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Abstract

A central concern surrounding recent advances in generative artificial intelligence (AI) technologies is their potential to replace human labour, especially in the domain of content creation, such as the production of music, videos, images and text in the cultural industries. However, there is a lack of information regarding how AI may impact workers in these industries. This article attempts to fill this information gap by examining potential occupational exposure to and complementarity with AI in selected cultural industries in Canada. A key finding is that occupations in cultural industries could potentially be more exposed to AI-related job transformation, facing a higher potential for AI substitution compared with jobs in other industries. However, jobs in cultural industries also have a greater potential to be augmented by AI. Although some evidence suggests relatively slower employment growth in certain cultural industries since the mass availability of generative AI tools in late 2022, it remains unclear whether the observed changes are solely driven by AI or result from the cumulative effects of pre-existing trends and other competing economic forces.

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Introduction

The mass availability of generative artificial intelligence (AI) tools has lowered the barriers for producing new creative content such as music, videos, images and text in the cultural industries.¹ This means that the tools for idea creation are potentially more accessible, creative work could be reproduced at a lower marginal cost and global distribution in many cases could be virtually costless (Allen et al. 2025). This could lead to new opportunities and challenges for cultural industries.² As a result, cultural products may be produced at a lower cost, and potential markets for them could expand. Recent and rapid technological advances raise the possibility of AI replacing human labour in content creation; conversely, AI could also complement and augment human creative processes, potentially transforming future roles of workers in cultural industries.

However, there is a lack of information about the **potential** impact of AI on employment across these cultural industries. This article attempts to fill this information gap by leveraging data from the 2021 Census of Population; the Canadian Employer–Employee Dynamics Database; and the Survey of Employment, Payrolls and Hours (SEPH). The focus is on employees in the commercial sector and employed in the following industries in the 2022 version of the North American Industry Classification System (NAICS): video game publishers (513212) and video game design and development services (541515),³ publishing industries (except video game publishers) (513, excluding 513212), sound recording industries (5122) and musical groups and artists (71113), and motion picture and video industries (5121). These industries collectively made up 1% of the Canadian workforce in 2022, although not all workers within them produce purely “cultural” outputs. Except for video game design and development services (541515) and musical groups and artists (71113), these industries represented about 40% of the broader group of information and cultural industries (51) in the 12 months preceding the second quarter of 2025. Over this period, about 12% of all Canadian businesses reported using AI, with businesses in information and cultural industries (36%) being substantially more likely to report using AI. In both cases, however, around 6% of AI adopters reported reducing employment because of AI usage (Bryan et al. 2025).

To analyze the relationship between AI and employment in these industries, this article uses the complementarity-adjusted AI occupational exposure (C-AIOE) index, which categorizes occupations within industries into three groups: (1) high exposure and low complementarity, (2) high exposure and

