

DISCUSSION PAPER SERIES

IZA DP No. 15226

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Evidence from a Survey of Employers in  
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## ABSTRACT

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# Employer Attitudes and the Hiring of Immigrants and International Students: Evidence from a Survey of Employers in Canada\*

What are the perceptions of employers towards hiring immigrants and international students in Atlantic Canada? How are they related to hiring outcomes? Our analysis based on a 2019 random, representative survey of 801 employers finds that those employers who report beliefs that multiculturalism is creativity-enhancing in the workplace and that immigrants are harder working than local workers are more likely to report hiring or intending to hire newcomers and international students. Although most employers report positive attitudes towards newcomers and international students, employers who report perceptions that immigrants tend to take jobs from domestic workers, accept lower pay, have a lower retention probability, face language barriers, have higher training costs, and hold unreliable credentials are less likely to report hiring from this group.

**JEL Classification:** J23, J61, J63, J68

**Keywords:** immigrants, international students, labour and skill shortages, employer hiring attitudes, employer survey, Atlantic Canada

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## INTRODUCTION AND BACKGROUND

Due to declining fertility rates, an aging population, and continued outmigration, Atlantic Canada is facing a population crisis (Akbari, 2015). One of the chief solutions for this problem is to increase the number of immigrants. Fewer immigrants settle in these provinces compared to the rest of Canada (Sano et al., 2017). Retention is also a challenge, as immigrants may leave if they do not find favourable conditions. A major driver for immigration, and perhaps the most important factor in determining immigrant retention, is meaningful employment (Fang et al., 2018; Hellstrom, 2020). Ensuring that immigrants can find employment suiting their experience, education, and skills upon their arrival is paramount to enhancing the benefits of immigration and ensuring that skill and labour gaps in the local economy are filled.

International students with Canadian educational credentials, strong language skills, and local work experience in Canada are ideal candidates for labour market participation. Most post-secondary international students have the option to apply for an open work permit after graduation, and this system aims to encourage them to work and stay in Canada while providing them a chance to acquire Canadian work experience (Lu and Hou, 2019). The number of international graduates in Atlantic Canada has increased dramatically as of late (Chira, 2017). In addition to the Canadian Experience Class under the Express Entry program (Immigration, Refugees and Citizenship Canada, Evaluation Division, 2015; Wang, 2018), international graduates in Atlantic Canada have another path to become permanent residents: the International Graduate Stream within the

Atlantic Immigration Pilot Program or AIPP (Immigration, Refugees and Citizenship Canada, Research and Evaluation Branch, 2020), which recently became a permanent program and was renamed as the Atlantic Immigration Program (AIP). Some collaborative efforts have been made to ensure that international students stay after graduation. For example, by improving international students' employability and connecting them with employers, Atlantic Canada Study and Stay is a successful pilot program leading to a much higher retention rate for international students (Toughill, 2019). However, many students leave the region due to a lack of job opportunities that match their professional qualifications and career aspirations (Arthur and Flynn, 2011). The retention rate has improved in recent years; however, compared to the retention rate in other provinces for the 2004-2015 period, it is still very low in the Atlantic provinces (NS, 15%; PEI, 15%; NL, 17%; NB, 18%; BC, 21%; SK, 26%; ON, 27%; MB, 29%; AB, 34%, QC, 38%; Haan, 2018).

Immigrants and international students are combined in the paper for several reasons. First, we recognize that 'immigrant' is often a catch-all term for newcomers from other countries, which may include international students. However, international students are not listed explicitly in the Government of Canada's immigrant admission categories, instead falling implicitly under the "other immigrant" category (Statistics Canada, 2019). Given the increasing importance of international students in the Atlantic region (Chira, 2017), and the fact that they are implicitly included in the official immigrant classification system, we decided to include them in the survey questions and throughout this paper. There are natural differences in the average characteristics and abilities that those in each

immigrant classification category can bring to the Canadian labour market, but to induce a higher response rate among those contacted for the survey of employers, the categories are lumped together in a “immigrant and international student” category.

Though immigrants and international students have had a significant impact on the Canadian labour market and local social-economic environments, they face various employment obstacles and on average, experience longer time in unemployment (Bowlus et al., 2016) and higher unemployment rates (Fuller, 2015) than their native peers. This is the case even though employers have reported difficulties in filling job vacancies and anticipated more serious labour and skill shortages in the coming years (BDC, 2018; Hiebert, 2019). Although labour and skill shortages have no commonly accepted definition in the literature (McDaniel et al., 2015), and employers may exaggerate their severity (Barnetson, 2018), employer reports may be a reasonable signal of the magnitude of shortages. In this study, employers’ difficulty in filling job vacancies in the last three years is taken as a concrete measure of labour and skill shortages. Although there is a significant amount of research that has explored the labour market challenges for immigrants and international students (Boswell et al., 2004; Samuel and Basavarajappa, 2006; Kelly-Freake, 2007; Fang, 2009; Miner, 2012; BDC, 2018), there has been a lack of studies from the labour demand side examining employers’ perspectives using representative employer survey data (Cao et al., 2018; Harrison and Lloyd, 2013; Faberman and Kudlyak, 2016; Enchautegui 2015; BDC, 2018).

The research questions of this paper centre around understanding employers' attitudes and experiences and analysing their thoughts and concerns regarding the hiring of immigrants. This study's objective is to examine how employer hiring attitudes towards immigrants and international students may influence their recent hiring decisions. By understanding employers' experiences and analysing their concerns, this paper will help identify the benefits, threats, and obstacles associated with hiring immigrants and international students. We also explore possible solutions to enhance mutual understanding and minimize information asymmetry so employers can better utilize the human capital of immigrants and international students to fill labour and skill shortages while keeping them in the Atlantic provinces for the long term. Developing such solutions is critical to secure the long-term productivity and economic growth of the Atlantic provinces.

## LITERATURE REVIEW

Organizations in Canada are facing labour and skill shortages resulting from mass retirement, low fertility, and technological advancement (BDC, 2018). Atlantic Canada is experiencing an even more serious situation than the rest of the country due to its more advanced population aging and lower fertility rates (ACOA, 2019; APEC, 2020). Consequently, employers are struggling to fill job vacancies (BDC, 2018; Hiebert, 2019; Fang et al., 2021). Upskilling the existing labour force, better utilizing the skills of newcomers, and improving the labour force participation rate of underrepresented groups such as Indigenous and disabled people are all potential solutions that both the business

community and the government can pursue to alleviate labour and skill shortages (McDaniel et al., 2015; Pascoe-Deslauriers, 2020).

Despite the importance of hiring immigrants and international students, there is a limited amount of research that has explored the comparative advantages and disadvantages of the hiring practice, as well as the reasons for doing so. For example, literature has described the various plausible mechanisms which may affect the experiences and contributions of immigrant employees: creativity and voice, diversity, co-worker and supervisor support and antagonism, and social network structures (Harrison et al., 2019).

