



**Future
Skills
Centre**

Centre des
**Compétences
futures**

Project Insights Report

AI and the Shifting Landscape of Future Skills and the Future of Work



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Executive Summary

Canada leads in the research and development of artificial intelligence (AI) products and services. Canada is also a leader in AI talent (with more than 140,000 AI professionals in 2023) and in gender diversity in AI-related fields. Yet Canada lags globally in AI adoption.

This study aims to understand an existing gap between employers and employees regarding AI adoption and skills. This report draws on new data in 2024 from a survey of more than 5,800 Canadians, combined with previous findings from the [Survey on Employment and Skills](#), which is now in its seventh wave. The survey was first administered in 2020 and as of the seventh wave has more than 40,000 participants.

The top barrier to AI adoption noted by Canadian businesses is difficulty finding employees with the necessary skills and expertise to support the integration of this technology into operations. Other barriers are that Canadians lack awareness of AI tools that can be used in the workplace, and that integrating AI into operations introduces ethical and privacy concerns.

This study also explores perceptions of AI in the workplace, and whether employees are receiving training and guidance on using AI in the workplace.

The findings show employees are not waiting for their employers to provide the necessary training or support in using AI in the workplace. Additionally, just over one-half of respondents felt that their employer was not providing enough training in new technologies. These are important findings that must be addressed because the use of AI without policies or support from employers and guardrails for its safe and ethical use creates massive risks.

Specifically, employees are learning either through self-guided training or no training at all. Interestingly, respondents who reported being familiar with AI are the most worried about their jobs becoming automated, suggesting a need for more AI literacy through organizational guidance and policies.

The study also investigates group differences among employees who use AI. It revealed a significant narrowing of the gender gap, with women nearly as likely as men to be using AI.

Moreover, respondents who are younger, men, Indigenous, racialized and immigrants are more likely to be familiar with and receive training on using AI tools in the workplace.

KEY INSIGHTS

- 1 Nearly 3 in 10 employed Canadians are using AI tools in the workplace, but almost one-half (44%) of those have not received any formal training.
- 2 The survey shows that women are nearly as likely as men to be using AI in the workplace. Younger age groups, men, Indigenous, racialized and immigrant respondents are more likely to be familiar with and have received training on AI tools in the workplace.
- 3 Nearly one-half (44%) of those who are the most worried about their job becoming automated are also those who said they are very familiar with AI in the workplace.

▶ The Issue

Canada is a global leader in AI talent. As of 2023, Canada had more than 140,000 AI professionals. Canada also lags globally in AI adoption, with less than 4% of firms indicating that they use AI in their business operations. Other countries have AI adoption rates that are double Canada's. When asked about barriers to AI adoption, Canadian employers reported they have difficulty finding employees with AI expertise, which reveals a disconnect between workers with AI skills and employers looking to recruit them. On the one hand, the data show that Canada has a highly skilled workforce that is ready to meet the increasing demand for AI skills as AI adoption increases. On the other hand, Canadian businesses say they are struggling to find workers with the AI skills they need.

Canadian businesses also struggle with AI adoption because they lack awareness of AI tools. Research shows that nearly three-quarters of Canadian businesses say they struggle to identify the business case for AI. Some employers also report a mistrust of AI tools and see them as an ethical concern, often due to uncertainty about how these tools work. The lack of awareness about AI among employers points to a need for governance policies for using AI tools in the workplace.



What We Investigated

This report uses data from the seventh and most recent wave of the Survey on Employment and Skills conducted by the Environics Institute in collaboration with the Diversity Institute and the Future Skills Centre. Between 2020 and 2024, the survey was administered in seven waves to more than 40,000 participants across Canada, with the seventh wave consisting of more than 5,800 participants. Given the increasing interest in AI, this wave included questions about familiarity with, use of, perceptions of and training on AI.

The research aimed to answer the following questions:

- How much training and guidance do employees receive from their employers on how to use AI in the workplace?
- How often are Canadians using AI in the workplace?
- How familiar are Canadians with AI tools that can be used in the workplace? Are there any group differences in familiarity?
- How does familiarity relate to perceptions of AI in the workplace?

What We're Learning

Employees are ahead of their employers in AI adoption. Most respondents are somewhat familiar with AI tools to use in the workplace but are worried about their jobs becoming automated. Respondents who have used AI tools at work indicated they had done so with no training or without formal guidance from their employers.