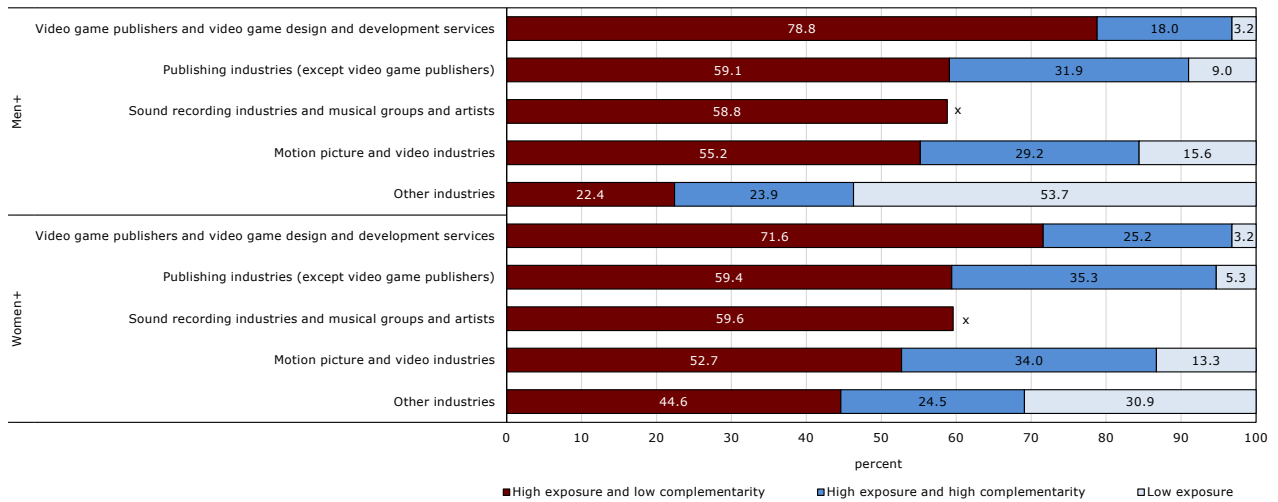
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1. The Directive on Automated Decision-Making defines AI as information technology that performs tasks that would ordinarily require biological brainpower to accomplish, such as making sense of spoken language, learning behaviours or solving problems. Generative AI is a type of AI that produces content such as text, audio, code, videos and images. This content is produced based on information the user inputs, called a “prompt,” which is typically a short instructional text (Government of Canada 2025).
 2. The Canadian Framework for Culture Statistics defines a cultural industry for the purpose of statistical analysis as “creative artistic activity and the goods and services produced by it, and the preservation of heritage” (Daschko and Allen 2011). Firms in cultural industries must satisfy at least one of six criteria: (1) their output is copyrightable; (2) their activities support the creation, production, dissemination or preservation of culture products; (3) they add to or alter the content of a culture product (content services); (4) they preserve, exhibit or interpret human or natural heritage; (5) they provide training or educational services aimed at individuals who create, produce or preserve culture products; or (6) they govern, finance or directly support culture creation, production or dissemination. Examining occupations within Canadian cultural industries comes with some challenges—the biggest being that “culture” is not a recognized industry group in Statistics Canada’s system of economic accounts. Statistics Canada classifies firms according to the North American Industry Classification System (NAICS) by the similarity of the nature of their outputs, not by their place in a specific supply chain or input structure, their labour forces, or their production processes. Thus, firms in the cultural supply chain may be assigned to one of a variety of NAICS codes based on their main economic activity, and codes that include cultural domains may also include many firms producing non-cultural output (Allen et al. 2025).
 3. The commercial sector excludes public administration, educational services, and health care and social assistance (these industries were analyzed by Mehdi and Morissette [2024]). See Allen and Watt (2025) for a more in-depth analysis of the video game industry in Canada.

high complementarity, and (3) low exposure. The index assigns an exposure and complementarity score to each occupation and then classifies it as having high or low exposure and high or low complementarity based on the median exposure and complementarity score across all occupations. Occupational exposure to AI can be thought of as the potential for AI applications to substitute, complement or transform tasks within an occupation. Complementarity can be thought of as the degree to which AI technologies may augment or enhance human labour. The C-AIOE index was developed in the United States by Felten et al. (2021) and Pizzinelli et al. (2023). Mehdi and Morissette (2024) and Mehdi and Frenette (2024, 2026) applied the method to examine the potential impact of AI on the broader Canadian workforce.

Jobs in selected cultural industries are potentially more exposed to generative artificial intelligence technologies

Chart 1 indicates that the selected group of cultural industries—video game publishers and video game design and development services, publishing industries (except video game publishers), sound recording industries and musical groups and artists, and motion picture and video industries—could potentially be more exposed to AI technologies than other sectors of the economy.