Rolfe et al. (2019) have outlined the reasons behind employers' preference for European Union (EU) immigrants over British workers in the United Kingdom. Migrants are sometimes recruited for their complementary and niche skills, rather than to substitute home grown talent (e.g., engineering, language skills in finance sectors; Rolfe et al., 2019). Migrants are valued over British workers because of the flexibility in their hours of work, which enables employers to reduce the risk and costs associated with a permanent, full-time workforce. Industries including food processing, hospitality and construction have developed flexible production models which have benefited from the supply of EU migrants (see Rolfe et al., 2019 for a review).

Based on the threat-benefit model of Tartakovsky and Walsh (2016), the local population perceives immigrants as both threatening and beneficial for the receiving society. Their theory of immigrant appraisal involves four types of benefits (economic,

cultural diversity, humanitarian, and physical). Economic benefit means that immigrants do highly skilled jobs that locals cannot do or low-paying work that locals do not want to do and can be highly motivated to work, enabling society to achieve greater wealth. Cultural diversity benefit implies that new cultural elements (food, clothes, music, etc.) that immigrants bring with them may be perceived as enriching the receiving society. Humanitarian benefit refers to the notion that accepting immigrants and helping them to adjust in the receiving society promotes the motivational goals related to achieving equality, helping other people and seeing ourselves as humanitarians. Finally, physical benefit means that immigrants can be perceived as interesting people who are enjoyable to be with (Tartakovsky and Walsh, 2016).

The authors also propose four types of threats (physical, economic, threat to social cohesion, and threat to modernity). Physical threat means that immigrants are perceived as physically threatening because intrusion of an out-group harms the society's sense of stability/security. Economic threat means that immigrants are perceived as threatening to the locals' dominance over resources by competing for jobs and/or competing for government supports and resources. Threat to social cohesion means that immigrants are perceived as threatening because they introduce their own customs and behavioural norms, which can differ from those of the receiving society. By threat to modernity, Tartakovsky and Walsh (2016) mean that most immigrants coming to the developed countries are more conservative than the local population.

In the extant literature, there is no integrated theoretical framework to explain the hiring of immigrants from the employer perspective. While there is ample theoretical and empirical research regarding the general economic reasons for hiring, the motivations behind the selection of immigrant job candidates specifically are lacking. Furthermore, the literature is lacking representative data to provide more convincing evidence. The previous studies with empirical components often suffer from small sample sizes.

## THEORETICAL FRAMEWORK

To answer the question of whether and why employers hire immigrants and international students, we extend the threat-benefit model of Tartakovsky and Walsh, 2016 to employers and include these possible factors (Table 1). We begin with possible perceived benefits:

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Insert Table 1 about here

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- **Creativity-enhancing multiculturalism:** Multiculturalism can have numerous perceived and/or actual impacts in the workplace, both positive and negative. Newcomers coming from different backgrounds can bring diverse ideas, skill sets, and perspectives, spurring discussion and fostering creativity and innovation in the workplace (Hunt and Gauthier-Loiselle, 2010; Gu et al., 2020; Stahl et al., 2010). Leung and Wang (2015) find that there is widespread agreement among researchers that multiculturalism does indeed

enhance creativity. The creative process in multicultural teams stems from employees of varying cultural backgrounds both eliciting knowledge from other cultures and integrating knowledge across cultural boundaries, potentially drawing out novel insights that would not be discovered in a monocultural environment (Jang, 2017). Outside of the teamwork context, exposure to multiculturalism can also foster creativity on an individual level (Leung et al., 2008).

- **Increased exports:** Immigrant and international student employees know about their home country's culture, market, consumer needs, and marketing channels. Therefore, they may be able to help export products to other countries. This hypothesis is reinforced by the evidence that increasing ethnic diversity can help firms penetrate international markets (Hatzigeorgiou and Lodefalk, 2019; Head and Ries, 1998; Parrotta et al., 2016). Furthermore, a link between immigration and macroeconomic export levels has also been identified in the literature (Co et al., 2004; Owusu, 2020). Additionally, because of their knowledge, information, and social networks linked to their origin countries, immigrants and international students can help remove cultural and linguistic barriers and promote trust, potentially reducing trade barriers and costs, and therefore improving international trade (Genc et al., 2012; Aleksynska and Peri, 2014).

- **Hard-working:** According to our employer survey evidence, immigrants and international students are generally perceived by their employers to have a strong work ethic (Fang et al., 2021), an important determinant of their productivity (Peri, 2016; Gu, 2019). Work ethic is reported rather than productivity since they are presumably easier to observe than productivity, which is multifaceted and difficult to measure in many jobs.

While comparisons of the work ethic of immigrants and the native-born are limited, there is evidence that immigrants increase organizational productivity in Canada (Gu et al., 2020) as well as in other countries (Peri, 2012; Ottaviana et al., 2018). Education is a substantial reason for these productivity gains, as immigrants and international students are highly educated and skilled overall (Peri, 2016; Gu et al., 2020). There is both theoretical and empirical evidence which indicates that temporary foreign workers (TFWs) may provide more effort than domestic workers after controlling for other factors, likely due to having fewer backup employment opportunities (Brochu et al., 2020). It is quite possible that this logic would extend to other classes of newcomers as well, including immigrants and international students. Cultural differences (Giorgi and Marsh, 1990; Kang et al., 2017) and the self-selection of more motivated and risk-taking individuals into the immigration system (Borjas et al., 2019) could be other plausible reasons for immigrants potentially having high work ethic on average. A more positive view of the strong work ethic of immigrants would lead to higher probability of hiring immigrants.

• **Lower pay:** There are some reports that show that immigration may have a marginally negative effect on the wages of domestic workers (Picot and Hou, 2014), suggesting that immigrants and international students may accept less pay. An employer strictly interested in minimizing costs might value this attribute. However, employers are also members of broader society and may have concerns if they believe that immigration reduces wages of domestic workers, similar to the “taking jobs away” threat effect, discussed below. Such concerns may reduce the propensity to hire immigrants and international students.

Based on the aforementioned literature on employer attitudes towards immigrant workers, we propose the following hypotheses:

H1a. The more the employer agrees that multiculturalism enhances creativity in the workplace through immigration, the higher the probability that the employer will hire immigrant workers.

H1b. The more the employer agrees that immigration would increase exports, the higher the probability that the employer will hire immigrant workers.

H1c. The more the employer agrees that immigrants are hard workers, the higher the probability that the employer will hire immigrant workers.

H1d. From an economic perspective, the more the employer agrees that immigrants accept lower pay, the higher the probability that the employer will hire immigrant workers. However, some employers who believe immigrant workers are willing to take lower wages and may substitute for local workers will be less likely to hire immigrant workers.

