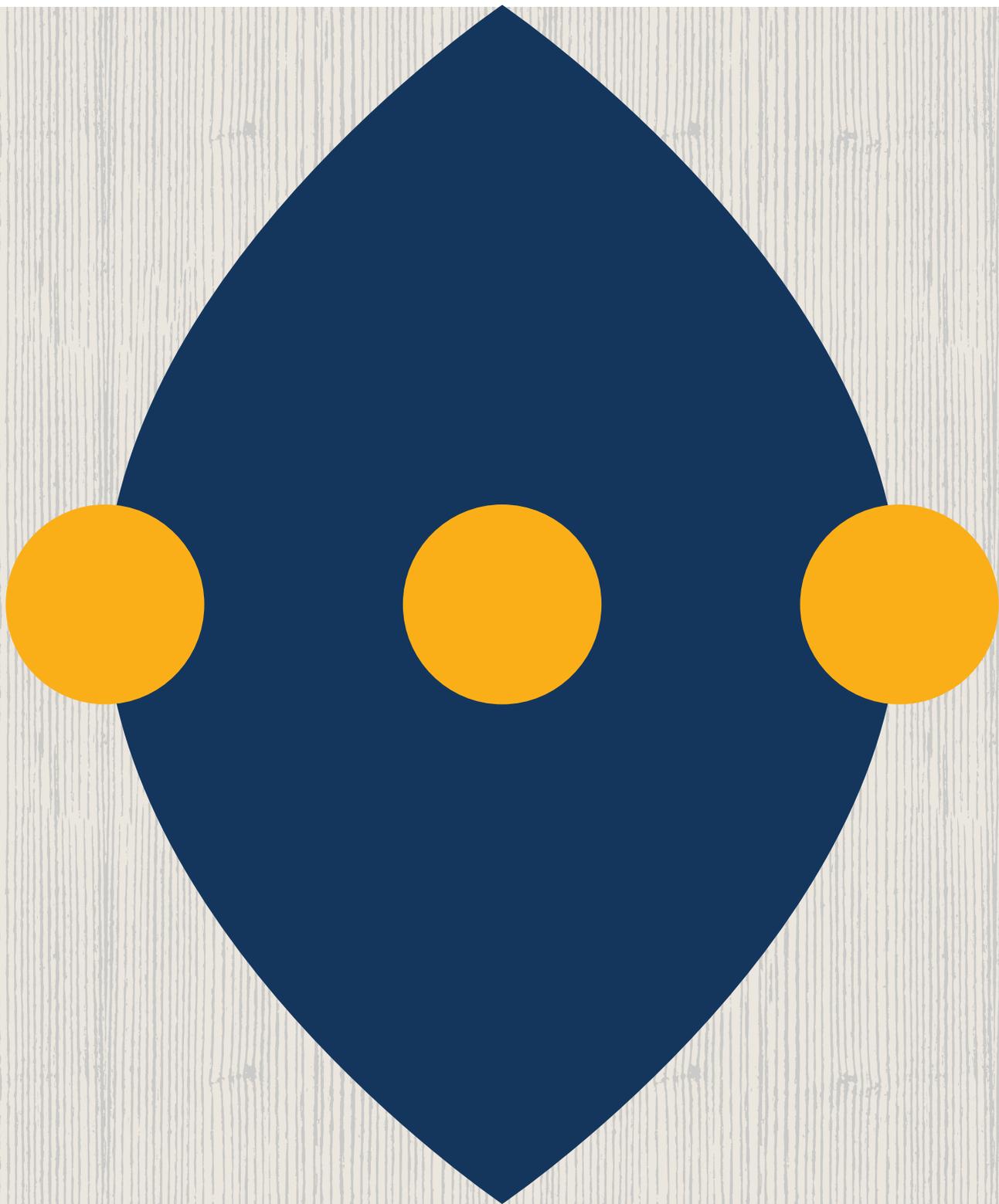


# A Changing Skills in Landscape

A BROOKFIELD INSTITUTE FOR INNOVATION +  
ENTREPRENEURSHIP BRIEF

MARCH 2021



## PARTNERS

This work was made possible by our partners:



### CANADIAN CHAMBER OF COMMERCE

We help build the businesses that support our families, our communities and our country. We do this by influencing government policy, by providing the services your business needs and by connecting you to information you can use, to opportunities and to a network of local chambers, businesses and decision-makers and peers from across the country, in every sector of the economy and at all levels of government, as well as internationally. We are unapologetic in our support for business and the vital role it plays in building and sustaining our great nation.

[info@chamber.ca](mailto:info@chamber.ca) | [@CdnChamberofCom](https://twitter.com/CdnChamberofCom)



### PALETTE

Palette is a national non-profit organization mandated to support fast-growing companies find the talent they need by connecting them with workers experiencing job transitions due to automation. We run retraining and upskilling programs as well as provide opportunities to work in a paid placements at fast-growing companies.

[hello@paletteskills.org](mailto:hello@paletteskills.org) | [@paletteskills](https://twitter.com/paletteskills)



### BROOKFIELD INSTITUTE

The Brookfield Institute for Innovation + Entrepreneurship (BII+E) is an independent, nonpartisan policy institute, housed at Ryerson University. We transform bold ideas into real-world solutions designed to help Canada navigate the complex forces and astounding possibilities of the innovation economy.

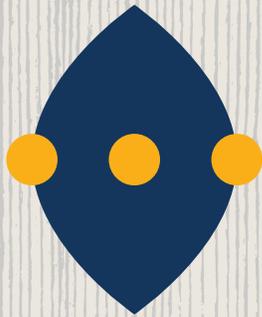
For more information, visit [brookfieldinstitute.ca](http://brookfieldinstitute.ca)

20 Dundas St. W, Suite 921  
Toronto, ON M5G 2C2

[@BrookfieldIIE](https://twitter.com/BrookfieldIIE)

[The Brookfield Institute  
for Innovation +  
Entrepreneurship](https://www.brookfieldinstitute.ca)





## A Changing Skills Landscape

**THE COVID-19 PANDEMIC** has had a massive impact on Canada's labour market. Millions of workers suffered job losses early on, and cyclical changes to public health restrictions have led to corresponding employment gains and losses and to rapid adaptation of business operations.

Amidst this continued uncertainty, businesses are having to make many decisions surrounding the size of their workforce as well as investments in new technologies and business strategies that will ultimately impact the demand for skills across the economy. While some of these changes are likely to be temporary, others may permanently impact the landscape for skills across Canada.

Using largely the latest wave of Statistics Canada's Canadian Survey on Business Conditions (CSBC),<sup>1</sup> which surveyed over 15,400 businesses between mid-January to mid-February 2021, this brief will closely examine business intentions regarding their workforce and shifting skills demands as

they continue to navigate an uncertain business environment and make critical investments for the future.

## Key Findings

 In the first quarter of 2021, a greater proportion of Canadian businesses anticipated decreasing their number of employees over the next three months than expected to increase their number of employees.

 Larger businesses are more likely to anticipate increasing their number of employees over the next three months and businesses in industries particularly affected by public health restrictions, such as accommodation and food services, are much more likely to anticipate reducing their workforce over the next three months.

 As businesses began reopening in February 2021, many reported difficulties finding workers to fill positions. In the first quarter of 2021, one fifth of Canadian businesses reported that labour shortages will be an obstacle over the next three months. This rises to 32 percent for businesses with 20 to 99 as well as 100+ employees.

 As businesses make critical investments into the future, including adopting new technology, skills demands appear to be evolving. In the first quarter of 2021, 9 percent of businesses across Canada stated that over the next year they plan to hire staff with skills or knowledge that their current employees lack. This rises to 15 percent of businesses in wholesale trade and 14 percent of businesses in manufacturing, two industries that reported high levels of technology adoption and automation. Other industries reporting a similar trend (between 9 and 13 percent of firms) include professional, scientific, and technical services, finance and insurance, and information and cultural industries.



For the most part, plans to hire staff with new skills or knowledge, whether technical, managerial, or other skills, increases with firm size.



A larger proportion of businesses have plans to train existing employees for new skills compared to those planning to hire new employees with different skill sets, suggesting a stronger inclination towards upskilling the existing workforce rather than looking elsewhere for new talent.

## Context

Since the onset of the pandemic, businesses across Canada have been forced to reduce staff or close entirely. Between March and April 2020, 5.5 million workers across Canada were directly impacted by the COVID-19 pandemic, including 3 million who lost their jobs.<sup>2</sup>

After the initial shock, many businesses began to adapt. Those that could do so embraced remote work and online sales; others reduced business hours and sought government funding. However, following an easing of restrictions midway through last year, and a corresponding improvement in economic activity, public health restrictions imposed in December 2020 again precipitated an employment decline of 213,000 workers in January 2021. These recent losses were entirely in part-time work, and primarily concentrated in Quebec and Ontario's retail sectors, where significant restrictions were put in place on non-essential shopping. Other sectors, such as accommodation and food services and information, culture, and recreation, were also hit hard by the restrictions.<sup>3</sup>

In early February 2021, many of the December 2020 restrictions were eased to varying degrees. As a result, employment increased by 259,000 in February 2021. These gains were mostly driven by the industries and regions that had been most affected by the January 2020 losses. Employment in a number of industries less affected by provincial lockdowns and more easily able to adapt to remote working environments—including finance, insurance, and real estate, public administration, educational services and professional, scientific, and technical services—exceeded their pre-COVID levels in February 2021.<sup>4</sup>

## Businesses' employment expectations

Reflecting various provincial shutdowns and continued uncertainty surrounding the COVID-19 pandemic, a greater proportion of businesses across Canada anticipated decreasing their number of employees over the next three months (11.7%) than expected to increase the number (8.6%), over the first quarter of 2021 (see figure 1).

Business expectations varied depending on ownership. Compared to the rest of the economy, women-owned businesses were more likely to anticipate increasing (9.6%) as well as decreasing (12%) their number of employees. Businesses owned by visible minorities also anticipated decreasing their number of employees to a much greater extent (16%) than the rest of the economy.