The Diversity Institute has developed an evidence-based set of AI competencies, which recognizes the need for three levels of AI skills: deep technical skills; the skills for innovating with AI, including technical skills and those needed to drive change; and basic AI literacy, which all jobs require. The skills for innovating with AI are especially in demand and hold promise to create new pathways to great jobs while reducing the digital divide.

Key findings:

- Nearly 3 in 10 employed Canadians are using AI tools in the workplace.
- Less than one in five respondents (14%) are very familiar with AI tools to use in the workplace, 35% are somewhat familiar, 27% are not very familiar and 21.6% are not at all familiar.
- Perceptions of the speed at which workplaces are adapting to new technologies is mixed, with 43% agreeing that their workplace is too slow in their adoption and 44% disagreeing.
- Perceptions about training provided by employers are slightly negative, with 47% of respondents indicating they have not received enough training on new technologies in the workplace.
- Nearly one-half (44%) of those who are the most worried about their job becoming automated are also those who said they are very familiar with AI in the workplace. Just over one-half of those who are the least worried about automation are not very (30%) or not at all (25%) familiar with AI in the workplace.
- Just over two-thirds of respondents (68%) who have used AI learned it on their own, either without any training (44%) or through self-guided training (24%).

The survey also found group differences:

- Familiarity with AI tools in the workplace varies by age, with 44% of those aged 55 to 64 years saying they have not received any guidance on using AI in the workplace from their employer, compared to 30% of those aged 25 to 34 years.
- There are gender differences in familiarity with AI, with 53% of men compared to 47% of women indicating that they are somewhat or very familiar with AI programs to use in the workplace. This is significantly less than the gender gap in technology roles overall, where, despite representing one-half of the workforce, women hold only 30% of the roles.
- More men (62%) than women (56%) have received either formal or informal guidance from their employers on using AI in the workplace.
- Just under one-half (47%) of white respondents have not received any training on using AI tools in the workplace. This is less common for racialized (43%) and Indigenous (29%) respondents.
- First-generation (26%) and second-generation (18%) immigrants are less likely than third-generation-plus respondents (36%) to have received AI training from their employers.

Why It Matters

The results of this survey show that employees are using AI at work mainly on their own, without formal guidance from their employers. There are huge risks to Canadian businesses and the economy if employees continue to outpace their employers in using AI in the workplace. These include putting intellectual property, privacy, cybersecurity and reputations at risk. Creating disruptive technologies does not produce innovation. Using them does.

For Canada to maintain our competitive advantage in the global AI sector, employers need to adapt and improve their hiring processes to expand their talent pool. If employers are having difficulty filling AI roles specifically, then it could very likely be that they are not looking in the right places because their existing hiring processes are exclusionary to certain groups. Furthermore, emerging evidence suggests that certain forms of AI could narrow the gender gap. For example, generative AI applications require skills from graduates across diverse disciplines as opposed to strictly those from more traditional, men-dominated science, technology, engineering and mathematics disciplines.



State of Skills: Unleashing AI into the Skills Development Ecosystem

To reap the benefits that AI has to offer, its adoption and deployment should be a collaborative and inclusive process that recognizes and addresses genuine concerns individuals have about AI and technology more broadly.

[Read Thematic Report](#)

► **What's Next**

The findings show that the demand for AI literacy continues to grow in Canadian workplaces. To stay competitive, employers must act quickly to align their hiring policies with this growing trend. There is a need to investigate further the skepticism and media perceptions of AI, which generally highlight the role of AI in misinformation and how generative AI could disrupt creative industries.

The survey also revealed that respondents have varying degrees of familiarity with AI, pointing to a need for skills development at different levels. Significant work should be invested into developing a competency framework that accounts for the different skills, knowledge and behaviours required for each level. The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.

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The Future Skills Centre acknowledges that the Anishinaabe, Mississaugas and Haudenosaunee share a special relationship to the 'Dish With One Spoon Territory,' where our office is located, bound to share and protect the land. As a pan-Canadian initiative, FSC operates on the traditional territory of many Indigenous nations across Turtle Island, the name given to the North American continent by some Indigenous peoples. We are grateful for the opportunity to work in this territory and commit ourselves to learning about our shared history and doing our part towards reconciliation.