We also propose the following threat factors:

**Taking jobs away:** Immigrants and international students can be perceived as taking jobs away from local workers, especially by those with lower wages and more precarious employment (Wallace and Figueroa, 2012). The question of recent immigrants' impact on the employment of native-born residents and earlier immigrant cohorts is hotly debated (Basten and Siegenthaler, 2019). Whether this employment effect is positive or negative, it has been found to be minimal in either direction (Blau and Mackie, 2017). Still, the perception of a significant and negative effect is evidently held by some and is usually

borne out of a zero-sum concept of employment, referred to as the ‘lump of labour fallacy’ (Lemieux, 2014). The impact of a new labour force entrant ‘taking’ a currently vacant job position is offset to some extent by their resulting consumption indirectly helping create new jobs elsewhere to meet this new demand (Lemieux, 2014). Immigrants are also more likely than native-born Canadians to start a business (Picot and Ostrovsky, 2021), hence creating jobs in a more direct way. Despite the evidence suggesting the threat posed by new immigrants to the employment of others is minimal at most, it may be that those employers who do believe this will have more negative perceptions toward hiring immigrants, not because of their perception of the effects on their own firm but because of their perception of broader societal effects.

**Low retention (leaving Atlantic Canada):** Immigrants and international students have a higher tendency to leave Atlantic Canada compared to those in other Canadian provinces (Sano et al., 2017; van Huystee 2016). In fact, the majority of immigrants to Canada settle in just three cities: Toronto, Vancouver and Montreal (Hou and Bourne, 2006; Sano et al., 2017). The Atlantic region retains only approximately 50% of immigrants five years after their arrival (Statistics Canada, 2021a). Thus, employers may be concerned that these employees are likely to leave the region soon after their arrival, and hence their organization, and lower their firm’s return on investment in human capital.

**Language barriers:** Immigrants and international students often face language barriers, which cause employment problems and make employers hesitant to hire them (Lang, 2021). Having proficient official language skills is an important element of an

individual's human capital. It reflects the effectiveness of individuals' oral and written communication and can directly affect the efficient transfer of personal knowledge and skills to their host country's labour market (Chiswick and Miller, 2009; Zubin, 2007). Proficiency in the official language(s) is also a necessary condition for immigrants to effectively integrate into the Canadian economy and society, as a minimum level of proficiency is necessary to achieve desirable labour market outcomes (Kelly et al., 2010). Better official language skills lead to higher earnings and less issues with unemployment (Kelly et al., 2010). Moreover, the greater the proficiency in official languages is, the stronger the impact it has on return to schooling and pre-immigration labour market experience, as measured by earnings in the labour market (Chiswick and Miller, 2003). In 2016, over 72% of immigrants' mother tongues were not English or French (Statistics Canada, 2017a). A mother tongue other than English or French is associated with substantially worse official language skills, on average (Kelly et al., 2010). Given the importance of language skills in many jobs (Lang, 2021), it follows that the perception of language barriers would cause hesitancy among some employers when considering immigrant job candidates.

**Additional training cost:** The perception that immigrants require additional training is hypothesized to reduce their hiring. Employers may believe that they need to spend more on training immigrants and international students as additional costs can be incurred for language training, cross-cultural training, and bridge training programs for immigrants and international students.

**Unfamiliarity with Canadian workplace norms:** Immigrants and international students are sometimes not familiar with local culture, industry practices, norms, etc. Workplace norms and practices shape the behaviours, attitudes, and beliefs of an organization's members (Hammer et al., 2004). They include implicit rules about commitment, social relations, interaction patterns and work performance in majority organizations (Hammer et al., 2004). It is difficult for newcomers and international students who have no Canadian work experience to understand and align with Canadian workplace norms and practices, which are mainly learned through personal interactions (Lai et al., 2017). Without understanding them, immigrants and international students may find it difficult to fit into Canadian workplaces (Sakamoto et al., 2010). While as discussed cultural differences may foster creativity and innovation in a workforce, differences in both physical and verbal communication styles, and cultural norms, can also bring interpersonal conflict and misunderstanding to the workplace, which can reduce and even overshadow the benefits of cultural diversity (Chua, 2018; Frijns et al., 2016). Even immigrants from English- or French-speaking countries face communication obstacles stemming from cultural differences relevant to the work environment or their individual social-cultural background (Madziva et al., 2016).

**Unreliable credentials:** The quality of education and level of skills of immigrants and international students can vary substantially, from excellent to considerably below par. Furthermore, immigrants' working experiences are embedded into the specific business environments and social contexts of their countries of origin. Lacking information on job applicants, employers use their education and other credentials as a signal of productivity

(Damelang et al., 2020). However, experience and education from immigrants' source countries are likely to be relatively unknown to, and comparatively unrecognized by, employers due to a lack of information and evaluation capacity (Buzdugan and Halli, 2009). The result is that the value placed on foreign credentials by employers tends to be much lower than warranted (Damelang et al., 2020).

Based on the aforementioned literature on employer hiring attitudes towards immigrant workers, we propose the following hypotheses:

H2a: The more the employer agrees that immigrants take jobs away from local workers, the lower the probability that the employer will hire immigrant workers.

H2b: The more the employer agrees that immigrants are likely to have low retention (to leave Atlantic Canada), the lower the probability that the employer will hire immigrant workers.

H2c: The more the employer agrees that immigrants face language barriers, the lower the probability that the employer will hire immigrant workers.

H2d: The more the employer agrees that immigrants increase training costs, the lower the probability that the employer will hire immigrant workers.

H2e: The more the employer agrees that immigrants are not familiar with Canadian organizational culture and workplace practices (i.e., Canadian workplace norms), the lower the probability that the employer will hire immigrant workers.

H2f: The more the employer agrees that immigrants hold unreliable credentials (as education, skill and experience quality can vary from country to country), the lower the probability that the employer will hire immigrant workers.

## DATA AND METHODOLOGY

### ***Data***

Our data is based on a representative survey of 801 employers in Atlantic Canada with a response rate of 38%. A 15-minute qualitative, semi-structured telephone survey of employers across the Atlantic was conducted by Narrative Research (formerly Corporate Research Associates) between September and October 2019, before the outbreak of the COVID-19 pandemic. The survey respondents were owners (36.7%) or senior executives (14.4%) in small or medium sized organizations, and human resource managers (11.7%), or managers who are in charge of hiring (37.2%) in large organizations.

The survey applied stratified random sampling of employers by region (urban or rural), organizational size (small, 5 to 9 employees; medium, 10 to 49 employees; and large, 50 or more employees), and 19 industries to ensure that the sample was representative of the employer population in the Atlantic region. The industry category is based on the North American Industry Classification System (2018) and the sample distribution by 19 industries is provided in Table 2 and is generally consistent with that of Statistics Canada's Business Registry, where our sampling frame is based (Appendix 1).

The top five industries are: Retail trade (24.0%), accommodation and food services (14.5%), health care and social assistance (11.4%), construction (8.1%), and manufacturing (5.6%). The 19 industries are later aggregated into eight broader sectors for the purpose of the analysis: 1) primary sector (agriculture, forestry, fishing and hunting, mining, quarrying, and oil & gas extraction); 2) manufacturing sector; 3) trade sector (wholesale and retail); 4) transportation; 5) construction; 6) professional service sector (health care and social assistance, public administration, finance and insurance, information & cultural industries, arts and entertainment & recreation, real estate rental and leasing; professional, scientific, technical services, and management of companies and enterprises; administrative & support & waste management and remediation services; educational services); 7) accommodation and food sector; and 8) other services.