These expectations also vary from industry to industry. In accommodation and food services, an industry that has been among the most impacted by provincial shutdowns, 30 percent of businesses anticipated reducing their number of employees over the next three months. This is followed by arts, entertainment, and recreation, another industry impacted by shutdowns, where 18 percent of businesses anticipate reducing their workforce over the next three months. However, at 14 percent, comparatively less businesses in retail trade anticipate reducing employees, despite this being one of the most heavily impacted industries throughout the pandemic. This may indicate that businesses in retail have already downsized. Twelve percent of businesses in healthcare and social assistance anticipate increasing their number of employees over the next three months, which may reflect pandemic-related expansion (see figure 1).

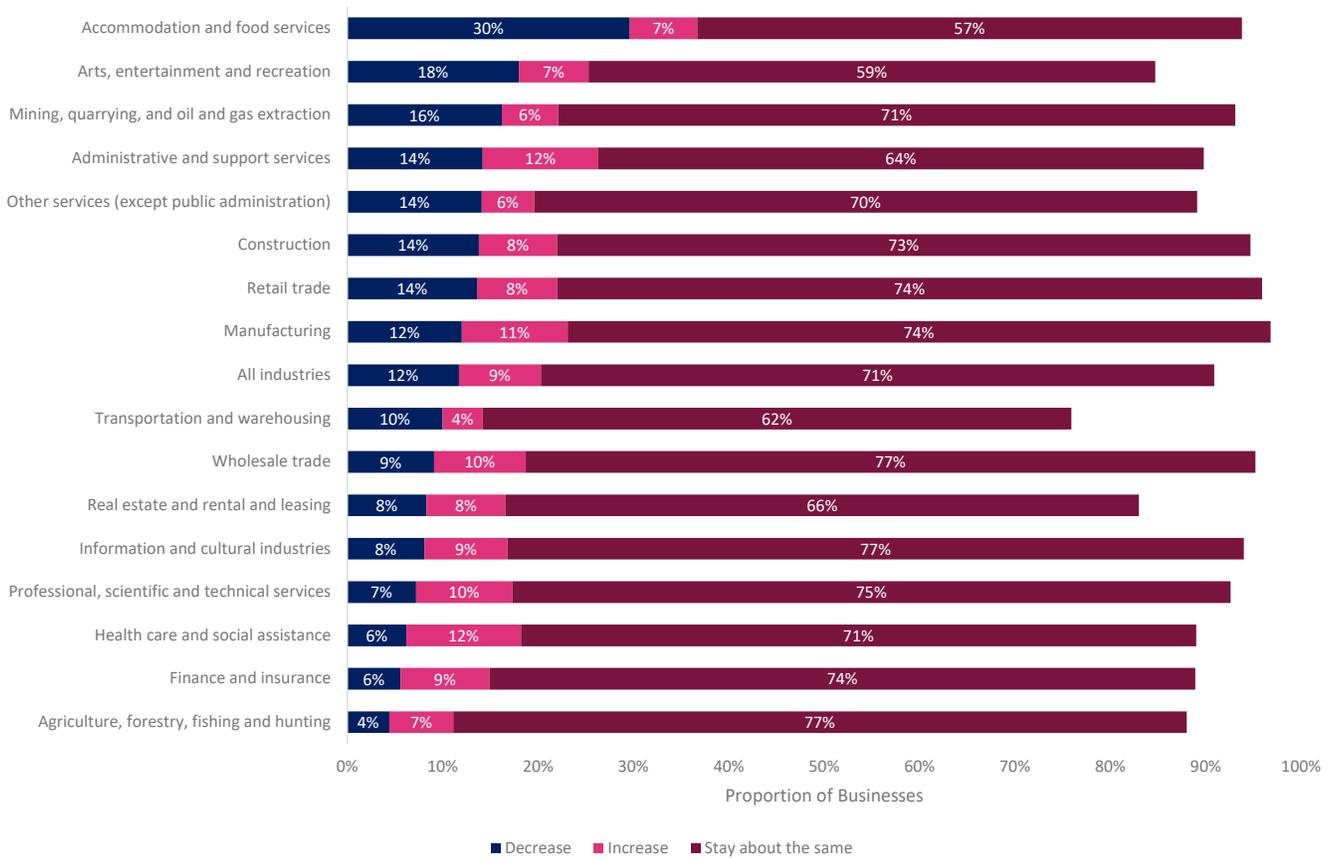
Consistent with the January 2021 labour force figures, which showed that employment losses were most pronounced in establishments with less than ninety-nine employees, businesses with five to ninety-nine employees are most likely to anticipate a decrease in employment over the next three months. As firm size increases, businesses were more likely to report intentions to grow their workforce over the next three months (see figure 2).

Ontario and Newfoundland and Labrador are home to the highest proportion of businesses that expected to decrease their number of employees over the next three months. This likely reflects the public health measures enacted by these provinces. In Quebec, despite public health restrictions, a comparatively lower proportion

of businesses (10 percent) anticipated reducing their workforce, and the same proportion of businesses in the province anticipated increasing their workforce. The territories have the highest proportion of businesses that reported plans to increase their workforce (see figure 3).

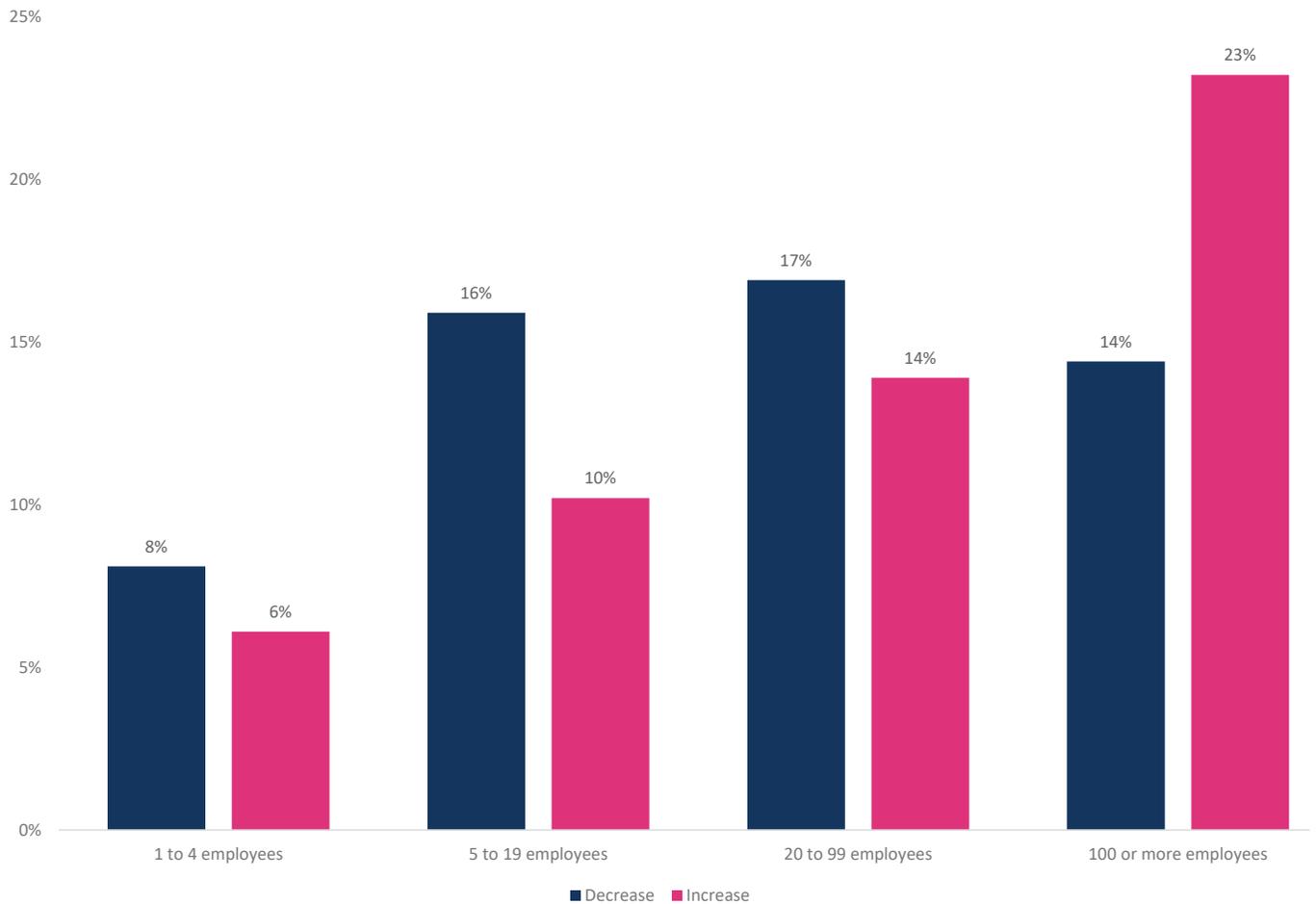
**Figure 1**

Businesses' Expectations about the Number of Employees over the Next Three Months; Canada, First Quarter 2021



## Figure 2

Businesses' Expectations about the Number of Employees over the Next Three Months; Canada, First Quarter 2021



## Businesses' perception of labour shortages

As public health restrictions eased and businesses began to reopen, many of them reported challenges finding candidates to fill roles. In the first quarter of 2021, one fifth of Canadian businesses reported that they expect labour shortages will be an obstacle over the next three months. Labour shortages occur when there is a lack of candidates who meet the minimum qualifications for a particular job in the moment and at the rate of pay employers are offering.

Many of the industries reporting high impact from labour shortages are those particularly susceptible to various public health measures, such as accommodation and food services and retail. As businesses in these industries began reopening it is possible that some faced challenges in finding candidates with the right skills or qualifications. However, reported labour shortages likely also reflect the fact that for many individuals the wages and/or hours on offer do not outweigh the potential health risks, and may also not exceed individual government benefits.<sup>5</sup>

Nearly 30 percent of businesses in healthcare and social assistance also reported labour shortages as an obstacle over the next three months. In addition to the challenges associated with finding workers after reopening, reported shortages in this industry may also reflect increased demand for healthcare workers across the entirety of the system, which is likely to increase amidst the vaccine rollout.

