰ Given this, immigrants can be pressed to take any job offer, regardless of role, salary, and whether it provides full-time or part-time work:

“I was expecting to have a full-time job. But [they offered] part-time and I just had to say yes because it is a first job. So, maybe I will have better opportunities after this one.”

Focus group participant

Immigrants being pressured to take unstable and poorly paid jobs may contribute to unhealthy immigrant integration strategies that can have “long-term negative consequences for Canadian society as a whole.”⁹¹ A 2012 study by migration researchers Luin Goldring and Patricia Landolt notes that “immigrants, particularly those from racialized groups, have lower incomes than similarly educated non-immigrants, and that lasting income disparities are emerging among native-born ethnic and racialized groups.”⁹² The study adds that “early precarious legal status can contribute to migrants settling for precarious work and getting stuck in low-paying jobs for a long time.”⁹³ One focus group participant explained:

⁹⁰ Goldring, Luin and Patricia Landolt, “The Impact of Precarious Legal Status on Immigrants’ Economic Outcomes,” *Institute for Research on Public Policy*, October 23, 2012, <https://irpp.org/research-studies/the-impact-of-precarious-legal-status-on-immigrants-economic-outcomes/>

⁹¹ Goldring and Landolt, “The Impact of Precarious Legal Status on Immigrants’ Economic Outcomes.”

⁹² Goldring and Landolt, “The Impact of Precarious Legal Status on Immigrants’ Economic Outcomes.”

⁹³ Goldring and Landolt, “The Impact of Precarious Legal Status on Immigrants’ Economic Outcomes.”

"I work as a meat cutter [in a] meat processing plant. But my background is in manufacturing. [In Mexico,] I'd been working in the IT industry because I am an information technology engineer and I have a master's degree in industrial engineering. When [employers] find out that my degrees are in Mexico? They don't seem very interested. [And] when I tell them then my [work] experience in Canada has been different than my background, they basically move on to other people."

Focus group participant

Even after securing their first job in Canada, many focus group participants continued to question if their salaries were competitive in the tech ecosystem. Poor wage negotiations have been posited as one reason for wage inequality between immigrants and native-born workers.⁹⁴ One participant mentioned that even after accepting the role, they did not know if they negotiated a reasonable salary:

"Even now, I don't know if [my salary] is the correct number or not."

Focus group participant

Response

Salary negotiations are difficult for many people, especially those unfamiliar with Canadian standards. One focus group participant echoed this frustration:

"I always believed there should be a particular salary attached to the role you're applying for. Coming to Canada, I found out that you actually have to tell the employers what you want. And that's been strange for me so far."

Focus group participant

There has been a growing call to publish salary ranges on job postings, as doing so can reduce inequity.⁹⁵ This transparency can also help show applicants the "landscape," meaning that they have a better understanding of available alternatives when they are offered a role.

Finally, immigrant support organizations are critical in providing newcomers with information about Canadian expectations for negotiations. Professional advice and social support are necessary to provide newcomers with such information and to support newcomers when determining whether to accept a job offer.⁹⁶

⁹⁴ Behtoui, Allreza, and Anders Neergaard, "Social capital and wage disadvantages among immigrant workers," *Work, employment and society*, 24(4), December 2010, <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.967.9406&rep=rep1&type=pdf>

⁹⁵ Kelly, Jack, "Salary Ranges Should Be Listed On Job Descriptions And Worker Compensation Disclosed For All To See," *Forbes*, September 23, 2021, <https://www.forbes.com/sites/jackkelly/2021/09/23/salary-ranges-should-be-listed-on-job-descriptions-and-worker-compensation-disclosed-for-all-to-see/?sh=463ce0ca15e2>

⁹⁶ Behtoui and Neergaard, "Social capital and wage disadvantages among immigrant workers."

Challenge 6: Upskilling Needs

Upskilling is one way internationally educated professionals may both improve their employability and earn some Canadian experience. While many upskilling initiatives exist in Canada, there is room for more—newcomers may benefit from a range of upskilling programs. For example, while upskilling related to technical skills (for example through bootcamps such as Lighthouse Labs) has proven popular in recent years, study participants also highlighted the need for upskilling soft skills, understanding Canadian business practices, and the ability to network and interview in Canada. Further, efforts should be made to ensure that upskilling programs are accessible and, in some situations, targeted to newcomers.

Upskilling initiatives should be developed in collaboration with industry partners so that participants gain relevant skills. This also means that such programs require strong monitoring, evaluation, and regular modification. The C.D. Howe Institute notes that recent Canadian public policy responses to improve adult skills have typically been to subsidize training, but “more time is needed to assess whether employers are taking full advantage of these opportunities to upskill their workforce.”⁹⁷

Response

There is growing appetite for upskilling, in part due to the pandemic. The Canadian Chamber of Commerce suggests that employers must ensure employees are effective at working online and using digital technologies.⁹⁸ Canada has seen numerous successful upskilling initiatives, including Palette Inc. (cybersecurity and sales upskilling), Edge Up (retrains displaced oil and gas workers), ADaPT (skills development and work placement for recent graduates), ICTCs GO Talent (helps prepare newcomers with tech skills for work in Canada), and NPower (training for unemployed and underemployed youth). Albertan companies are beginning to support immigrant upskilling as well, with Immigrant Services Calgary alongside a number of Calgary-based businesses developing an upskilling program in early 2021.⁹⁹