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Insert Table 2 about here

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### ***Descriptive Analysis***

Approximately 33.4% of the organizations are small, 54.6% of them are medium sized, and 12% are large organizations. Approximately 63.5% of the surveyed organizations are located in urban centres and 36.5% of them are based in rural areas. In terms of sector representation, 84.4% of the surveyed organizations are private sector companies, 2.1% are governmental organizations, and 13.5% are not-for-profit organizations. As for the

immigration status of the owner or CEO of those organizations, 8.6% are permanent residents of Canada, 1.0% are refugees, 1.6% are international students, and 1.5% are temporary foreign workers. Approximately 86.6% of them are Canadian citizens (native-born or foreign-born) as they responded with “None of the above” four immigration categories. The percentages of executives who are newcomers, international students, and temporary foreign workers are much higher than their relative representation in the population of Atlantic Canada (Statistics Canada, 2017b). Approximately 63% of the surveyed employers reported receiving job applications from immigrants or international students, and among them 54% hired such applicants in the past three years.

The results suggest that there have been some changes since Locke and Lynch’s pilot survey in 2004 (Locke and Lynch, 2005). Employers now report a more positive attitude towards hiring immigrants.

### **Summary findings of descriptive analysis**

The survey of employers showed that most employers held positive attitudes towards hiring immigrants. Employers who had hired immigrants and international students in the last three years had even more positive attitudes towards hiring such employees. Among the four provinces, PEI reported the most favourable attitude towards hiring immigrants, which is consistent with the fact that employers in PEI are the most active out of the sample in terms of recruiting immigrants and international students.

The main reasons employers who had hired immigrants and/or international students held overwhelmingly positive attitudes toward them were because they thought that those that they had hired were hard working, skilled, and reliable. Approximately 75% of the employers reported that immigrants and international students were harder working than local workers. A strong majority concur with the statement that multiculturalism brings creativity to the workplace. Despite commonly held perceptions that immigrants take jobs from local workers, most employers surveyed do not believe this is the case. This is consistent with the evidence that immigrants tend to complement local workers in the labour market (Dungan et al., 2013; Hou et al., 2018). On the other hand, employers' greatest concerns when hiring immigrants were low retention, language barriers, and cultural adaption to the Canadian workplace.

Attitudes towards immigrants could vary between employers who have previously hired immigrants and international students and employers who have not. To determine how previous hiring experience influences employers' willingness to hire immigrants in the future, we divided employers into two different groups: employers who had hired immigrants before, and employers who had not. We can see that for employers who had hired immigrants before, 90% reported that they would like to hire immigrants in the next three years, and 75% of those who had not hired immigrants before reported that they would also like to do so (Figure 1). Another 6% of employers who had previously hired immigrants (versus 17% for those who did not hire immigrant workers) reported that they will hire immigrants in the future if they meet the necessary qualifications. Two main

reasons for concern reported by employers who received applications from immigrants but did not hire them were immigrants' qualifications as well as language issues. Employers who had prior experiences with immigrants were more confident with immigrants' capacity and skills. In the survey, no employers with experiences hiring immigrants and international students were reported to be unwilling to do so again in the future, while only 5% of those without prior experiences reported they were unwilling to hire newcomers and international students in the future, likely because many of them don't hire at all.

As expected, given the willingness-to-hire numbers, employers in Atlantic Canada generally held positive perceptions towards hiring newcomers and international students. Table 3 shows that the majority of employers believe that immigrants enhance creativity in the workplace (81%, 69%). The majority of employers also do not think immigrants take jobs away from local workers (84%, 71%). This finding supports the argument that immigrants do not compete directly with local workers (Islam, 2007). In fact, they are complementary to local workers in the labour market, occupying positions that native workers are either unwilling or unable to occupy (Constant, 2014).

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Insert Table 3 about here

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Our survey also shows that employers are more likely to agree than disagree that immigrants can improve a firm's export opportunities. They did not believe immigrants worked for less pay than local workers.

### ***Employers' concerns when hiring immigrants and international students***

When hiring immigrants, employers were mainly concerned about the potential lack of language proficiency, lack of Canadian work experience, and high turnover. Most of them were comfortable with immigrants' credentials and more did not believe that immigrants incurred additional training costs than those who did.

The results also show the dilemma that employers face when hiring immigrants and international students. On one hand, employers may need to provide more training to immigrants and international students in terms of either general language or specific work-related knowledge and skills, which can lead to additional training costs. On the other hand, employers may be reluctant to provide such training because they believe that immigrants and international students would leave within a short period of time, especially in the Atlantic provinces, which have the lowest retention rate of newcomers and international students in Canada (Hahn, 2018; Hum and Simpson, 2003; Barrett et al, 2013).

### ***Empirical Strategy***

To examine the link between employer hiring attitudes towards newcomers and international students and employer hiring outcomes, we estimated the following Probit

regression model on the sub sample of 502 employers who received job applications from immigrants or/and international students:

$$Hire\_Imm_{i,t-3/t} = \beta_0 + \sum \beta_i Attitude_{it} + Z_i Y_{it} + \sum \delta_m Province_{m,i} + \sum \theta_n Industry_{n,i} + \epsilon_{it}$$

where  $Hire\_Imm_{i,t-3/t}$  is the indicator of whether the employer  $i$  hired newcomers and international students or not in the past 3 years.  $Attitude_{it}$  are various attitudes and perceptions (including benefit factors and threat factors) towards hiring newcomers and international students in 2019.  $Y_{it}$  denotes other firm attributes such as firm size (small, medium, large), rural/urban location, and whether or not the firm has hard-to-fill vacancies.  $Province_{m,i}$  is a dummy variable that captures region-specific fixed effects, and takes the value of 1 if firm  $i$  is located in province  $m$ , and 0 otherwise.  $Industry_{n,i}$  is a dummy variable that captures industry-specific fixed effects, and equals 1 if firm  $i$  operates in industry  $n$ , and 0 otherwise.  $\epsilon_{it}$  is the error term.

The responses to particular questions of the 801 employers included in the survey were varied. The regression analysis focuses on the 502 employers who received job applications from immigrants and/or international students. We also conducted regression analysis for determinants of employers' future hiring plans in the next three years based on the full sample of 801 employers. The main results are largely consistent with the selected sample of 502 employers, and will be provided subject to request.

The summary statistics for the subsample of employers who received job applications from immigrants and/or international students are shown in Table 4. Observations for the variables also differed as not all employers responded to each survey question. Out of these employers, 26.1% were from small organizations, 56.8% from medium sized organizations, and 17.1% from large organizations. 71.5% are located in urban areas, versus 28.5% in rural areas. Approximately 86.7% of owners/CEOs of the organizations who had received applications from immigrants and/or international students were Canadian citizens, 13.3% were not.

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Insert Table 4 about here

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## RESULTS AND KEY FINDINGS

### **Results**

We estimated Probit regressions on the sub sample of 502 employers who received job applications from newcomers and international students. Results are shown in Tables 5 and 6. The dependent variable is whether or not an employer hired immigrants in the past three years. Table 5 focuses on benefit factors, whereas Table 6 focuses on threat factors. The tables' results are linked with each hypothesis to integrate the theoretical approach with the empirical results. Detailed results of the marginal effects of all independent variables and control variables, along with the level of statistical significance and p-value for the coefficients are reported.