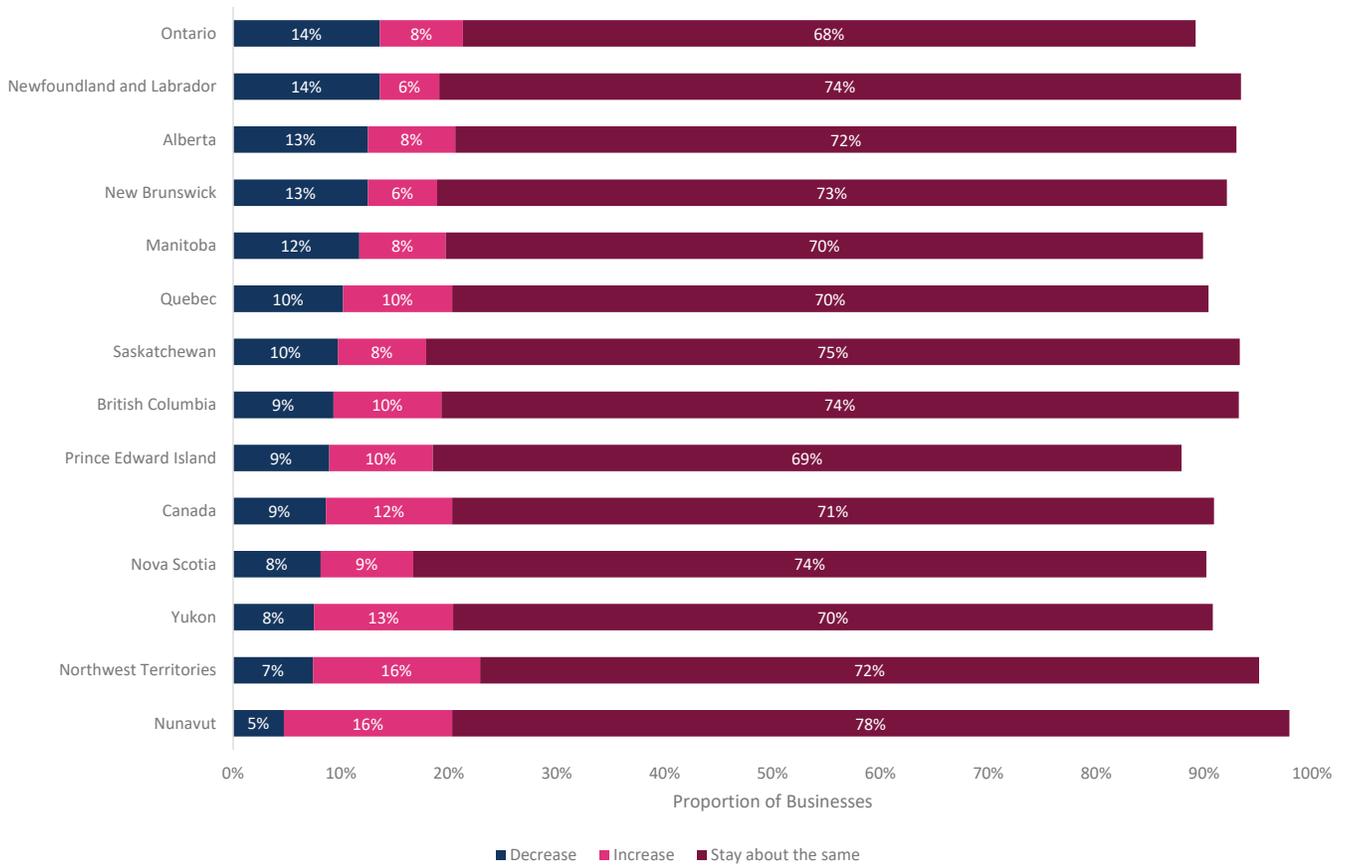
In construction, the field where the highest proportion of businesses reported labour shortages as an obstacle, this echoes business concerns that predated the pandemic, although the actual extent of reported shortages in the sector is often debated.<sup>6</sup> As economic activity in the construction industry rebounds and employment approaches pre-pandemic levels,<sup>7</sup> businesses in these industries may continue to face similar challenges getting people to come back to work.

In industries where labour shortages are seen as a challenge, firms also name recruiting and retaining employees as a challenge. However, in some industries, such as finance and insurance; arts, entertainment, and recreation; wholesale trade; and information and cultural industries, a much greater proportion of firms view recruiting and retaining employees as a bigger obstacle than labour shortages, which may reflect competition over talent.

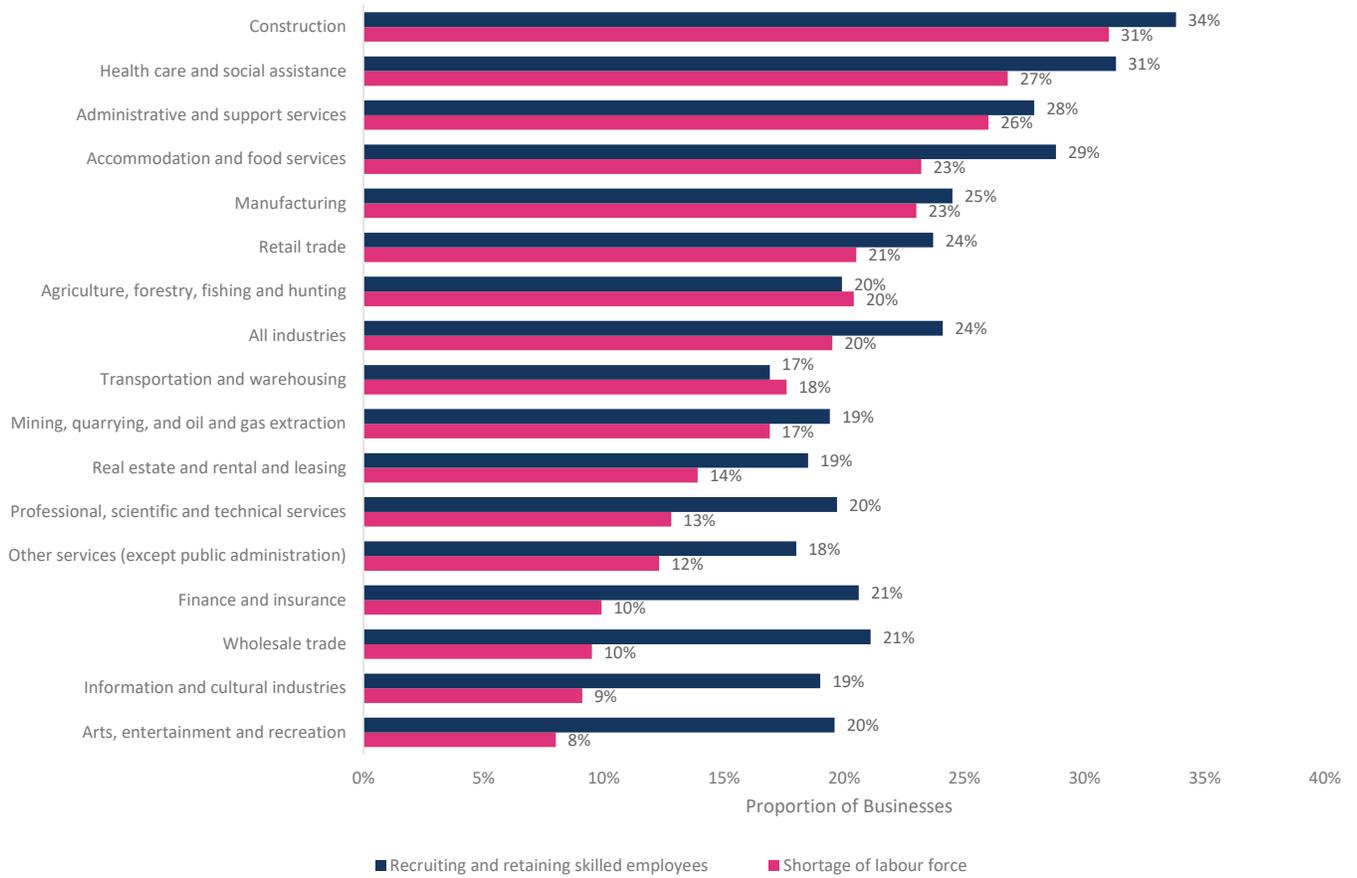
The proportion of businesses reporting both labour shortages and recruiting and retaining employees as obstacles in the first quarter of 2021 increases with firm size.

**Figure 3**

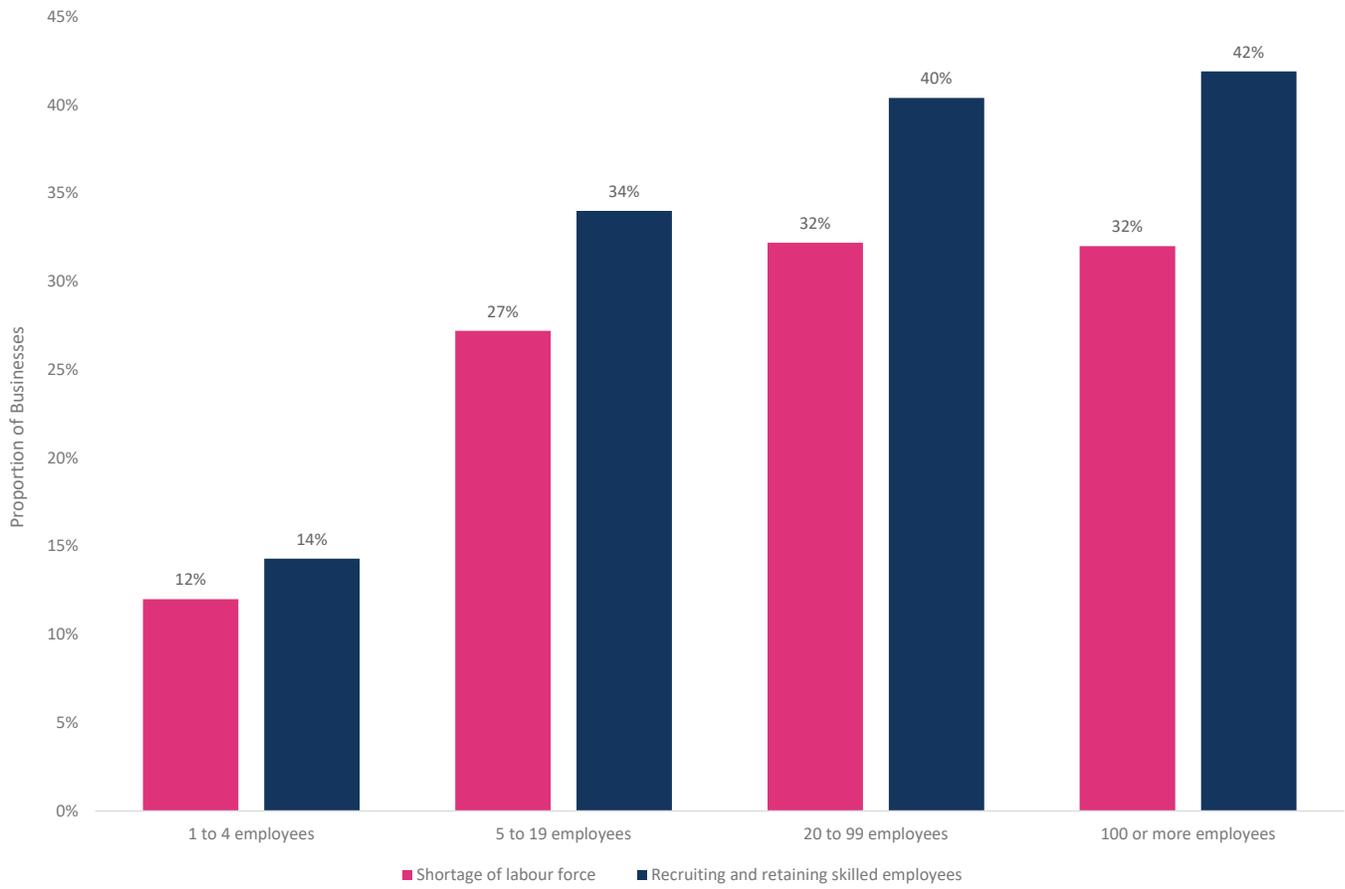
Businesses' Expectations about the Number of Employees over the Next Three Months; First Quarter 2021



