Future Skills Centre | Centre des Compétences futures

Project Insights Report

Adoption Ready? The AI Exposure of Jobs and Skills in Canada's Public Sector Workforce

PARTNERS
The Dais

LOCATIONS
Across Canada

PUBLISHED
October 2025

CONTRIBUTORS
Report author(s): Graham Dobbs, Vivian Li, Viet Vu, André Côté

Executive Summary

Canada's public sector is entering a period of rapid technological change. Economic uncertainty, budgetary pressures, and rising expectations for service delivery are driving governments to explore artificial intelligence (AI) as a tool for efficiency and innovation. At the same time, generative AI technologies such as ChatGPT are maturing quickly, raising questions about their potential impact on the country's 1.1-million-strong public sector workforce.

This project analyzed occupational data from the 2021 Census of Population and Canada's National Occupational Classification (NOC) to assess the extent and nature of public sector exposure to AI. Building on an innovative methodology developed in recent literature on AI and task automation, the project measured both **exposure** to AI (likelihood of interacting with AI systems in daily work) and **complementarity** to AI (whether AI is more likely to assist or to replace common job tasks). The analysis was applied to federal, provincial, and municipal government roles, identifying which occupations could benefit from AI augmentation and which face greater risk of task substitution.

The findings show that public sector workers are more likely than the broader Canadian workforce to be in AI-exposed occupations (74% versus 56%), with nearly half in low-complementarity roles where AI could substitute for tasks. Certain occupational groups, particularly in business, finance, and administration, are concentrated in the high-exposure, low-complementarity category. Conversely, senior management, natural and applied sciences, and education, law, and social, community, and government services have higher potential to benefit from AI assistance.

The study also identified four AI application areas most relevant to the public sector: interpreting and reproducing language; recognizing and interpreting images; applying pattern recognition; and interpreting auditory information. Successful adoption, however, will depend as much on non-technical factors—human oversight, access to training, and adherence to public service values—as on the technology itself.

These results have clear implications for workforce planning, training investments, and AI governance in Canada's public service. To harness AI's potential while protecting service quality and employee well-being, governments will need targeted strategies, transparent risk assessments, and strong engagement with workers—especially those in high-exposure roles. Done right, AI adoption could enhance public sector capacity and resilience; done poorly, it could erode trust and weaken service delivery.

KEY INSIGHTS

1. Canada's public sector workers are significantly more likely to be in occupations that are exposed to AI applications than the overall Canadian labour force.

2. Compared with the overall Canadian workforce, a comparable share of public sector jobs are in high AI-exposure occupations with tasks more likely to be assisted or augmented by current AI technologies.

3. A much larger proportion of public sector jobs are in low-complementarity occupations, composed of tasks that are more likely to be substituted or replaced, than the overall Canadian workforce.

4. The most useful AI applications in the public sector include reading and writing tasks, image interpretation, data analysis, pattern recognition and speech recognition.

5. Non-technology factors are also important determinants of successful AI adoption. These include the role of human oversight, access to AI tools and training for workers, and consistent application of core non-technological values and ethical principles to ensure successful, responsible deployment of AI in the public sector.

The Issue

In light of current economic uncertainties, strained Canada-U.S. relations, and intense global competition, Canada's federal government must rapidly adapt to a changing economic reality. In 2025, it announced a comprehensive review of government spending, with a goal to cut operational costs by 15% by 2028–29. At the same time, the proliferation of generative artificial intelligence (AI) tools, such as ChatGPT, has heightened expectations for productivity gains, prompting urgent discussions about the role of AI in government efficiency.

How might AI adoption affect the jobs and skills of Canada's 1.1-million-strong public sector workforce? This report identifies which roles could benefit from AI assistance, which face potential disruption, and offers recommendations to public service leaders for a responsible transition toward AI adoption in government operations.

What We Investigated

This project investigates how artificial intelligence adoption could affect Canada's public sector workforce, examining whether AI is more likely to assist workers with job tasks or automate those tasks entirely. Focusing on approximately 1.1 million employees across federal, provincial, and municipal governments, the study responds to growing pressures for efficiency and workforce adaptation in the face of rapid technological change.

We applied an innovative methodological approach to data from the 2021 Census of Population and Canada's National Occupational Classification (NOC) to assess and plot more than 500 public sector occupations on two related measures: **exposure to AI** (the probability that an occupation will interact with AI systems in day-to-day work) and **complementarity to A**I (whether AI use is more likely to support or to replace common occupational tasks). This approach builds on recent literature on task-based automation risk tailored to the unique structure of Canada's public sector.