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Insert Table 5 about here

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Insert Table 6 about here

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The findings tend to be consistent with our proposed benefit-threat model and hypotheses. All of the proposed threat factors significantly influence “employers hired immigrants/international students or not in the past 3 years”. Out of the 12 regressions with just one attitudinal variable included, the attitudinal variable was statistically significant in 9 of the 12.

Based on regression analyses, the significant proposed benefit factors associated with past hiring behaviour are the creativity-enhancing nature of a multicultural workforce (H1a) and immigrants being hard workers (H1c). The benefit factor of “increased export” is positive but insignificant in the standalone equation, but became negative and marginally significant at 10% level in the full model with all other attitude variables, likely because most of the firms do not export and it is difficult for them to attribute export activities to hiring of immigrants. Therefore, H1b is not supported. The benefit factor “less pay” (H1d) was significant as well. However, “less pay” actually significantly reduced the probability of hiring rather than increasing it, therefore H1d was not supported. This suggests that employers in the region generally

disapprove the practice of hiring newcomers with less pay, and this disapproval tends to outweigh their appraisal of the economic benefits they would receive from doing so.

The significant threat factors in the actual hiring models are “taking jobs away” (H2a), “low retention (leave)” (H2b), “language barriers” (H2c), “training” (H2d), and “unreliable credentials” (H2f). The only surprising threat factor is “Unfamiliarity with the Canadian culture and workplace”. It is negative and significant in the standalone equation but turns to be positive and significant in the full model with all attitude variables. That is, when all other employer attitudes are controlled, including language barriers, unfamiliarity with Canadian workplaces becomes less a liability in employer hiring immigrants, rather, likely a diversity indicator that may foster innovation and creativity per our earlier discussion. As such, H2e is not supported in the full model. See Tables 5 and 6 below for further details on the model specifications tested. Model 1 includes all attitudinal variable from the survey responses, the other models include one survey response variable along with control variables such as province, firm size, and industry.

Coefficients for most of the control variables also have expected signs. Factors such as province of the organization, firm size, urban location, and business owners being immigrants seemed to significantly correlate with a firm’s propensity to hire immigrant employees. Employers in PEI, which has a relatively larger share of immigrant population than the other Atlantic provinces (Statistics Canada, 2017b), were more likely than those provinces to hire immigrants and international students, while larger firms are more likely to hire newcomers and international students than small

firms did (as in Adamovic, 2021), and urban-based firms were more likely than rural firms to hire non-locals (consistent with Zahl-Thanem & Haugen, 2019). As expected, firms owned by immigrants were more likely to hire than those owned by locals. Firms having difficulty filling vacancies appear more likely to have hired immigrants, although this variable was not significant in several of the models. Some industry-level trends were observed as well. Transportation sector employers were consistently less likely to hire than those in the manufacturing sector, while accommodation and food sector employers showed statistically significant and higher likelihood of hiring newcomers and international students, relative to the reference group.

## LIMITATIONS

Our survey sample is stratified by organization size, urban or rural location, and the industry of the respondent's organization. This ensures that the sample is representative of Atlantic Canadian employers. The organizational characteristics based on our survey data are largely in line with the firm characteristics in the region from Statistics Canada's Business Registry data, which our sampling frame is derived from (Appendix 1). We recognize that the survey methodology used to collect our data does have some inherent limitations. Response bias is one possible issue, as certain observable or unobservable characteristics may correlate with the response rate. Unfortunately, response bias in business surveys is rarely examined in the literature (Seiler, 2014). To mitigate potential response bias, the survey firm has made the best effort to send multiple reminders to boost the response rate and replace non-responding

organizations with new organizations that have similar characteristics. Unobservable factors which impact response rate are much more difficult to control for. Employers who are contacted and are not interested in a survey's topic are less likely to respond (Groves et al., 2004).

It is also possible that respondents are more likely to report favourable opinions, or that those who do respond are likely to share more positive opinions than they actually hold due to social desirability bias (see Persson and Solevad, 2014). If this is the case, respondents may feel pressure to respond favourably toward immigration in order to follow social conventions and avoid causing offense (An, 2015; Rinken et al., 2021). To reduce this social desirability bias, respondents were assured that data would be anonymized, and best efforts were to be undertaken to protect the confidentiality of respondent identities. Some degree of social desirability bias is probably still present.

## CONCLUSIONS AND POLICY IMPLICATIONS

Finding qualified or skilled workers and retaining them have been primary challenges for Canadian employers in recent years. The primary research questions of this paper are to understand Atlantic Canada employers' experiences and analyse their concerns regarding the hiring of immigrants and international students. Our empirical results help identify the benefits and threats when hiring immigrants and international students and explore possible solutions to fully utilize the human capital of immigrants and international students to fill labour and skill shortages, a strategy which may keep them in the Atlantic provinces for the long term while helping fill labour and skill shortages in the region.

To answer the question of why immigrants and international students are hired, we adapted the societal benefit-threat model of Tartakovsky and Walsh, 2016) to employers by adding new benefit and threat factors reflecting employers' attitudes towards immigrants and international students, which consequently influence employers' hiring decisions. Based on regression analyses, the significant benefit factors are a creativity-enhancing multicultural workforce (H1a), immigrants being hard workers (H1c), and "less pay" (H1d). However, the last factor actually correlated with reduced hiring. This suggests that those employers who think newcomers are being paid less (about 7% of the employers in the survey) may be putting more weight on what they perceive it as a societal threat rather than an economic benefit factor for their own establishment. The significant threat factors are "taking jobs away" (H2a), "low retention (leave)" (H2b), "language barriers" (H2c), "training" (H2d), "unfamiliarity" (H2e), and "unreliable credentials" (H2f).

There are a number of important policy implications stemming from the findings of the paper, which will be discussed in turn. Our empirical results based on Probit models indicate that creativity-enhancing multiculturalism and the perception of immigrants being hard workers are significant benefit factors that increases hiring. Although most employers report positive attitudes towards immigrants and international students, when the perceptions are harboured of immigrants taking jobs, receiving lower pay, having low retention rates, creating language barriers, increasing training costs, being unfamiliar with Canadian workplace norms, and holding unreliable credentials, they are significant threat factors that reduce hiring. This highlights the importance of language and cross-cultural training, foreign credential recognition, and immigrant retention as important policy

solutions to maximize the innovation and productivity benefits and minimize the communication and transaction costs of hiring newcomers and international students in Atlantic Canada. Language training is particularly useful for the economic, social, and cultural integration of immigrants, and it also improves immigrant employee retention. Intercultural training for both immigrants and employers may facilitate workplace communication and enhance immigrant productivity and organizational performance.