**Figure 4**  
 Obstacles over the Next Three Months  
 Canada, First Quarter 2021



**Figure 5**  
Obstacles over the Next Three Months?  
Canada, First Quarter 2021





## Technological Trends, Skills and Training

In many ways, the pandemic has spurred firms to consider technologies that they should arguably already have adopted to improve occupational health and safety, productivity, and revenues. While certain technologies being adopted are unique to the pandemic, technology adoption and automation are almost always accelerated during economic downturns, since recessions increase the incentives for firms to invest in technology to improve productivity. As firms invest in technology and automate tasks they often expand their workforce, but at the same time require different skills from workers.<sup>8</sup>

### Technology adoption

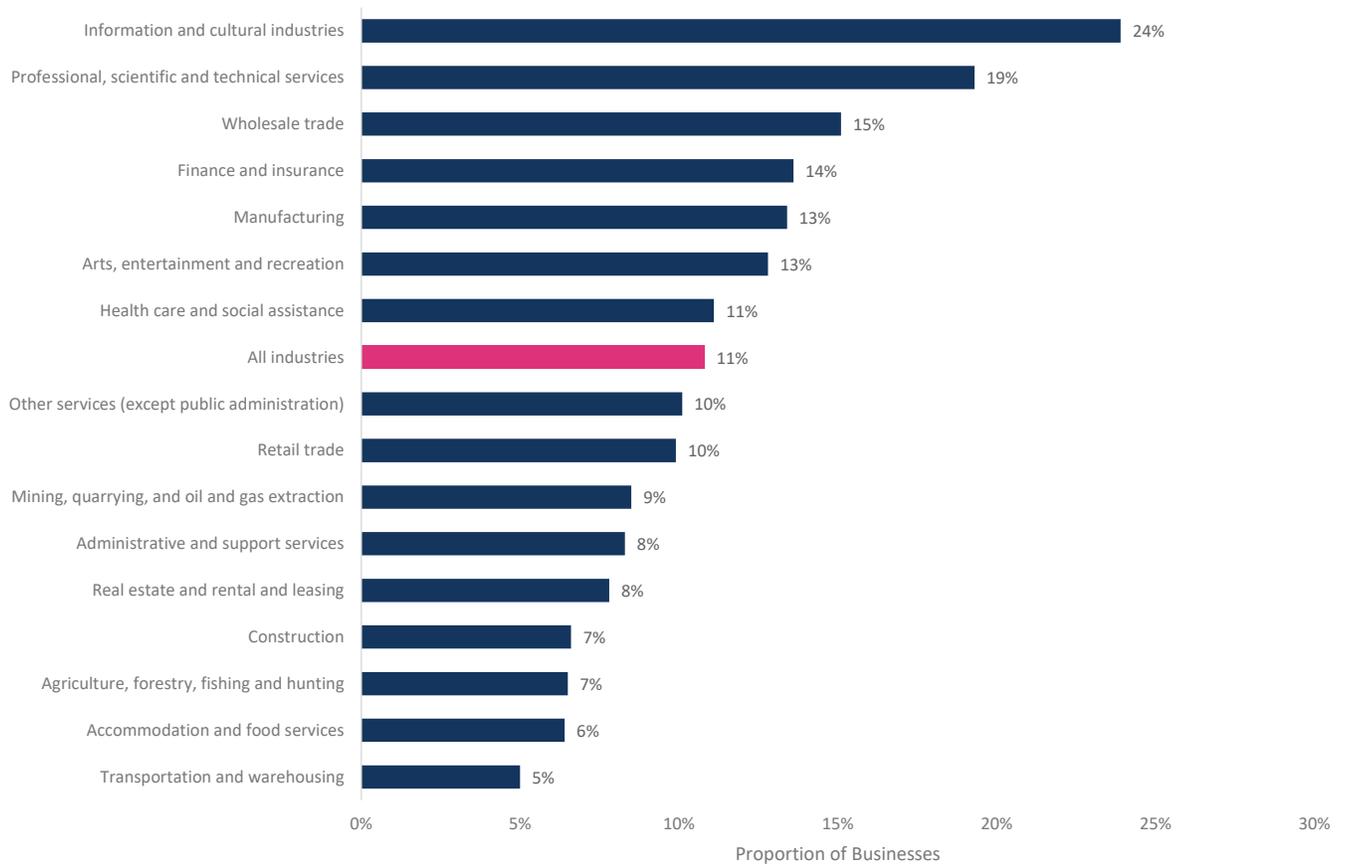
In the first quarter of 2021, 11 percent of Canadian businesses stated that they had adopted software or databases for purposes other than remote work or online sales. Unsurprisingly, software adoption is highest in more technologically driven industries such as information and cultural industries and professional, scientific, and technical services, where 24 and 19 percent of businesses, respectively, report adopting software or databases. Fifteen percent of businesses in wholesale trade reported software or database adoption (see figure 6). Businesses in wholesale trade are also leaders when it comes to online sales, which has been accelerated over the course of the pandemic. This likely reflects a number of trends in the industry, including the growing importance of business-to-business e-commerce for wholesale distributors; supply chain disruptions as a result of COVID-19 forcing wholesale distributors to adopt technology to closely monitor and respond to challenges; and the general importance of various software

technologies to track and improve sales and distribution.<sup>9</sup>

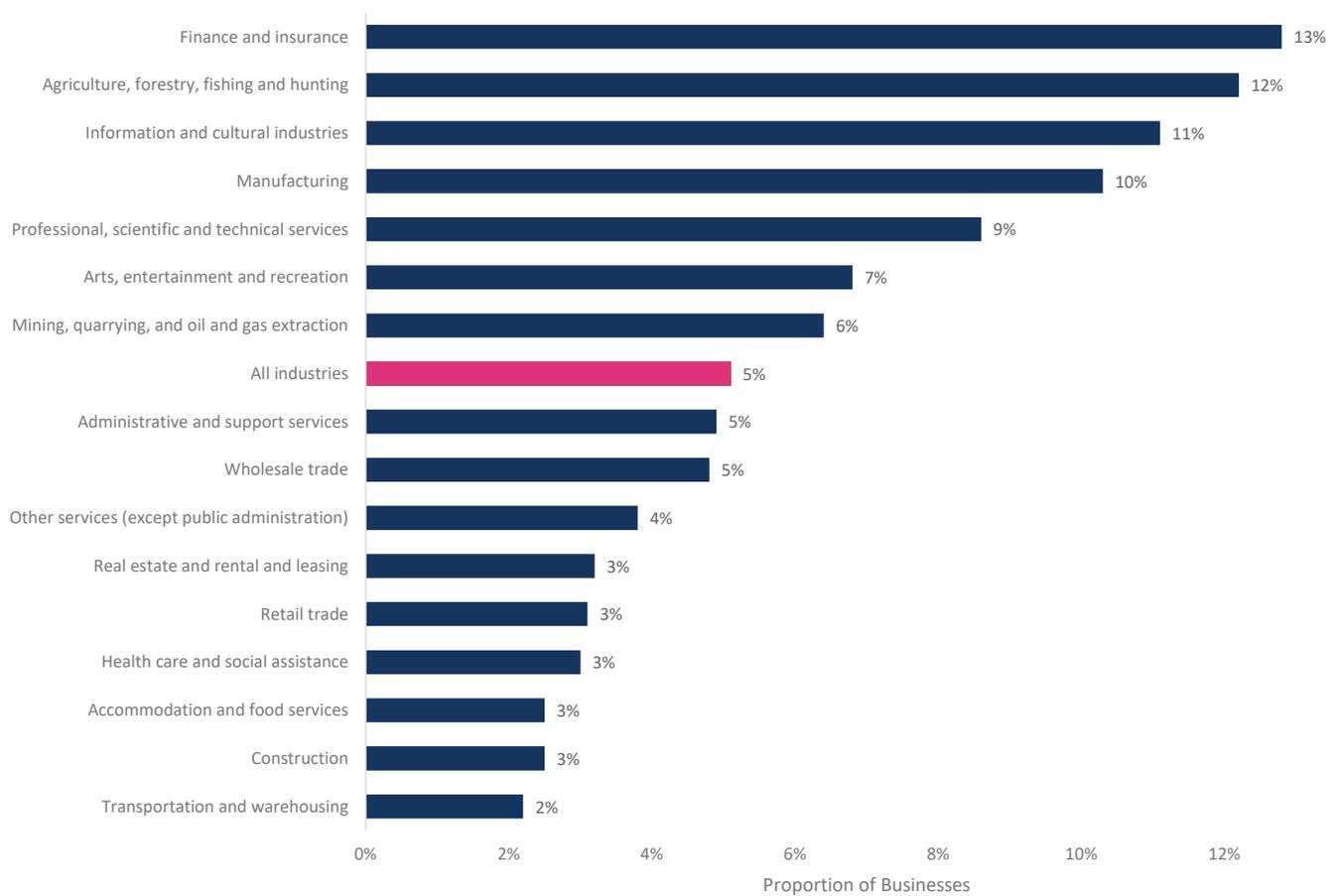
When asked about automation, only five percent of businesses across Canada reported that they had automated certain tasks in the first quarter of 2021. This increases to 10 percent of businesses in manufacturing, where increasingly sophisticated robotics and software are essential to improving productivity, product offerings, and quality. Eleven percent of businesses in information and cultural industries and 13 percent of businesses in finance and insurance reported automating tasks, which is unsurprising, given that software and data increasingly permeate nearly every aspect of business in these industries. Twelve percent of businesses in agriculture, forestry, fishing, and hunting reported automating tasks.