⁹⁷ Alexander, Craig, “Job One is Jobs: Workers Need Better Policy Support and Stronger Skills,” C.D. Howe Institute, February 2, 2016, https://www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/e-brief_227_0.pdf

⁹⁸ Taylor, Phil “Four things we need to get right for the reopening of offices: Canadian Chamber of Commerce,” Canadian Chamber of Commerce, June 10, 2021, <https://chamber.ca/news/four-things-we-need-to-get-right-for-the-reopening-of-offices-canadian-chamber-of-commerce/>

⁹⁹ Scheel, Elise von, “Calgary companies launch their own tech upskilling program due to talent shortage Social Sharing,” CBC News, March 23, 2021, <https://www.cbc.ca/news/canada/calgary/calgary-tech-upskilling-1.5959277>

Upskilling Soft Skills With ICTC

ICTC provides soft skills training for newcomers, career transitioners, and youth. For example, ICTC's Agile Industry Mindset (AIM) program is designed to help prepare participants for workplaces that use Agile methodologies—practices that are common in project management and software development. Beyond that, it provides foundational skills that help to close talent gaps, build better relationships, and increase creativity and innovation. Much of AIM's content is oriented around soft skills such as creativity, empathy, and conflict resolution.

ICTC also provides soft skills training even for more technical programs such as the Arrival to FinTech Ready (supports newcomers with Blockchain and FinTech training). Along with job placement, the program included (program ended in September 2021) an orientation to Canadian business practices and job preparation such as sessions on resumes, cover letters, job search, LinkedIn and networking.¹⁰⁰

Skills development programs to improve newcomer employability could entail education related to:

- Canadian business culture
- English language and corporate communication
- Career development such as interviewing and resume preparation
- Sales, customer service, partnerships

Examples of some of these programs already exist among the upskilling initiatives above, while universities and colleges also provide some upskilling opportunities. Nonetheless, there remains room for more courses, more initiatives, and more Alberta-specific opportunities in the upskilling space.

¹⁰⁰ Lijour, Marc, "Firing Up Fintech: A New ICTC Program Helps Ontario Newcomers Step Into FinTech Jobs," ICTC, November 10, 2020, <https://www.ictc-ctic.ca/firing-fintech-new-ictc-program-helps-ontario-newcomers-step-fintech-jobs/>

Conclusion



Newcomers voiced excitement at the prospect of contributing to the growing tech sector in Alberta with their extensive experience and high levels of education. While digital economy labour shortages are expected to increase, there is an opportunity for currently unemployed or underemployed newcomers to succeed in Alberta. Encouraging and facilitating newcomer workforce integration is good for the economy and society. It also has knock-on benefits, according to Katherine Feenan and Shamira Madhany: “Offering a clearer pathway to workforce integration in Canada will be important in guaranteeing that highly skilled individuals considering immigration are convinced to seek out opportunities in this country.”¹⁰¹

Section one of this report discusses the demand for digital economy talent in Alberta. It details the province’s recent economic history, demonstrating that a strong digital economy will be an essential component of a diverse and resilient Albertan economy. As the digital economy in Alberta scales, tech talent will continue to be in high demand. Albertan employers seek employees with strong technical skills in coding languages, data analytics, and machine learning—skillsets often available among newcomers. Soft skills are highly valued among many employers, but there were suggestions that some newcomers are missing these skills. Research suggests that closing skills gaps through training or immigration programs is only one aspect of successfully matching employers and newcomers.¹⁰²

Section two provides a recent history of immigration to Alberta and details newcomer participation in the tech labour force. Newcomers come with high levels of experience and the talent required to support the province’s digital economy. Many newcomers, however, are both overeducated and underemployed. In part due to skills mismatches, immigrants with university education are less likely to be employed in high-skilled roles in Canada. Newcomer underemployment means that Alberta is underutilizing a large pool of talent.

Section three investigates key barriers to newcomer employment (particularly those unrelated to newcomer skills) and outlines some responses to each of these barriers. First, many employers require Canadian experience, which many newcomers do not possess. Additionally, newcomers struggled to network and make new connections, further handicapping their job search. The application and interview process is not always familiar to newcomers, meaning that qualified, potentially high-performing newcomers may come across as less than ideal candidates. Similarly, navigating what employers seek in terms of “culture fit” can

¹⁰¹ Feenan and Madhany, “Immigration and the Success of Canada’s Post-Pandemic Economy.”

¹⁰² Tibando, AJ and Dr. Arvind Gupta, “Emerging Stronger: Addressing the Skills Under-Utilization Challenge for the Future of Work in Canada,” Public Policy Forum, June 12, 2020, <https://ppforum.ca/publications/emerging-stronger-addressing-the-skills-under-utilization-challenge-for-the-future-of-work-in-canada/>

sometimes be a barrier for newcomer employment, particularly when soft skills and culture fit are conflated. Salary negotiations and job offers are also areas where cultural norms may differ in Canada and are thus challenging for newcomers. Finally, upskilling has gained momentum as a tool to assist newcomers in finding quality employment and remains an area of significant potential.