It is clear from the survey results that small- to medium-sized businesses and businesses located in rural areas are less likely to hire immigrants than their larger-sized and urban counterparts. Our findings seem to indicate that factors other than attitudes toward newcomers are relatively more important in the hiring decision for some employer characteristics (e.g., rural employers). One hypothesis to explain this is that rural area organizations as well as those in small and medium sized organizations, for example, may lack potential immigrant job candidates and/or the necessary information to assess such candidates. There may be societal benefits to programs that demonstrate the potential benefits of hiring immigrants and international students should be demonstrated to such employers.

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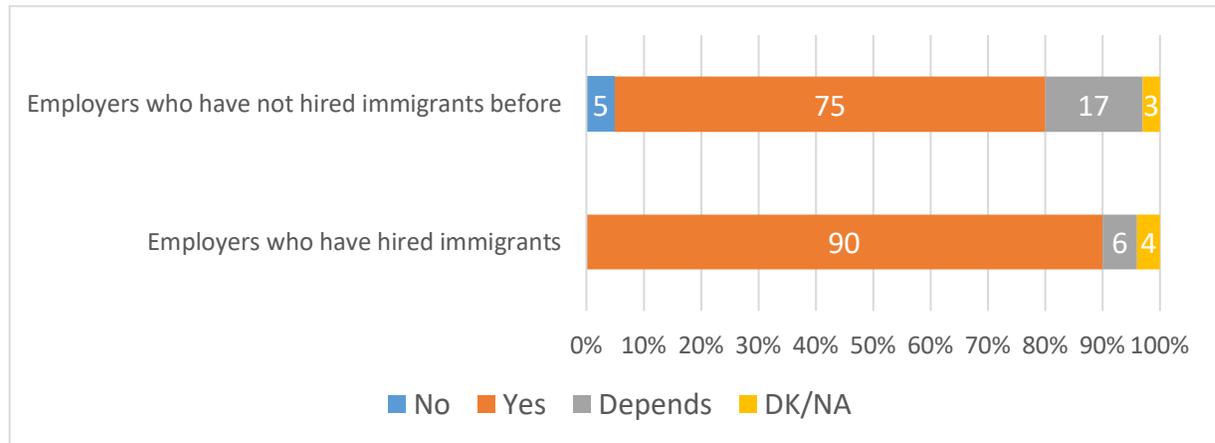
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**Figure 1: Future plans for hiring immigrants (Yes/No)**



**Table 1: The proposed benefit-threat model for immigrant hiring decisions**

<b>Benefits</b>	<b>Definition</b>
Creativity-enhancing Multiculturalism	Immigrants and international students can bring multiple cultural backgrounds and viewpoints to the workplace, enhancing creativity in the process.
Increased exports	Immigrants and international students know about their home country's market, consumer needs, marketing channels, business cultures, etc. Therefore, they are likely to help with exporting products to other countries.
Stronger work ethic	Immigrants and international students are usually harder working employees than local workers.
Less pay	Immigrants and international students are willing to accept less pay compared to local workers.
<b>Threats</b>	<b>Definition</b>
Taking jobs away	Immigrants and international students can be perceived as taking jobs away from local workers.
Low retention (leaving Atlantic Canada)	Immigrants and international students have a tendency to leave the Atlantic provinces for large urban centres (e.g., Toronto, Vancouver and Montreal).

Language barriers	Immigrants and international students usually face language barriers, which can make employers hesitant to hire them.
Higher training costs	Employers may need to spend more resources (time and money) on training immigrants and international students as they may lack language skills and are not familiar with industry practices, norms, culture, etc.
Unfamiliarity with Canadian workplace norms	Immigrants and international students are sometimes not familiar with local culture, industry practices, norms, etc., which makes employers unlikely to hire them.
Unreliable credentials	Immigrants and international students are sometimes perceived to hold unreliable credentials and skill sets, which makes employers hesitant to hire them.

**Table 2: The industry distribution of employers interviewed**

<b>Industry</b>	<b>Survey respondents, N (%)</b>
Retail Trade	192 (24.0)
Accommodation and Food Services	116 (14.5)
Health Care and Social Assistance	91 (11.4)
Construction	35 (8.1)
Other Services	61 (7.6)
Manufacturing	45 (5.6)
Professional, Scientific, and Technical Services	37 (4.6)
Transportation and Warehousing	32 (4.0)
Wholesale Trade	27 (3.4)
Administrative Support, Waste Management, Remediation Services	20 (2.5)
Arts, Entertainment and Recreation	20 (2.5)
Finance and Insurance	18 (2.3)
Agriculture, Forestry, Fishing and Hunting	16 (2.0)
Educational Services	16 (2.0)
Information and Cultural Industries	14 (1.8)
Public Administration	10 (1.3)
Real Estate Rental and Leasing	9 (1.1)
Mining, Quarrying, and Oil & Gas Extraction	8 (1.0)
Management of Companies and Enterprises	4 (0.5)
Total	801 (100.0)

**Table 3: Employer attitudes and perceptions regarding hiring immigrants and international students between employers who have and have not hired such applicants (%)**

Employer hiring attitudes	Employers who have hired immigrants and/or international students		Employers who have <u>not</u> hired immigrants and international students	
	Disagree & Strongly disagree	Agree & Strongly agree	Disagree & Strongly disagree	Agree & Strongly agree
A multicultural workforce enhances creativity in the workplace	5	81	7	69
Immigrants will not take jobs away from locals	7	84	9	71
Immigrants will work for less pay than local workers	53	14	30	21
Immigrants are harder working than local workers	21	40	20	25
Having employees from other countries can improve our firm's export opportunities	18	30	21	33
Language differences make it difficult to communicate	31	31	17	48
Immigrants are unfamiliar with Canadian business and workplace practices	35	23	22	23
Immigrants will leave for another part of the country within a short period of time	33	26	29	28
Hiring newcomers will require incurring additional training costs	61	15	36	28
Immigrants have unreliable credentials	72	6	47	8

**Table 4: Summary statistics for Employers Who Received Applications from Immigrants and/or International Students**

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Hired immigrants and/or international students in the last 3 years (0=hired at least one such worker; 1=did not hire any such workers)	496	0.536	0.499	0	1
Willingness to hire immigrants in the next 3 years (0=unwilling; 1=willing)	488	0.840	0.367	0	1
Increased multiculturalism in the workplace enhances creativity (1 strongly disagree, 5 strongly agree)	481	4.133	0.955	1	5
Increase exports (1 strongly disagree, 5 strongly agree)	389	3.154	1.228	1	5
Likely to leave the province soon (1 strongly disagree, 5 strongly agree)	435	3.046	1.139	1	5
Earn less pay than locals (1 strongly disagree, 5 strongly agree)	412	2.398	1.315	1	5
Have language barriers (1 strongly disagree, 5 strongly agree)	486	3.265	1.137	1	5
Increase training costs (1 strongly disagree, 5 strongly agree)	473	2.493	1.254	1	5
Hold unreliable credentials (1 strongly disagree, 5 strongly agree)	427	2.030	1.022	1	5
Take jobs away from locals (1 strongly disagree, 5 strongly agree)	484	1.705	1.046	1	5
Hard to fill job vacancies in the past three years	498	0.588	0.493	0	1
Business owner is a Canadian citizen	502	0.867	0.340	0	1
Business owner is not a Canadian citizen	502	0.133	0.340	0	1
Small size organization	502	0.261	0.440	0	1
Medium size organization	502	0.568	0.496	0	1
Large size organization	502	0.171	0.377	0	1
Urban location	502	0.715	0.452	0	1
Rural location	502	0.285	0.452	0	1
Prince Edward Island	502	0.155	0.363	0	1
Newfoundland and Labrador	502	0.359	0.480	0	1
New Brunswick	502	0.239	0.427	0	1
Nova Scotia	502	0.247	0.432	0	1
Manufacturing sector	502	0.062	0.241	0	1
Primary sector	502	0.026	0.159	0	1
Trade sector	502	0.245	0.431	0	1
Transportation sector	502	0.040	0.196	0	1