The research was conducted in 2024–25 and is intended to guide public service leaders in preparing for AI's potential impacts on staffing, training, and service delivery.

What We're Learning

Public Sector Jobs Face Higher AI Exposure

Canada's public sector workers are significantly more likely to be in occupations exposed to AI than the overall Canadian labour force (74% versus 56%). Compared with the overall Canadian workforce, a comparable share of jobs are in high-exposure occupations (25% versus 27%), with tasks more likely to be assisted or augmented by AI.

Risk of Task Substitution Is Greater in the Federal Public Sector

A much larger proportion of public sector jobs are in low-complementarity occupations (49% versus 29%), composed of tasks **more likely to be substituted or replaced**. In particular, the **federal** public sector has a much higher concentration of workers in the high-exposure and low-complementarity quadrant (58%), reflecting a larger share of jobs in business, finance, and administration occupations than in Canada's overall workforce.

High-Complementarity Roles Offer Opportunities for AI Assistance

In the higher-complementarity quadrant, public sector workers in occupational groups such as senior management, natural and applied sciences, education, law, and government services are more likely to see AI as a tool for **assistance** rather than replacement.

High-Value AI Applications Identified

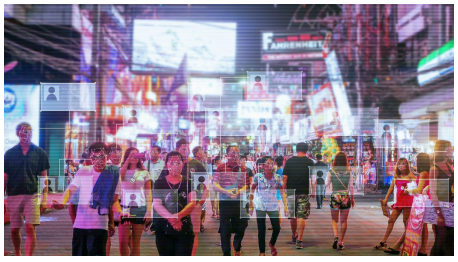
Our assessment of AI applications most useful to the public sector's major occupational groups identifies four categories: interpreting and reproducing language (e.g., reading and writing tasks); recognizing and interpreting images (analytics); applications in abstract strategy games (data analysis and pattern recognition); and interpreting auditory information (speech recognition).

Non-Technical Factors Will Make or Break AI Adoption

Evidence about public sector technology adoption suggests that non-technological factors are critical to success. These include the role of human oversight, access to AI tools and worker training, and the consistent application of core non-technological values and ethical principles to ensure responsible deployment of AI in the public sector.

Why It Matters

In view of these findings, and given the growing emphasis Canada's governments are placing on AI adoption for improved service delivery, internal operations, and cost efficiency, the scale of both **opportunity** and **disruption** in public sector organizations is significant.



Responsibly managing this transition will require clear and transparent strategies, prioritization and risk assessment of immediate opportunities, and a strong commitment to engaging and supporting public sector workers—especially those in high-exposure occupations—throughout the process. These actions will be critical for shaping workforce planning, guiding training investments, and ensuring that AI adoption **strengthens,** rather than **undermines,** the capacity and values of Canada's public service.

State of Skills:
Unleashing AI into the Skills Development Ecosystem

FSC-supported AI tools have bolstered outcomes in skills matching, career development guidance, and recruitment. The overall effectiveness of these tools was underpinned by recognizing and mitigating the inherent bias and discrimination embedded into these technologies.

Read Thematic Report

What's Next

This project builds on earlier FSC-funded research from the Dais on AI's impact on jobs and skills demand in Canada's workforce. It forms part of a broader series of sector-specific deep dives into the implications of artificial intelligence for three sectors of interest: the public sector, the arts and culture sector, and the financial services sector.

Together, these projects will help policymakers, employers, and training providers anticipate the skills and workforce transitions AI will demand, and identify targeted strategies to ensure adoption strengthens both economic performance and social outcomes.

Have questions about our work? Do you need access to a report in English or French? Please contact communications@fsc-ccf.ca.

How to Cite This Report
Dobbs, G. Li, V., Vu,Vi. and Côté, (2025) A. Adoption Ready? The AI Exposure of Jobs and Skills in Canada's Public Sector Workforce. Toronto: Future Skills Centre. https://fsc-ccf.ca/research/adoption-ready/

Funded by the
Government of Canada's
Future Skills Program

Canada

Adoption Ready? The AI Exposure of Jobs and Skills in Canada's Public Sector Workforce is funded by the Government of Canada's Future Skills Program. The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.

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.