**Figure 6**

Business Adoption of Software or Databases for Purposes Other than Telework and Online Sales; Canada, First Quarter 2021



**Figure 7**  
 Business Automation of Certain Tasks;  
 Canada, First Quarter 2021



## Hiring for new skills

In the first quarter of 2021, 9 percent of businesses across Canada stated that they plan to hire staff with skills or knowledge that their current employees lack over the next year (see figure 8). While technology adoption is not the only driving force behind these skills demands, in many industries investments in technology often require simultaneous investments in skills.

Fifteen percent of businesses in wholesale trade and 14 percent of businesses in manufacturing stated that they plan to hire staff with skills or knowledge that their current employees lack over the next year. These two industries also reported high levels of technology adoption and automation (see figure 8). A relatively high proportion of businesses in manufacturing and wholesale trade also report plans to hire for new technical and managerial skills (see figures 9 and 10). In previous Brookfield Institute research, we show that the broader process of continuous improvement typically necessitates simultaneous investments in technology, as well as managerial capacity and technical skills to implement and work with the technology.<sup>10</sup>

Ten percent of businesses in retail and in healthcare and social assistance reported plans to hire staff with new skills or knowledge over the next year (see figure 8). In retail this might reflect the expansion and contraction of employment in the industry, while in healthcare and social assistance the pandemic has likely created new roles that urgently need filling.

Between 8 and 13 percent of firms in retail, professional, scientific, and technical services, finance and insurance, and information and cultural industries report plans to hire employees with technical skills that current employees lack over the next year (see figure 9). This may indicate relatively high rates of technological adoption and shift to online sales. Additionally, 15 and 21 percent of businesses in professional, scientific, and technical services and information and cultural industries, respectively, plan to hire

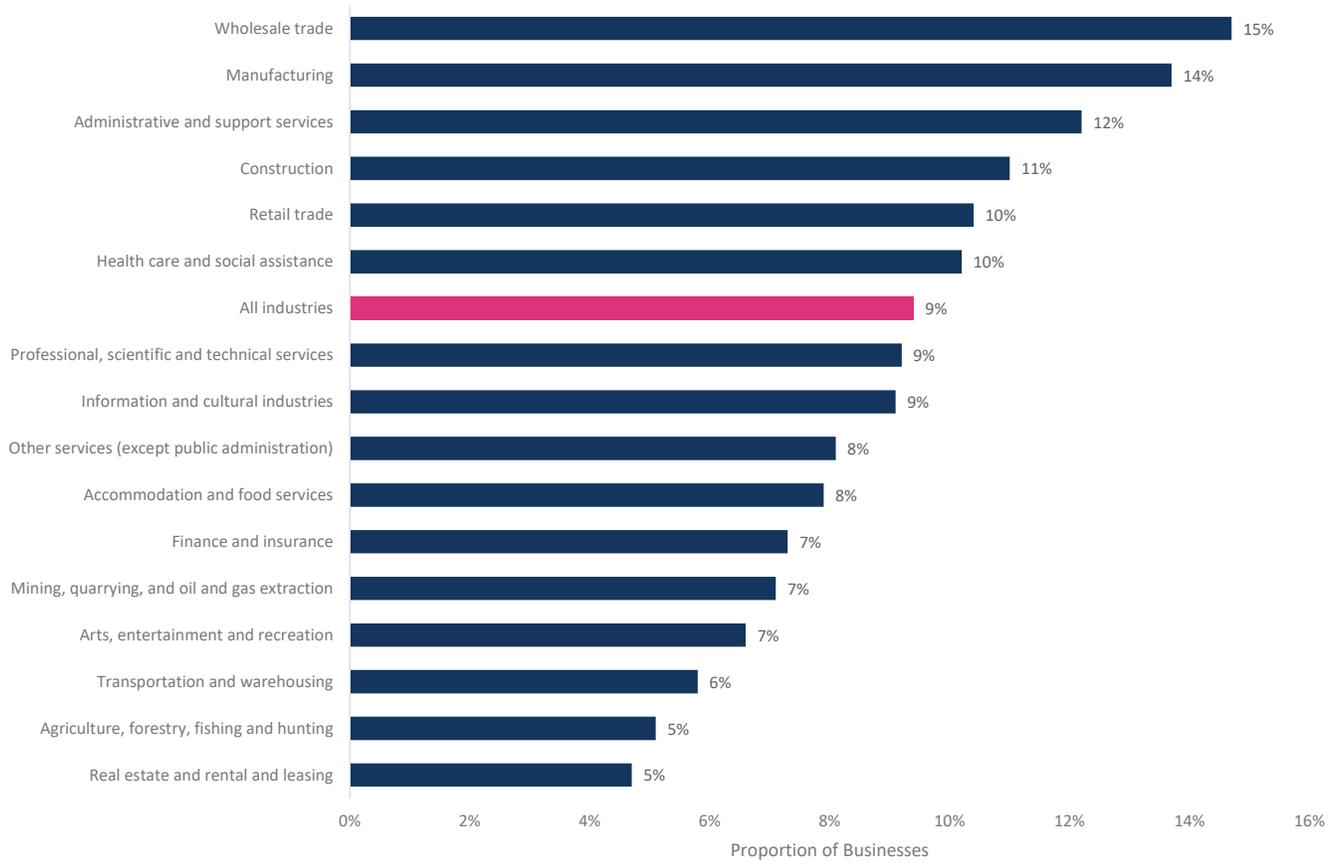
external contractors to meet their skills demands (see figure 11).

Eleven percent of businesses in the construction industry plan to hire staff with skills or knowledge employees currently lack over the next year, including a relatively large proportion of businesses reporting plans to hire both technical and managerial talent (see figures 8, 9, and 10). These hiring plans support the businesses' aforementioned concerns regarding labour shortages in the industry. Similarly, as employment in the natural resources sector now exceeds pre-COVID-19 levels,<sup>11</sup> a relatively large proportion of businesses in the reported plans to hire employees with technical and managerial skills that their employees currently lack over the next year (see figures 9 and 10). Interestingly, a relatively high proportion of businesses in these industries plan to hire external contractors to fill talent gaps over the next year. This could simply reflect the volatility or seasonality of work in these industries.

For the most part, plans to hire staff with new skills or knowledge, whether technical, managerial, or other skills, increases with firm size. The exception is plans to hire external contractors, where a comparatively high proportion of businesses with one to four employees plan to go this route, likely due to various resource constraints faced by smaller businesses.

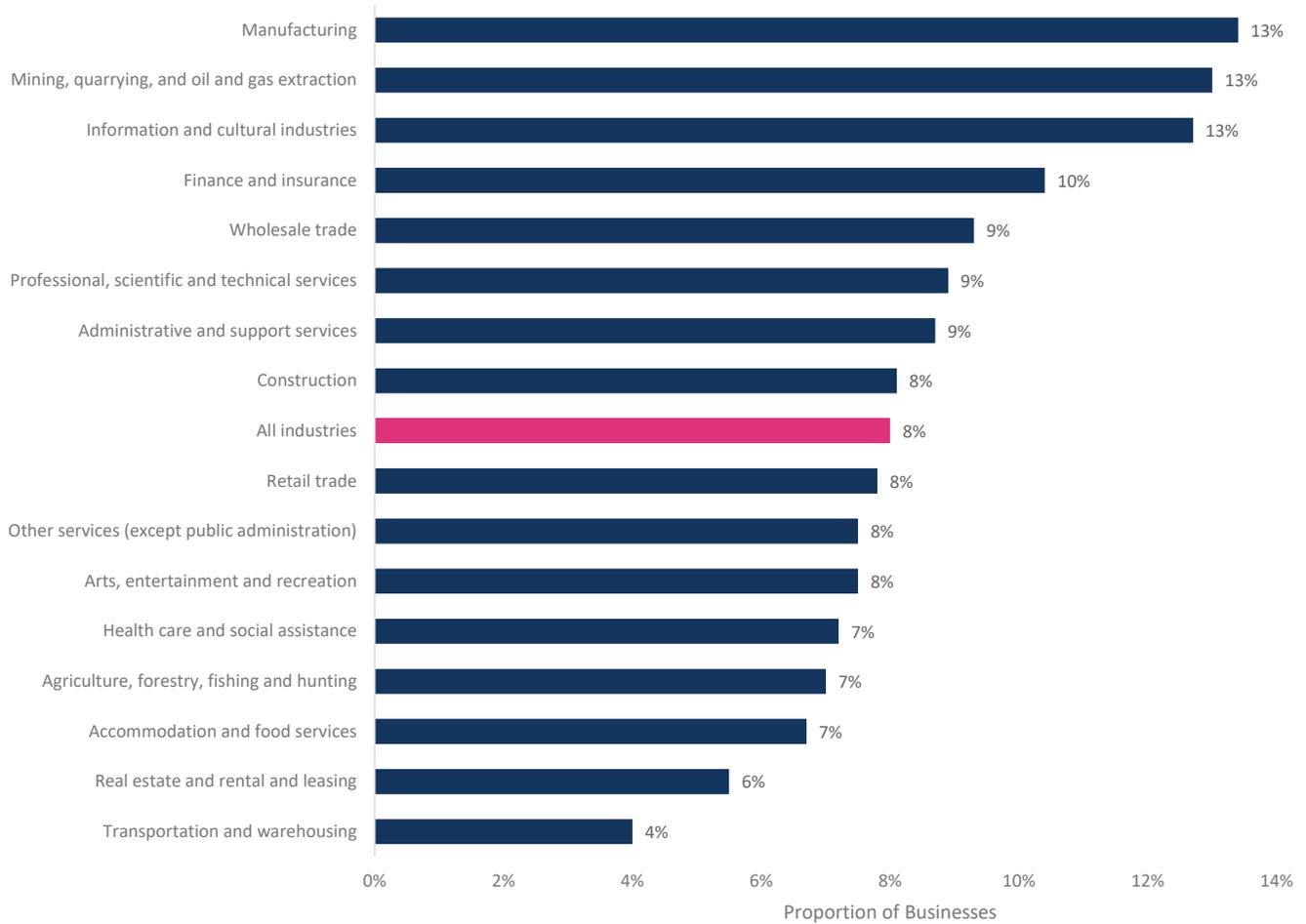
### Figure 8

Business Plans to Hire Staff with Skills or Knowledge Current Employees Lack Over the Next Year; Canada, First Quarter 2021



