Future Skills Centre | Centre des Compétences futures

PROJECT INSIGHTS REPORT

Built to scale: Assessing microcredentials for digital sector professionals

Tech and Automation

EXECUTIVE SUMMARY

Because they're fast and relatively affordable, microcredentials have been touted as a promising way to upskill, retrain, or formalize competency-based learning. However, evidence is inconclusive about the impact of microcredentials for workers who get them or whether employers widely recognize microcredentials as a valid measure of skill acquisition.

This project explored the uptake of microcredentials within digitally intensive industries in Canada, a field projected to grow and change in coming years. The project used a novel form of labour market information — LinkedIn profiles — to discern differences in skill, occupational seniority, and microcredential certification in the tech labour market in Canada.

COLLABORATORS

Steven Tobin
Strategic Advisor at FSC

Laura McDonough
Associate Director of Knowledge Mobilization & Insights at FSC

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PARTNERS

Brookfield Institute for Innovation and Entrepreneurship
The Dais

LOCATIONS

Pan-Canadian

INVESTMENT

$494,000

Research report: Built to Scale? Microcredentials Use Among Digital Professional

In addition to making the case for leveraging private sources of LMI to answer industry-specific questions, the project showed that digital professionals are using microcredentials to show relevant skills — especially those emerging important due to changing technologies. However, more needs to be done to better understand the value employers place on existing microcredentials in the tech labour market — especially given the project found no differences in job seniority among those who held and listed microcredentials vs. those who did not, across data science and software professions.

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KEY INSIGHT #1

LinkedIn data indicates that approximately 1 in 29 data scientists (3.4%) and 1 in 31 software professionals (3.2%) in Canada reported a microcredential on their profile.

KEY INSIGHT #2

Microcredentials were most often used to highlight skills and tools that have only emerged in popularity in the past 10 years.

KEY INSIGHT #3

Canadian digital professionals with more experience (six or more years in the occupation) were more likely to report completion of a microcredential.

The Issue

In response to the rapid pace of digitization of the economy, evolving labour market and changing employer skills demands, public universities and colleges and other for-profit education and training providers are rolling out new programs to equip students and workers with in-demand skills. They often promise applied curriculum, convenient hybrid or online learning platforms, and outcomes including higher wages and career advancement opportunities. Microcredentials have garnered a lot of interest — short in duration, focusing on a particular skill, and often affordable compared to university or college degree or diploma programs that take substantial time and financial resources and effort to obtain.

Microcredentials have become a major priority for policymakers, post-secondary institutions and employers, viewed as a novel solution to upskill, retrain or formalize competency-based learning. While some provinces, and institutions have introduced microcredential frameworks, Canada still lacks a standardized definition and quality assurance model for this new category of credentials, leaving Canadian learners and upskilling workers uncertain about this new marketplace of programs and their effect on learning pathways, skill development and career trajectories. Canada is in a skills shortage for highly technical digital professionals. Strong growth is forecast in the digital technology industry and the need for professionals with skills in software development and artificial intelligence globally. Given the rapidly changing technical tools and products of the technology economy, microcredentials have strong potential to support the development of digitally intensive skills and workers. The supply of digitally intensive labour is a relatively new market and fast-moving industry for skill and concept adoption. Microcredentials could be both a time and cost-effective option for professionals to adapt to a constantly shifting demand for new skills and technologies.

What We're Investigating

This report assessed the current uptake of microcredentials within digitally intensive industries in Canada and the profile and career trajectories of those who earn microcredentials in the tech labour market.

The project included a scan of existing research on microcredentials, exploring the labour market impacts and implications for microcredential policy. This included English-language studies, grey literature and non-peer-reviewed journal articles.

The project used LinkedIn profile data to discern differences in skill, occupational seniority, and microcredential certification that would otherwise not be identifiable in traditional publicly provisioned LMI sources. The data for this study was accessed through LinkedIn Talent Insights (LTI), a data visualization and aggregation platform for LinkedIn profile data that enables researchers and human resource professionals to understand labour market information that is self-reported by LinkedIn users.

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What We're Learning

Digital professionals are using microcredentials to signal relevant skills. Canadian digital-sector professionals with microcredentials on LinkedIn were more likely to list more modern skills and competencies related to newer technologies. Data-science professionals with microcredentials tended to report skills and tools that have become more popular in the past 10 years, such as machine learning and Tableau, while software professions report having skills in design and user experience.

Microcredential holders were more likely to have post-secondary degrees in non-STEM fields of study, especially Masters in Business Administration, and hold higher educational attainment relative to the rest of the professionals in their respective occupations. Despite this, there were no differences found in job seniority among those who hold microcredentials vs. those that do not, across data-science and software professions.

The appropriate use of private sources of LMI. LinkedIn profile data offers a tool to investigate digital labour market trends and supplement traditional sources. This LMI source allows for a more granular understanding of skills, education and occupational information not collected elsewhere in Canada. However, the conclusions of this project cannot be extrapolated to all occupations. LinkedIn data must be used with discretion when exploring occupations and skills that are less prevalent on online job platforms. Despite the limitations of self-reported data, this novel LMI source can provide significant value to labour market and education researchers and policymakers.

Why It Matters

There remain many questions about the value and impact of microcredentials on learning pathways, skill development and career trajectories.

This project provides an occupation-specific look at microcredentials from the perspective of digital workers. Microcredentials have the potential to be versatile, catering to diverse technical competencies within data-science and software development professions, and may be an accessible means to develop new competencies, appealing to current professionals and those transitioning into data-science and software domains from adjacent occupations and fields of study. Creators and providers of microcredentials for digital professionals can use this information to target outreach efforts and modify program elements to cater to these groups.

However, more needs to be done to better understand the value that digital employers place on existing microcredentials — especially given that the project found no differences in job seniority among those who held and listed microcredentials vs. those who did not, across data-science and software professions.

This project is also relevant for its methods, providing detail for researchers in the skills ecosystem who want to explore the potential of private sources of LMI to answer questions that traditional sources are not well suited for.

What's Next

The overall FSC-funded research project and partnership with Dais, "Jobs, skills and technology change," seeks to understand how jobs and skills across Canada are affected by technological change, such as automation and digital augmentation, to help companies and people gain the skills they need to adapt and thrive in an increasingly innovation-driven economy. This report is one of four in this series:

- Race alongside the machines: Occupational digitalization trends in Canada, 2006-2021
- Mind the Gap: Compensation Disparity Between Canadian and American Technology Workers
- Excelling at work: Post-pandemic demand for digital and non-digital skills in Canada

HOW TO CITE THIS REPORT

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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.