Chart 1
Employment distribution across industries by potential artificial intelligence occupational exposure and complementarity, 2021



x suppressed to meet the confidentiality requirements of the *Statistics Act*
Notes: The sample consists of employees aged 18 to 64 living off reserve in private dwellings, excluding full-time members of the Canadian Armed Forces. Public administration, educational services, and health care and social assistance industries were excluded. Starting in 2021, the men+ category includes men (and boys), as well as some non-binary people, and the women+ category includes women (and girls), as well as some non-binary people. Occupational data from the 2021 Census of Population were integrated with the 2021 Canadian Employer–Employee Dynamics Database (CEEDD) to obtain detailed information on industries. Since the 2021 CEEDD is based on tax data, it may not necessarily reflect the same industry of employment as the one observed for the census reference week in May 2021. For this reason, the sample was further restricted to employees who were with the same employer in 2020 and 2021. Industries were grouped according to the 2022 version of the North American Industry Classification System: video game publishers (513212) and video game design and development services (541515), publishing industries (except video game publishers) (513, excluding 513212), sound recording industries (5122) and musical groups and artists (71113), motion picture and video industries (5121), public administration (91), educational services (61), and health care and social assistance (62). Potential artificial intelligence occupational exposure and complementarity were computed using the measure developed by Felten et al. (2021) and Pizzinelli et al. (2023).
Sources: Statistics Canada, Census of Population, 2021, and Canadian Employer–Employee Dynamics Database, 2020 and 2021; and Occupational Information Network.

Occupations in the selected cultural industries skew heavily towards computer systems professionals, graphic artists and musicians, who may face relatively more AI-related job transformation because their jobs are more dependent on interfacing with digital technologies. Over 50% of jobs in the selected cultural industries are potentially highly exposed to and less complementary with AI technologies, versus less than 45% of jobs in other sectors of the economy.⁴ Some of these industries could face a higher likelihood

4. In other industries, women (44.6%) are substantially more likely to hold jobs potentially more exposed to and less complementary with AI than men (22.4%). This is because women in these industries are more likely to hold administrative or office support and coordination roles, which are predicted to be more exposed to and less complementary with AI technologies, according to the C-AIOE measure.

of AI-related job transformation than others. For example, more than 70% of the jobs held by men and women in video game publishing and video game design and development services could potentially be highly exposed to and less complementary with AI.

Conversely, and with the exception of video game publishers and video game design and development services, roughly 30% to 35% of jobs in the selected cultural industries are potentially highly complementary with AI technologies. These jobs have relatively more potential to be augmented or enhanced by AI. By contrast, about 25% of jobs may fall into this category in other industries.

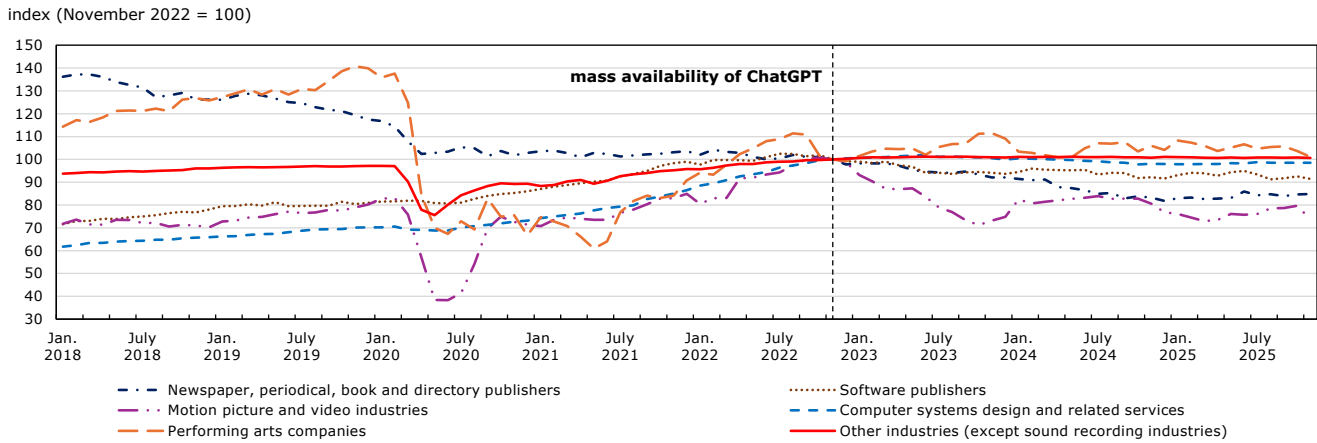
While there is considerable uncertainty surrounding the scale of disruption that could be triggered by AI, it is also important to consider the **quality** of jobs that could potentially face disruption in cultural industries. For example, in 2022, median annual wages (in constant 2025 dollars) for video game publishers and video game design and development services (\$96,000), publishing industries (except video game publishers) (\$85,000), motion picture and video industries (\$59,000), and sound recording industries and musical groups and artists (\$57,000) were substantially higher than median annual wages in other industries (\$50,000). With the exception of motion picture and video industries, jobs in the selected cultural industries were also more likely to be full-time and permanent compared with jobs in other industries.