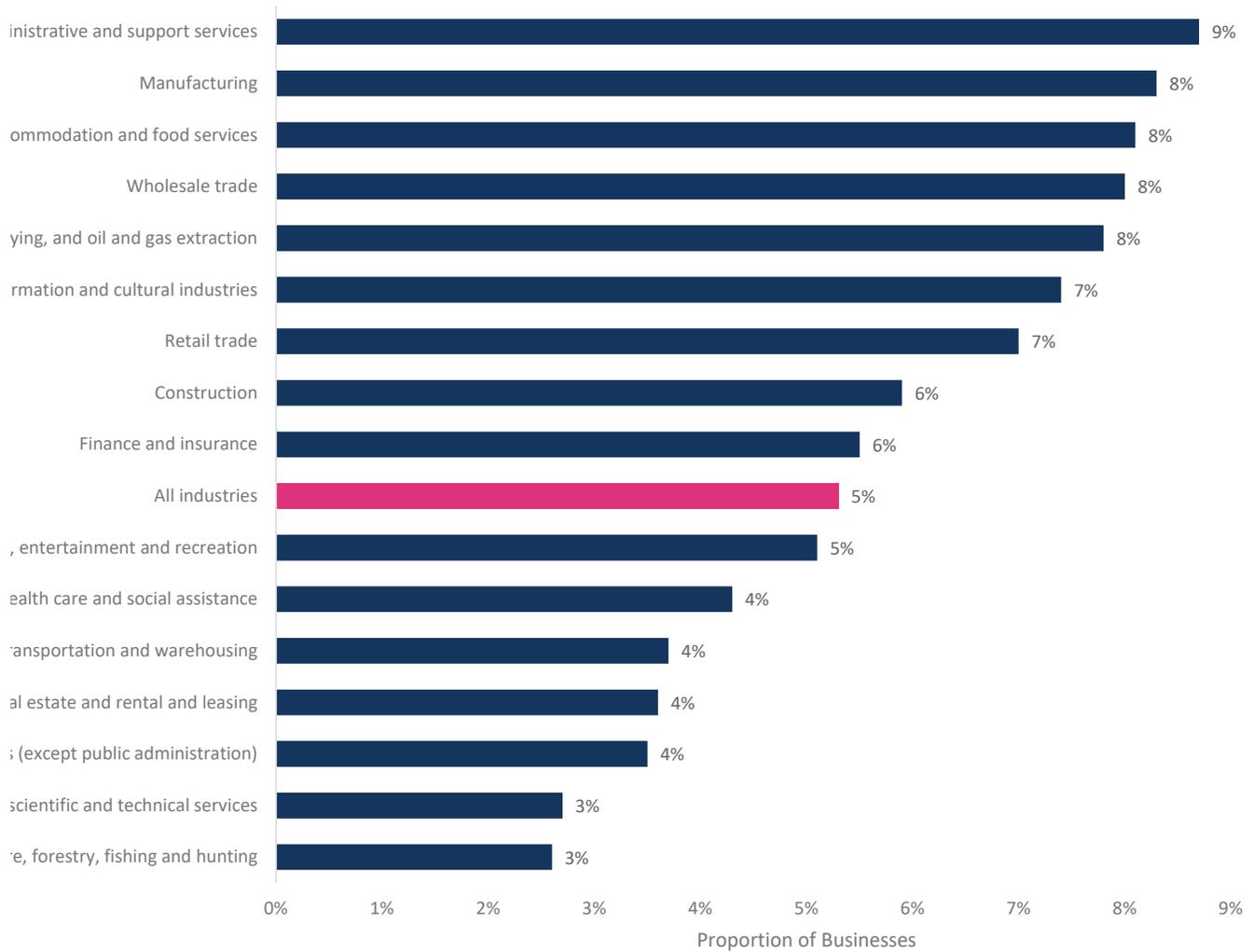
**Figure 9**

Business Plans to Hire Staff with Technical Skills  
Current Employees Lack Over the Next Year;  
Canada, First Quarter 2021



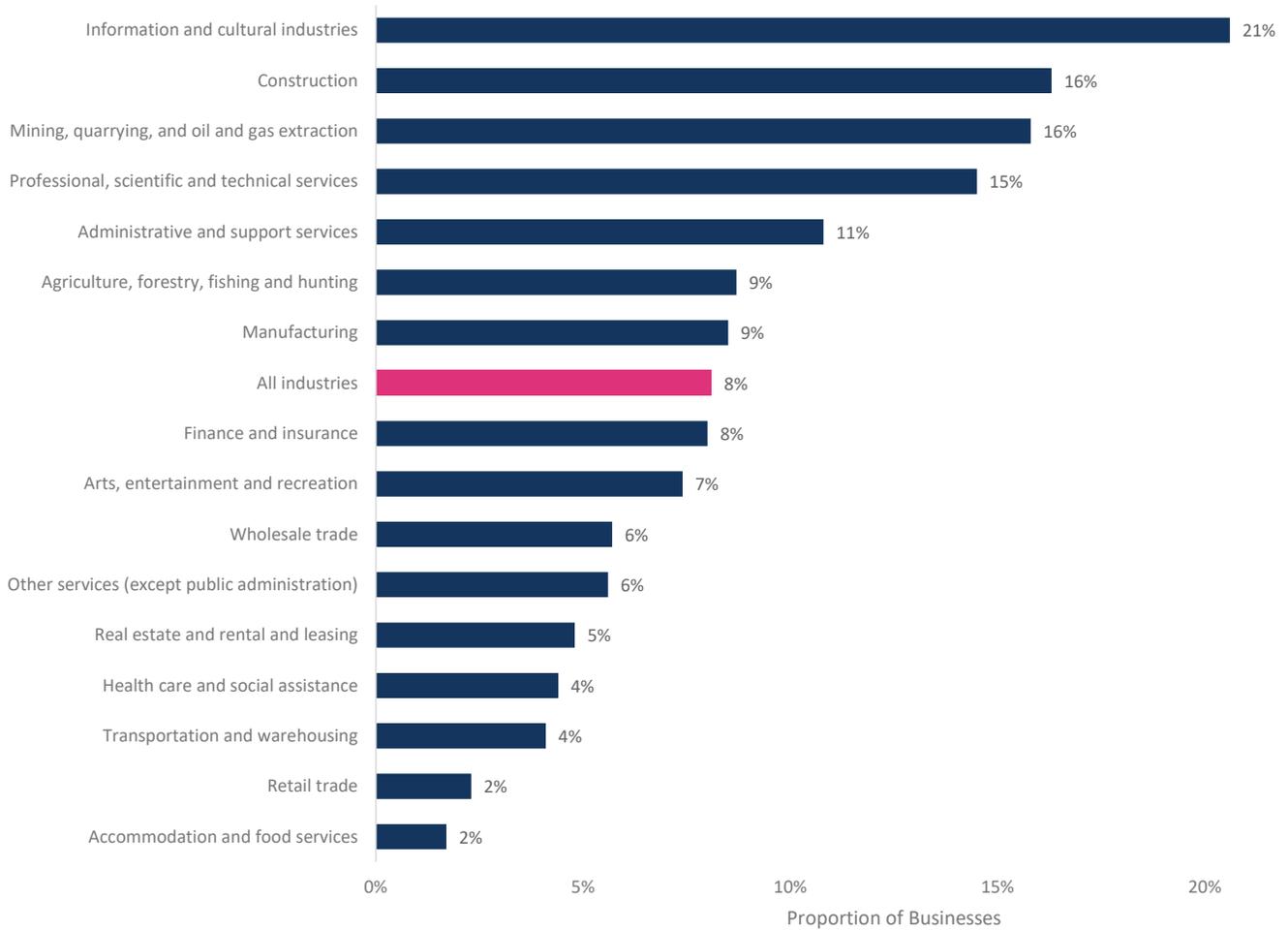
**Figure 10**

Business Plans to Hire Staff with Management Skills Current Employees Lack Over the Next Year; Canada, First Quarter 2021