Construction sector	502	0.060	0.237	0	1
Professional services sector	502	0.329	0.470	0	1
Accommodation and food services sector	502	0.181	0.386	0	1
Other services sector	502	0.058	0.234	0	1

**Table 5: Probit regression models of whether employers hired immigrants and/or international students in the last 3 years as the dependent variable and benefit/threat factors as independent variable(s)**

	Probit 1 (N = 301)	Probit 2 (N = 471)	Probit 3 (N = 383)	Probit 4 (N = 431)
Ind. Variables	dF/dx (p-value)	dF/dx (p-value)	dF/dx (p-value)	dF/dx (p-value)
Increased multiculturalism in the workplace enhances creativity	0.0656* (0.085)	0.0513* (0.053)		
Increase exports	-0.0561* (0.075)		0.0003 (0.990)	
Are more hard-working than locals	0.0676** (0.030)			0.0179 (0.402)
Likely to leave the province soon	-0.0413 (0.207)			
Earn less pay than locals	-0.0602** (0.029)			
Have language barriers	-0.0866** (0.015)			
Increase training costs	-0.0718** (0.028)			
Are unfamiliar with the Canadian culture and workplace	0.0831** (0.034)			
Hold unreliable credentials	-0.0990** (0.011)			
Take jobs away from locals	0.0195 (0.623)			
Hard to fill job vacancies in the past three years	0.1132 (0.119)	0.0644 (0.208)	0.0436 (0.443)	0.0932* (0.082)
[Business owner is a Canadian citizen]				
Business owner is not a Canadian citizen	0.1873** (0.043)	0.1669** (0.022)	0.2274*** (0.005)	0.1878** (0.010)
[Small size organization]				
Medium size organization	0.0353 (0.643)	0.0787 (0.173)	0.0584 (0.359)	0.0549 (0.363)
Large size organization	0.2372** (0.016)	0.3641*** (0.000)	0.3656*** (0.000)	0.3615*** (0.000)
[Urban location]				
Rural location	-0.2493*** (0.001)	-0.2061*** (0.000)	-0.2123*** (0.001)	-0.2128*** (0.000)
[Prince Edward Island]				
Newfoundland and Labrador	-0.2572** (0.015)	-0.2567*** (0.001)	-0.2655*** (0.003)	-0.2004** (0.013)
New Brunswick	-0.1816 (0.123)	-0.2050** (0.015)	-0.2805*** (0.004)	-0.1728** (0.048)
Nova Scotia	-0.1906* (0.083)	-0.1977** (0.018)	-0.1806* (0.054)	-0.1612* (0.062)

[Manufacturing sector]				
Primary sector	0.2101 (0.244)	-0.0251 (0.893)	0.0044 (0.981)	-0.0602 (0.752)
Trade sector	-0.0729 (0.591)	-0.0721 (0.508)	-0.0405 (0.724)	-0.0854 (0.442)
Transportation sector	-0.2521 (0.358)	-0.3140** (0.049)	-0.3695** (0.032)	-0.4376** (0.012)
Construction sector	0.1159 (0.524)	-0.0885 (0.529)	0.0210 (0.890)	-0.0764 (0.611)
Professional services sector	0.0448 (0.730)	-0.0736 (0.486)	-0.0148 (0.895)	-0.0240 (0.824)
Accommodation and food services sector	0.2904** (0.022)	0.1464 (0.180)	0.2146* (0.061)	0.1445 (0.191)
Other services sector	0.0632 (0.737)	0.0807 (0.567)	0.1633 (0.317)	0.0877 (0.534)

**Note:** \*\*\*p<0.01, \*\*p<0.05, \*p<0.1

**Table 6: Probit regression models of whether employers hired immigrants and/or international students in the last 3 years as the dependent variable and threat factors as independent variable(s)**

	Probit 5 (N = 427)	Probit 6 (N = 405)	Probit 7 (N = 477)	Probit 8 (N = 464)	Probit 9 (N = 438)	Probit 10 (N = 419)	Probit 11 (N = 474)
Ind. Variables	dF/dx (p-value)	dF/dx (p-value)					
Likely to leave the province soon	-0.0863*** (0.000)						
Earn less pay than locals		-0.0729*** (0.001)					
Have language Barriers			-0.1175*** (0.000)				
Increase training costs				-0.0935*** (0.000)			
Are unfamiliar with the Canadian culture and workplace					-0.0600** (0.016)		
Hold unreliable credentials						-0.1189*** (0.000)	
Take jobs from locals							-0.0693*** (0.003)
Hard to fill job vacancies in the past three years	0.0841 (0.117)	0.1307** (0.019)	0.0916* (0.076)	0.1040** (0.046)	0.0735 (0.157)	0.0904 (0.100)	0.0414 (0.417)
[Business owner is a Canadian citizen]							
Business owner is not a Canadian citizen	0.1719** (0.021)	0.1615** (0.035)	0.1556** (0.039)	0.1571** (0.036)	0.1488** (0.038)	0.1879** (0.012)	0.1325* (0.069)
[Small size organization]							
Medium size organization	0.0562 (0.360)	0.0489 (0.435)	0.0886 (0.126)	0.0831 (0.152)	0.0623 (0.295)	0.0809 (0.187)	0.0717 (0.210)
Large size organization	0.3400*** (0.000)	0.3329*** (0.000)	0.3594*** (0.000)	0.3684*** (0.000)	0.3268*** (0.000)	0.3211*** (0.000)	0.3784*** (0.000)
[Urban location]							
Rural location	-0.1821*** (0.002)	-0.2340*** (0.000)	-0.2110*** (0.000)	-0.1992*** (0.000)	-0.2147*** (0.000)	-0.2412*** (0.000)	-0.1807*** (0.001)
[Prince Edward Island]							
Newfoundland and Labrador	-0.1989** (0.013)	-0.1728** (0.041)	-0.2134*** (0.006)	-0.2069*** (0.009)	-0.2052** (0.010)	-0.1830** (0.024)	-0.2075*** (0.008)
New Brunswick	-0.1591* (0.068)	-0.1456 (0.112)	-0.1699** (0.042)	-0.2094** (0.013)	-0.1572* (0.065)	-0.1517* (0.085)	-0.1721** (0.040)
Nova Scotia	-0.1897** (0.026)	-0.1678* (0.062)	-0.1473* (0.076)	-0.1822** (0.030)	-0.1384 (0.101)	-0.1504* (0.080)	-0.1638** (0.048)
[Manufacturing sector]							