The path to meaningful employment is not always straightforward for newcomers. Making it more straightforward will not only help newcomers, however; it will bolster Alberta's digital economy. While support for skilled immigration to Canada has grown in recent years, encouraging immigrants to come to Canada is only beneficial if they are successfully integrated into the workforce. In the case of Alberta's digital economy, key elements to such integration begin with understanding skills-related supply and demand and ensuring effective matching of newcomers and employers.



Appendices

I. Research Methodology

A combination of primary and secondary research methods was used in this report. Secondary research consisted of a narrative literature and data review, which provided context for primary research. This work was supported by an advisory committee, which met three times over the course of the project. Primary research methods consisted of 10 Key Informant Interviews with Albertan employers and three focus groups, consisting of seven to 10 members each.

Key informant interviews were completed with individuals that have hiring responsibilities (typically CEOs or senior staff) in Albertan digital economy employers. These interviews were semi-structured, and examined employer perceptions of newcomers, employer needs, and assessment of their own hiring practices.

Focus groups were held with newcomers who had arrived in Alberta from abroad within the previous five years and were working (or seeking work) in the digital economy. These were held online and were led by three ICTC facilitators. Participants were asked questions primarily about their experiences with the job application and hiring process, but the format allowed for open discussion among participants.

Primary quantitative data was obtained from participants in ICTC's GO Talent immigration program. GO Talent is designed to help internationally educated professionals—individuals with strong tech backgrounds who have immigrated to Canada—find employment pathways to in-demand digital roles in Canada.¹⁰³ In Alberta, there are over 400 participants in the program. Of those, 42% have bachelor's degrees and 41% have master's degrees, and nearly 80% are currently seeking employment, with about 10% waiting to hear back from employees.¹⁰⁴ The sample used in this report consisted of 236 GO Talent participants. Information regarding in-demand skills among Alberta employers was based on data synthesized from a national 2020–2021 ICTC skill-importance survey and job posting data gathered from national job sites from January 2020 to February 2021.

¹⁰³ GO Talent program, ICTC, <https://www.ictc-ctic.ca/talent/>

¹⁰⁴ GO Talent program, ICTC, <https://www.ictc-ctic.ca/talent/>

II. Limitations of Research

GO Talent participant data was for individuals arriving (or expecting to arrive) in cities across Canada and is thus not necessarily representative of newcomers to Alberta. GO Talent data consisted of self-reporting of participants skills. This was not a comprehensive list, meaning that some in-demand skills may be missing. Participants did not have to include skill information, meaning that results may be subject to non-response bias. Finally, respondents did not have to indicate their level of proficiency for each skill (only whether they possessed that skill), meaning that some skills may be common but not at a high level.

Focus group participants and key informant interviewees were primarily based in Calgary or Edmonton, so this report does not entirely capture the experience of individuals in smaller cities and rural areas, partly because tech opportunities in rural areas is relatively limited.

The population of newcomers to Alberta is immensely diverse, and it is important to note that experiences vary significantly among different newcomers. Intersectionality—the interplay between characteristics such as race, class, and gender—can lead to varying outcomes and needs for different people. For example, employment rates are lower among recent immigrants, female immigrants, and younger immigrants.¹⁰⁵ Similarly, employment outcomes vary depending on an immigrant’s country of origin.¹⁰⁶ Individual outcomes may also differ depending on one’s immigrant status or route. In this study, all focus group participants had arrived in Alberta from abroad in the previous five years and were working (or seeking work) in the digital economy. While they may also represent experiences common to other newcomers, the findings discussed in this section are specific to the experiences of these individuals.

Focus group research may sometimes suffer from “dominant voices”—instances where certain participants in the group speak often and loudly enough that their experiences are misinterpreted as representing those of the entire group.¹⁰⁷ Focus group settings may also restrict participants from voicing more extreme or controversial opinions.¹⁰⁸

This report (and questions in KIIs and focus groups) did not cover aspects of newcomers’ feelings of racialization, their experience of social services such as childcare or housing, or non-employment related challenges associated with immigrating to a new country.

¹⁰⁵ Yssaad and Fields, “The Canadian Immigrant Labour Market: Recent trends from 2006 to 2017.”

¹⁰⁶ Yssaad and Fields, “The Canadian Immigrant Labour Market: Recent trends from 2006 to 2017.”

¹⁰⁷ Smithson, Janet, “Using and analysing focus groups: limitations and possibilities,” *International Journal Social Research Methodology*, 3(2), 2000, <http://www.sfu.ca/~palsys/Smithson-2000-Using&AnalysingFocusGroups.pdf>.

¹⁰⁸ Smithson, “Using and analysing focus groups: limitations and possibilities.”

III. Additional Figures

KII Proportion of Newcomer Staff

Employees hired as a newcomer Total number of employees



ICT NOCs by Proportion of Immigrants Performing Them



Top Technical Skills of Newcomers