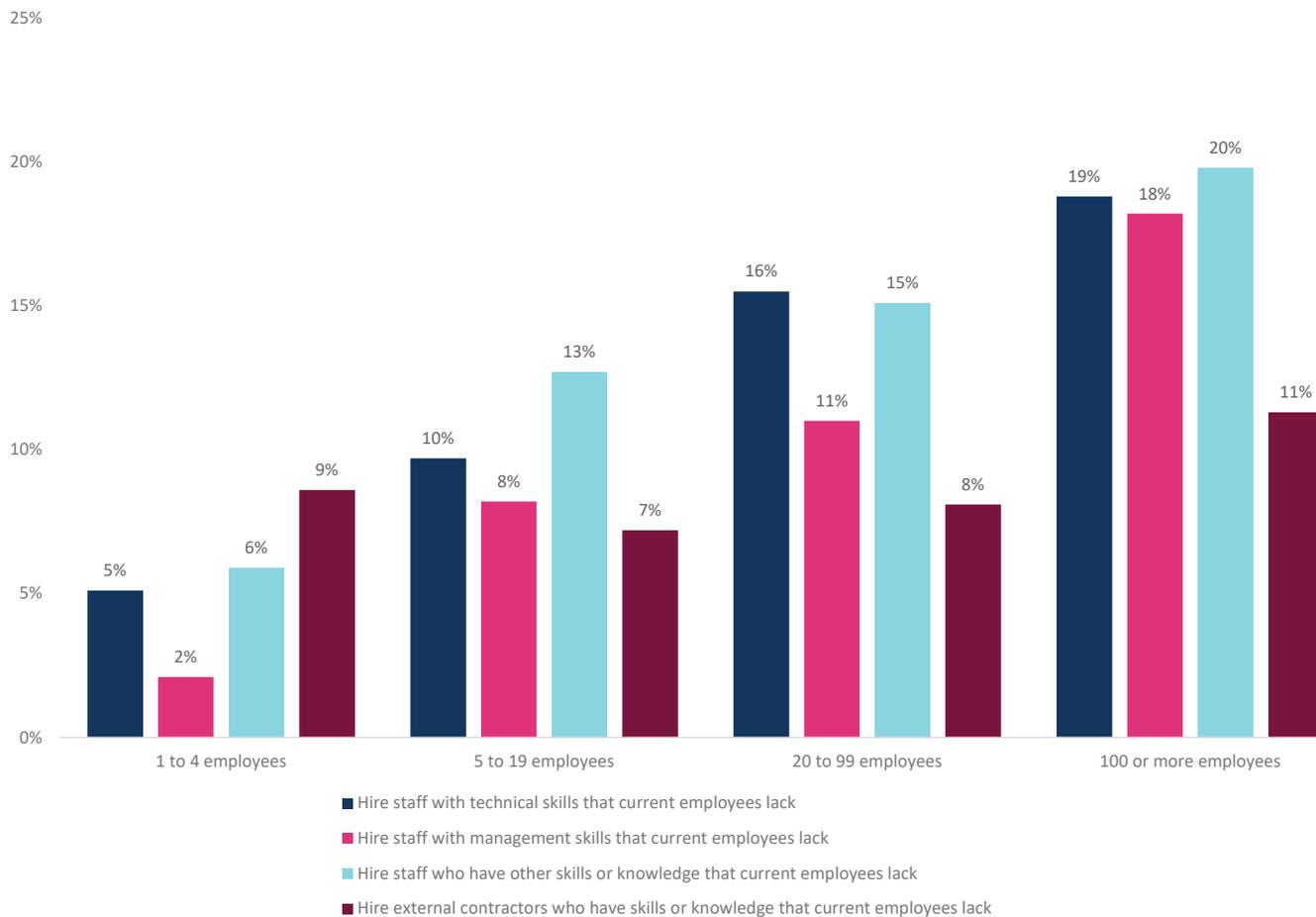


**Figure 11**

Business Plans to Hire External Contractors with Skills or Knowledge Current Employees Lack Over the Next Year; Canada, First Quarter 2021



**Figure 12**  
 Business Plans Over Next Year;  
 Canada, First Quarter 2021



## Training for new skills

In addition to or as a replacement for hiring new employees, businesses may invest in training existing employees to meet evolving skills demands. Sixteen percent of businesses across the economy reported that they plan to train their current employees in a different skill set in the next year (see figure 13). This is roughly seven percentage points higher than the proportion of businesses looking to hire employees with new skills, suggesting a stronger inclination towards upskilling the existing workforce than to looking elsewhere for new talent.

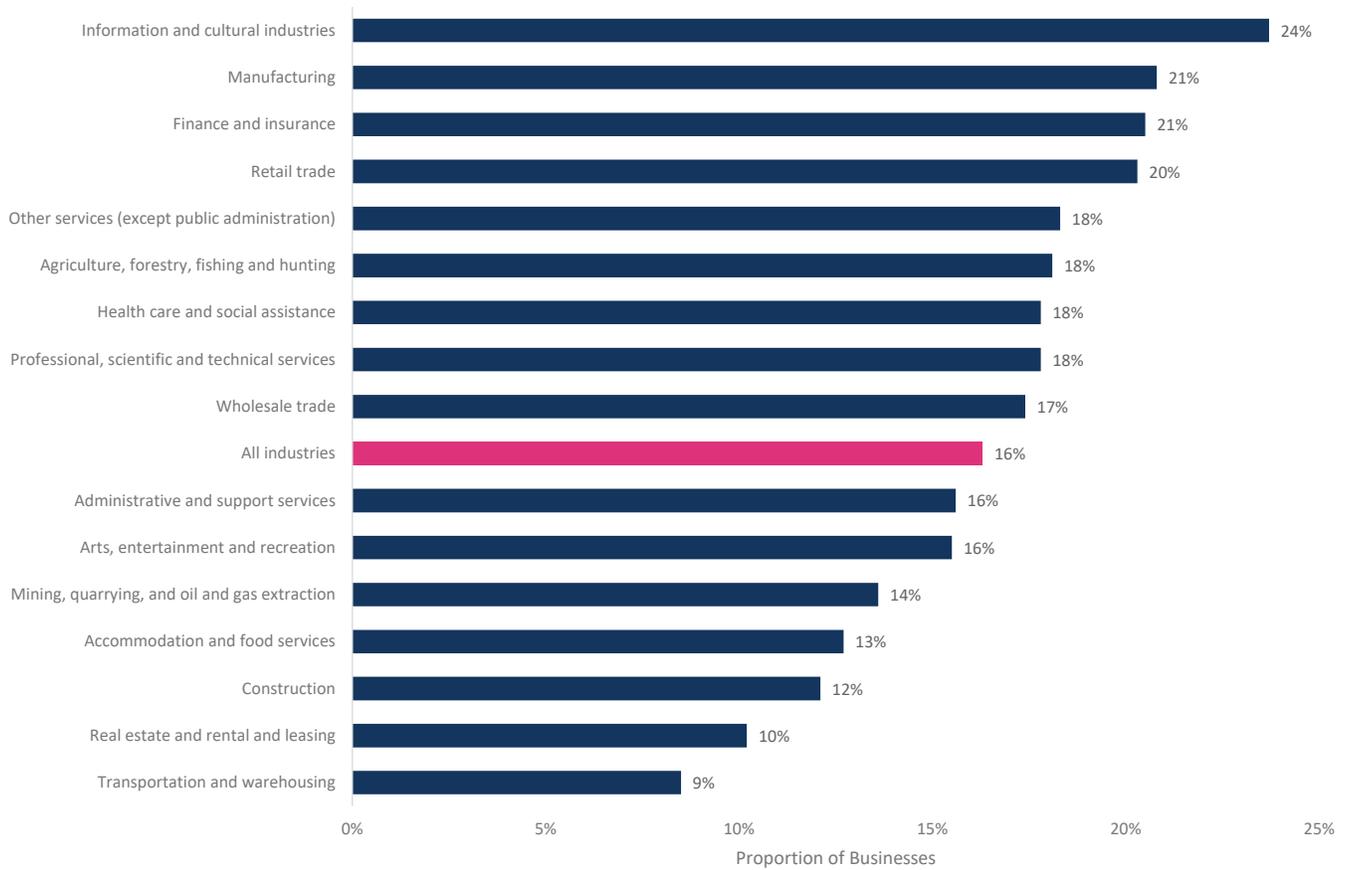
Between 21 and 24 percent of businesses in information and cultural industries, manufacturing, and finance and insurance indicated that they intend to provide training to employees in a new skill set. Once again, this may indicate that the relatively high rates of technology adoption in these industries has resulted in evolving skills demands that require upskilling.

Twenty percent of businesses in retail also indicated that they intend to provide training to current employees in a different skill set in the next year. This could be indicative of the fact that as retailers open up, they must invest in training for new hires. It may also indicate that, as some retailers embrace online sales to a greater extent, current employees may require new skills to effectively utilize this technology.

Unsurprisingly, as firm size increases, so too does the proportion of businesses that intend to invest in training employees in new skill sets over the next year (see figure 14). This may simply indicate that the larger the business, the greater the capacity to make investments in training.