Employment growth varied substantially across selected cultural industries since the mass availability of generative artificial intelligence technologies

Chart 2 shows monthly employment growth across selected cultural industries from January 2018 to November 2025 relative to the level observed in November 2022 - when ChatGPT became widely available and led to the mass availability of other generative AI tools.⁵ Employment decreased substantially from November 2022 to November 2025 in motion picture and video industries (-26%); newspaper, periodical, book and directory publishers (-15%); and software publishers (-9%). Some of these decreases were a continuation of pre-existing trends. For example, employment in newspaper, periodical, book and directory publishers has been declining since well before November 2022. Employment in other cultural industries grew at a similar rate (1%) as the rest of the economy.

5. Since the monthly employment data are from the SEPH (table 14-10-0220-01), the cultural industry categorization was reduced to the standard four-digit NAICS level (instead of the six-digit level used in the previous section).

Chart 2
Monthly employment growth across selected industries, seasonally adjusted, January 2018 to November 2025



Notes: The dashed vertical line marks the beginning of the mass availability of ChatGPT and other generative artificial intelligence (AI) tools in November 2022. Public administration, educational services, and health care and social assistance industries were excluded. Employment growth is expressed relative to the level observed in November 2022. For example, an index of 70 would indicate a 30% decrease (70 - 100 = -30) in employment relative to the November 2022 level, while an index of 130 would indicate a 30% increase (130 - 100 = 30). Employment growth trend for sound recording industries, which accounted for 0.02% of employment in November 2025, was excluded for ease of presentation. Employment growth trends since November 2022 do not necessarily reflect advances in generative AI alone. Other economic factors also played a role in shaping employment growth trends.

Source: Statistics Canada, table 14-10-0220-01 Employment and average weekly earnings (including overtime) for all employees by industry, monthly, seasonally adjusted, Canada.

However, the mass availability of generative AI tools coincided with other concurrent economic events, such as rapid demographic shifts driven by increased immigration levels in Canada, labour market adjustments following the COVID-19 pandemic (e.g., a substantial drop in job vacancies across industries since mid-2022; Convery et al. 2024) and recent trade tensions with the United States beginning in early 2025 (Statistics Canada 2025). These events may have led to structural changes across Canadian industries. Consequently, the employment trends after November 2022 shown in Chart 2 reflect a confluence of economic factors beyond the mass availability of generative AI tools.

Conclusion

While there is considerable uncertainty regarding the extent to which AI could disrupt the labour market, especially in the domain of content creation, this article finds that the majority of jobs in the selected cultural industries have potentially high exposure to and low complementarity with AI. This suggests greater potential for AI to replace tasks within these occupations. However, some jobs in these industries are also more likely to be classified as high exposure and high complementarity, meaning that there is substantial potential for AI to augment jobs in cultural occupations rather than replace human labour. Although there is some evidence of declining employment in certain cultural industries since the mass availability of generative AI tools in late 2022, it is not clear whether the observed changes are solely driven by AI or instead reflect the cumulative effects of pre-existing trends combined with other competing economic forces.

The estimates presented in this article are largely based on the technological feasibility of replacing job tasks. Employers may not immediately replace human labour with AI even if it is technologically feasible to do so, because of financial, legal and institutional factors. Therefore, exposure to AI does not necessarily imply a risk of job loss. At the very least, it could imply a certain degree of job transformation as generative AI tools hold the potential to reshape some tasks and workflows within occupations. Given the uncertainties surrounding technological progress and implementation, the estimates presented in this

article should be interpreted with caution when drawing any conclusions regarding the likelihood of AI replacing jobs in cultural industries.

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