Primary sector	0.0073 (0.969)	0.0792 (0.688)	0.0546 (0.775)	-0.0027 (0.989)	-0.0126 (0.946)	0.0572 (0.758)	0.0018 (0.992)
Trade sector	-0.0208 (0.853)	0.0078 (0.946)	-0.0732 (0.515)	-0.0622 (0.572)	-0.0369 (0.734)	-0.0569 (0.607)	-0.0865 (0.432)
Transportation Sector	-0.3634* (0.050)	-0.3284* (0.060)	-0.2861* (0.076)	-0.3188** (0.049)	-0.3425** (0.039)	-0.3156* (0.078)	-0.3836** (0.013)
Construction Sector	-0.0309 (0.837)	-0.0267 (0.862)	-0.1521 (0.285)	-0.1277 (0.376)	-0.0600 (0.677)	-0.1148 (0.432)	-0.1696 (0.225)
Professional services sector	0.0100 (0.927)	0.0167 (0.883)	-0.0858 (0.437)	-0.0640 (0.551)	-0.0321 (0.762)	-0.0273 (0.799)	-0.0594 (0.582)
Accommodation and food services sector	0.2406** (0.029)	0.2143* (0.061)	0.1743 (0.126)	0.1604 (0.147)	0.1894* (0.080)	0.2006* (0.068)	0.1654 (0.138)
Other services Sector	0.1066 (0.452)	0.1354 (0.396)	0.0350 (0.810)	0.0624 (0.667)	0.0717 (0.616)	0.0576 (0.707)	0.0390 (0.787)

**Note:** \*\*\*p<0.01, \*\*p<0.05, \*p<0.1

**Appendix 1. The comparison of distribution of firms by industry in Atlantic Provinces between the December 2018 Business Registry and 2019 Employer Survey**

Newfoundland and Labrador			
<i>(Percentages may not sum exactly to 100%, owing to rounding)</i>			
	Dec 2018 Business Register	Surveys Completed	
		(n=)	(%)
Industry [NAICS]			
Retail trade [44-45]	22%	81	27%
Transportation and warehousing [48-49]	4%	9	3%
Information and cultural industries [51]	1%	3	1%
Finance and insurance [52]	3%	5	2%
Real estate and rental and leasing [53]	2%	3	1%
Professional, scientific and technical services [54]	5%	15	5%
Management of companies and enterprises [55]	1%	2	1%
Administrative and support, waste management and remediation services [56]	3%	9	3%
Educational services [61]	1%	5	2%
Health care and social assistance [62]	8%	32	11%
Arts, entertainment and recreation [71]	2%	7	2%
Accommodation and food services [72]	11%	48	16%
Other services (except public administration) [81]	9%	28	9%
Public administration [91]	4%	5	2%
Agriculture, forestry, fishing and hunting [11]	2%	1	0%
Mining, quarrying, and oil and gas extraction [21]	1%	6	2%
Utilities [22]	0%	0	0%
Construction [23]	12%	22	7%
Manufacturing [31-33]	3%	13	4%
Wholesale trade [41-42]	5%	7	2%

Prince Edward Island			
<i>(Percentages may not sum exactly to 100%, owing to rounding)</i>			
	Dec 2018 Business Register	Surveys Completed	
		(n=)	(%)
<b>Industry [NAICS]</b>			
Retail trade [44-45]	17%	28	28%
Transportation and warehousing [48-49]	3%	5	5%
Information and cultural industries [51]	1%	3	3%
Finance and insurance [52]	3%	2	2%
Real estate and rental and leasing [53]	2%	2	2%
Professional, scientific and technical services [54]	4%	1	1%
Management of companies and enterprises [55]	1%	2	2%
Administrative and support, waste management and remediation services [56]	3%	0	0%
Educational services [61]	1%	2	2%
Health care and social assistance [62]	7%	9	9%
Arts, entertainment and recreation [71]	3%	3	3%
Accommodation and food services [72]	12%	16	16%
Other services (except public administration) [81]	8%	3	3%
Public administration [91]	7%	1	1%
Agriculture, forestry, fishing and hunting [11]	9%	8	8%
Mining, quarrying, and oil and gas extraction [21]	0%	0	0%
Utilities [22]	0%	0	0%
Construction [23]	10%	4	4%
Manufacturing [31-33]	5%	7	7%
Wholesale trade [41-42]	4%	4	4%

<b>Nova Scotia</b>			
<i>(Percentages may not sum exactly to 100%, owing to rounding)</i>			
	Dec 2018 Business Register	Surveys Completed	
		(n=)	(%)
<b>Industry [NAICS]</b>			
Retail trade [44-45]	20%	39	20%
Transportation and warehousing [48-49]	3%	10	5%
Information and cultural industries [51]	2%	5	3%
Finance and insurance [52]	4%	7	4%
Real estate and rental and leasing [53]	3%	1	1%
Professional, scientific and technical services [54]	6%	10	5%
Management of companies and enterprises [55]	1%	0	0%
Administrative and support, waste management and remediation services [56]	4%	7	4%
Educational services [61]	1%	6	3%
Health care and social assistance [62]	9%	22	11%
Arts, entertainment and recreation [71]	2%	7	4%
Accommodation and food services [72]	11%	27	14%
Other services (except public administration) [81]	7%	18	9%
Public administration [91]	1%	0	0%
Agriculture, forestry, fishing and hunting [11]	4%	4	2%
Mining, quarrying, and oil and gas extraction [21]	0%	0	0%
Utilities [22]	0%	0	0%
Construction [23]	11%	16	8%
Manufacturing [31-33]	5%	13	7%
Wholesale trade [41-42]	5%	8	4%

<b>New Brunswick</b>			
<i>(Percentages may not sum exactly to 100%, owing to rounding)</i>			
	Dec 2018 Business Register	Surveys Completed	
		(n=)	(%)
<b>Industry [NAICS]</b>			
Retail trade [44-45]	19%	44	22%
Transportation and warehousing [48-49]	4%	8	4%
Information and cultural industries [51]	2%	3	2%
Finance and insurance [52]	4%	4	2%
Real estate and rental and leasing [53]	2%	3	2%
Professional, scientific and technical services [54]	4%	11	6%
Management of companies and enterprises [55]	1%	0	0%
Administrative and support, waste management and remediation services [56]	4%	4	2%
Educational services [61]	1%	3	2%
Health care and social assistance [62]	11%	28	14%
Arts, entertainment and recreation [71]	2%	3	2%
Accommodation and food services [72]	11%	25	13%
Other services (except public administration) [81]	7%	12	6%
Public administration [91]	2%	4	2%
Agriculture, forestry, fishing and hunting [11]	6%	3	2%
Mining, quarrying, and oil and gas extraction [21]	0%	2	1%
Utilities [22]	0%	0	0%
Construction [23]	11%	23	12%
Manufacturing [31-33]	5%	12	6%
Wholesale trade [41-42]	5%	8	4%