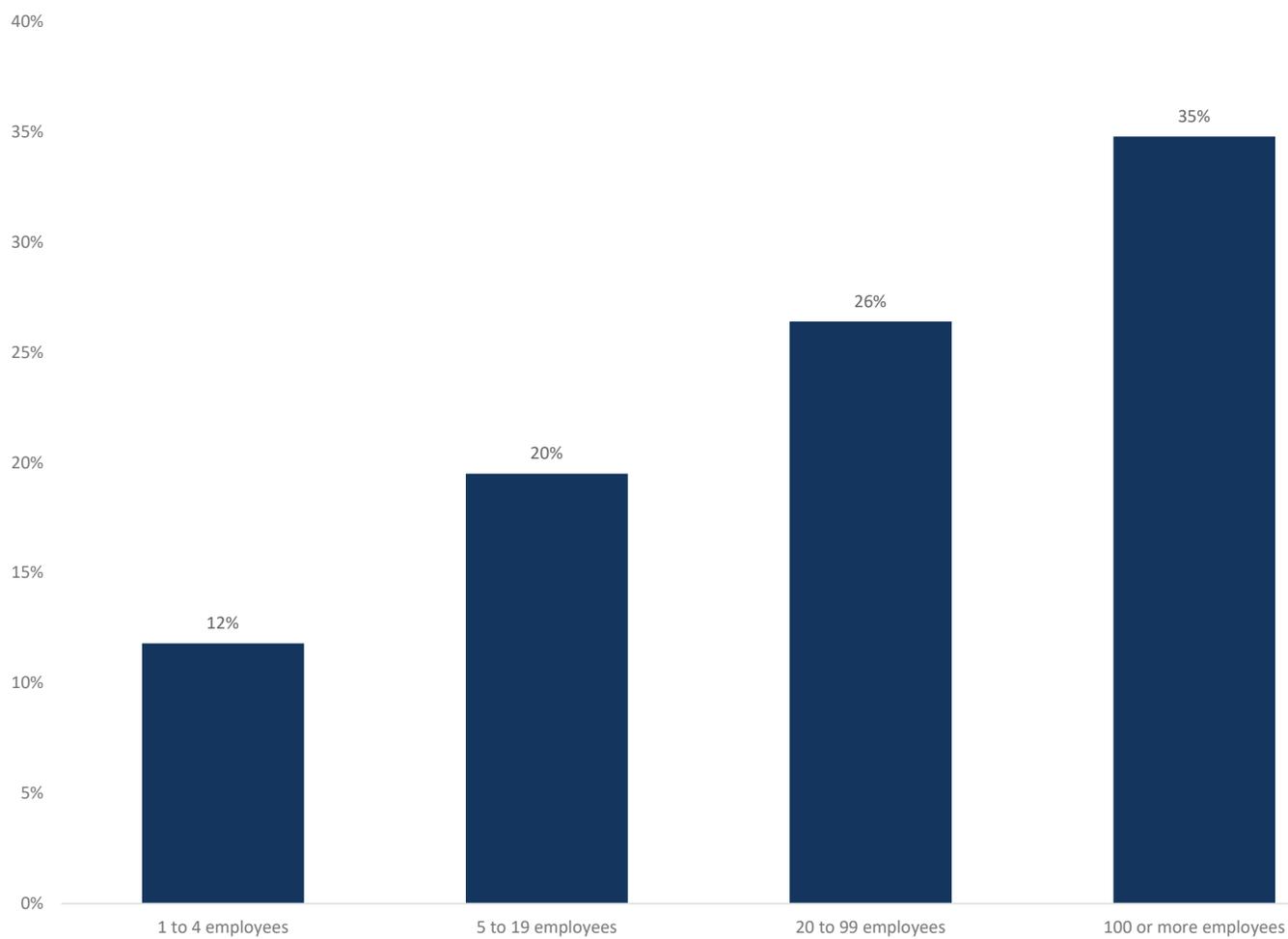
**Figure 13**

Business Plans to Provide Training to Current Employees in a Different Skill Set in the Next Year; Canada, First Quarter 2021



### Figure 14

Ullupta nobit ipsa porit aut ide placest orehendit  
acipsani velisque la quibus,



## Skills for the future

As the pandemic accelerates existing trends, businesses have had to make critical investments to meet evolving skills demands, with many reporting plans to both train existing employees and hire new ones to meet evolving skills and talent needs.

The reported need for both technical and managerial skills aligns with an existing body of research regarding growing demand for digital and complementary soft skills, now and in the future. Prior to the pandemic, the demand for digital skills was already growing rapidly. In the United States, between 2002 and 2016 the share of employment in occupations with high digital content grew from 4.8 percent to 23 percent of employment, largely driven by increasing digital skills demand among existing jobs.<sup>12</sup>

Existing Brookfield Institute studies have shown that employers across Canada are looking for a wide array of digital skills, both general and highly technical. The most in-demand digital skills across Canada are general data and workforce digital skills, including Microsoft Excel and the rest of the Microsoft Office suite. These general digital skills are needed across the economy and often serve as prerequisites for entering the workforce. Data skills, including the ability to work with Excel and SQL (a database querying software), are particularly important for both general and highly technical roles. The growing importance of software use and development not just in the tech sector but throughout the economy is reflected in the fact that many employers are looking for general software development skills as well as specific programming languages such as Java.<sup>13</sup>

Alongside digital skills, there has been an increasing demand for social and emotional skills, judgment and problem-solving and creativity.<sup>14</sup> Similarly, the skills and cognitive abilities foundational for the workforce of the future relate to a worker's capability to brainstorm, to absorb new information of different kinds, to teach, to influence opinions and behaviour, and to identify ways to help people.<sup>15</sup> These complementary

skills are necessary to effectively work with and/or design new technologies.

When it comes to the actual adoption of technology, businesses also require effective change management and leadership capacity to redesign internal processes, identify talent needs, and ensure organizational buy-in, as well as individuals who can bridge the gap between leaders and technologists—often referred to as translators.<sup>16</sup>

However, there exist many barriers when it comes the acquisition and deployment of these skills. For example, in 2016 men were almost four times more likely than women to work in a tech occupation, where a combination of digital and complementary soft skills are increasingly important. Participation rates for Black, Filipino, and Indigenous populations are also low and there is also a significant pay gap for most visible minority groups—particularly for Black tech workers.<sup>17</sup> Further, according to the Brookfield Institute's Forecast of Canadian Occupational Growth, over one fifth of men who identify as Filipino, Southeast Asian, Black, or Latin American are in occupations projected to shrink between now and 2030.<sup>18</sup>

As many trends have been accelerated over the course of the pandemic, including those associated with technology, it is critical to ensure that more Canadians are able to acquire the skills needed to meet business needs and become more resilient to labour market disruptions in the future. Equally essential is to find ways to support job transitions from areas of decline to areas of growth, and to help people develop transferable skills that could facilitate adaptation to a changing labour market landscape.<sup>19</sup>



## End Notes

1. The CSBC is an occasional, voluntary business survey designed to better understand the changing impacts of COVID-19 on Canadian businesses. While there are some standard questions, each wave of the CSBC has a slightly different focus and often asks new questions, or changes the way they ask existing questions. In these briefs, we made comparisons to previous waves where it made sense to do so and the data allowed for direct comparisons to be made. Otherwise, we largely focused on the latest wave of the CSBC.
2. <https://www150.statcan.gc.ca/n1/daily-quotidien/200807/dq200807a-eng.htm>
3. <https://www150.statcan.gc.ca/n1/daily-quotidien/210205/dq210205a-eng.htm>
4. <https://www150.statcan.gc.ca/n1/daily-quotidien/210312/dq210312a-eng.htm>
5. Jim Stanford, “There’s No Shortage of Labour. Employers Just Need to Improve Their Offer,” Toronto Star, June 13, 2020  
<https://www.thestar.com/business/opinion/2020/06/13/theres-no-shortage-of-labour-employers-just-need-to-improve-their-offer.html>
6. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410032601>
7. <https://www150.statcan.gc.ca/n1/daily-quotidien/210312/dq210312a-eng.htm>
8. Creig Lamb, “Automation, Accelerated: Will Technology Adoption amidst the Pandemic Leave Canada Further Behind?” Brookfield Institute Commentary, May 14, 2020, <https://brookfieldinstitute.ca/commentary/automation-accelerated-will-technology-adoption-amidst-the-pandemic-leave-canada-further-behind-2/>; Joel Blitt, “Automation and Reallocation: Will COVID-19 Usher in the Future of Work?” *Canadian Public Policy* 46, no. S2 (2020): S192–S202, <https://utpjournals.press/doi/10.3138/cpp.2020-065>
9. Magnus Meier, “2021 Wholesale Distribution Trends: More Competition, Supply Chain Disruption,” accessed March 21, 2021, <https://www.the-future-of-commerce.com/2021/02/10/2021-wholesale-distribution-trends/>
10. Creig Lamb, Daniel Munro, and Viet Vu, Better, Faster, Stronger: Maximizing the Benefits of Automation for Ontario’s Firms and People, Brookfield Institute for Innovation + Entrepreneurship, May 2018, <https://brookfieldinstitute.ca/wp-content/uploads/Brookfield-Institute-Better-Faster-Stronger-2.pdf>
11. <https://www.the-future-of-commerce.com/2021/02/10/2021-wholesale-distribution-trends/>
12. Mark Muro, Sifan Liu, Jacob Whiton, and Siddharth Kulkarni, “Digitalization and the American Workforce,” *The Brookings Institution*, November 2017, <https://www.brookings.edu/research/digitalization-and-the-american-workforce>
13. Viet Vu, Creig Lamb, and Rob Willoughby,

*I, Human: Digital and Soft Skills for a New Economy*, Brookfield Institute for Innovation + Entrepreneurship, December 2019, <https://www.brookings.edu/research/digitalization-and-the-american-workforce/>

14. David J. Deming, “The Growing Importance of Social Skills in the Labour Market,” *Quarterly Journal of Economics* 132, no. 4 (2017): 1593–1640, [https://scholar.harvard.edu/files/ddeming/files/deming\\_socialskills\\_qje.pdf](https://scholar.harvard.edu/files/ddeming/files/deming_socialskills_qje.pdf); Ajay K. Agrawal, Joshua S. Gans, and Avi Goldfarb, “Exploring the Impact of Artificial Intelligence: Prediction versus Judgment,” National Bureau of Reducation Research Working Paper no. 24626, May 2018, [https://www.nber.org/system/files/working\\_papers/w24626/w24626.pdf](https://www.nber.org/system/files/working_papers/w24626/w24626.pdf); Hasan Bakhshi, Carl Benedikt Frey, and Michael Osborne, *Creativity versus Robots: The Creative Economy and the Future of Employment*, Nesta, April 2015, <https://www.nesta.org.uk/report/creativity-vs-robots/>

15. Diana Rivera, Yasmin Rajabi, Joshua Zachariah, and Rob Willoughby, *Ahead by a Decade: Employment in 2020*, Brookfield Institute for Innovation + Entrepreneurship, May 2020, <https://brookfieldinstitute.ca/wp-content/uploads/Ahead-by-a-Decade-EN-Final.pdf>

16. Sarah Villeneuve, *Boosting Competitiveness of Canadian Businesses: Clearing a Path to Widescale AI Adoption*, Brookfield Institute for Innovation + Entrepreneurship, May 2019, <https://brookfieldinstitute.ca/wp-content/uploads/AI-Talent-Literature-Review-FINAL.pdf>

17. Viet Vu, Creig Lamb, and Asher Zafar, *Who Are Canada’s Tech Workers?* Brookfield Institute for Innovation + Entrepreneurship, January 2019, <https://brookfieldinstitute.ca/wp-content/uploads/FINAL-Tech-Workers-ONLINE.pdf>

18. Diana Rivera, Yasmin Rajabi, Joshua Zachariah, and Rob Willoughby, *Ahead by a Decade: Employment in 2020*, Brookfield Institute for Innovation + Entrepreneurship,

May 2020, <https://brookfieldinstitute.ca/wp-content/uploads/Ahead-by-a-Decade-EN-Final.pdf>

19. Annalise Huynh, Creig Lamb, and Viet Vu, *Lost and Found: Pathways from Disruption to Employment*, Brookfield Institute for Innovation + Entrepreneurship, October 2019, <https://brookfieldinstitute.ca/lost-and-found-pathways-from-disruption-to-employment/>