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2020 – 2021
PROJECT SNAPSHOT



Non-linear PSE Pathways and Credential Accumulation: Statistical Portrait and Evaluation of Labour Market Outcomes

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Keywords

non-linear PSE pathways; credential accumulation; student mobility; labour market outcomes; student transfers; inequality.

Overview

Research on post-secondary education (PSE) pathways often focuses on traditional students entering single institutions or staying within specific regions and tracking their movements over relatively short periods of time. In the few cases where Canadian research has documented the linkages between such pathways and labor market outcomes, the research focuses on the years immediately following graduation. Such focus ignores credential accumulation that play out later in the life course. This research overcomes these limitations using the 2016 Longitudinal and International Study of Adults (LISA). It examines both the predictors of non-linear post-secondary pathway uptake, as well as the labour market outcomes associated with such pathways.

Why It Matters

There are large earnings gaps between respondents whose first post-secondary educational credentials are a trade/vocational/apprenticeship (TVA) certificate, a college certificate or diploma, or a bachelor's degree or higher, in part driven by the pathways associated with that first credential. No pathway appears to help close the gap between TVA or college graduates and bachelor graduates, except in the case of a small number of graduates with a bachelor's degree who go on to complete a second credential below a bachelor's degree. These findings point in a few directions:

- Policies and programs that support transfer pathways from TVA or college to bachelor programs may translate into higher income levels not only because a bachelor's degree is associated with a higher income level, but because bachelor graduates are more likely to then complete a graduate degree.
- The design of programs for credit transfer should take into consideration the patterns identified in this report in terms of drivers of different pathways and associated labour market outcomes. One may ask whether a college-to-university transfer is more beneficial than graduating from college before completing a bachelor's program and under which circumstances. For example, credit transfer and recognition from a completed college program to a bachelor program may facilitate the successful completion of a bachelor program. But it may also support the subsequent completion of a graduate degree, especially knowing that so few college graduates end up completing a graduate degree.

Key Findings

Credential Accumulation

One primary finding of this research is that a substantial amount of credential accumulation occurs well beyond the traditional ages associated with post-secondary education. Many individuals obtain their first credentials during or after their mid-20s (Figure 1), and approximately half of second credentials acquisition occurs between an individual’s late 20s to mid-30s (Figure 2).

Figure 1: Cumulative share of population with a first PSE credential at different ages

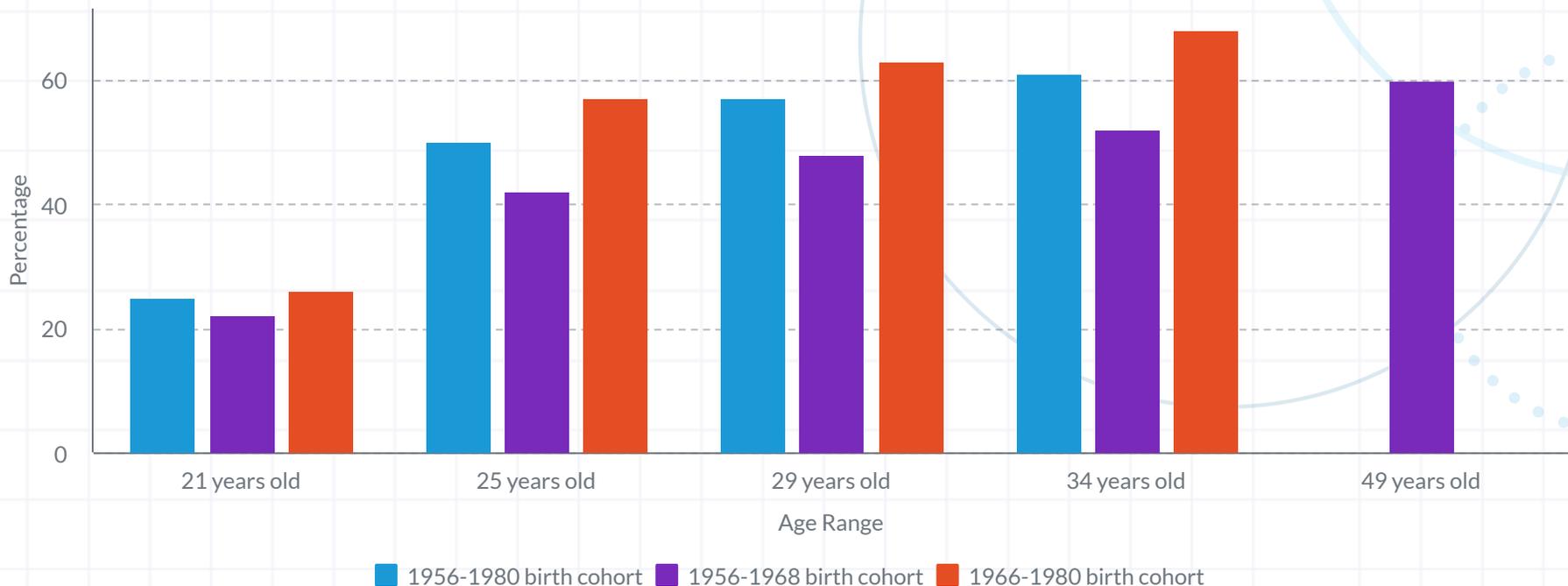
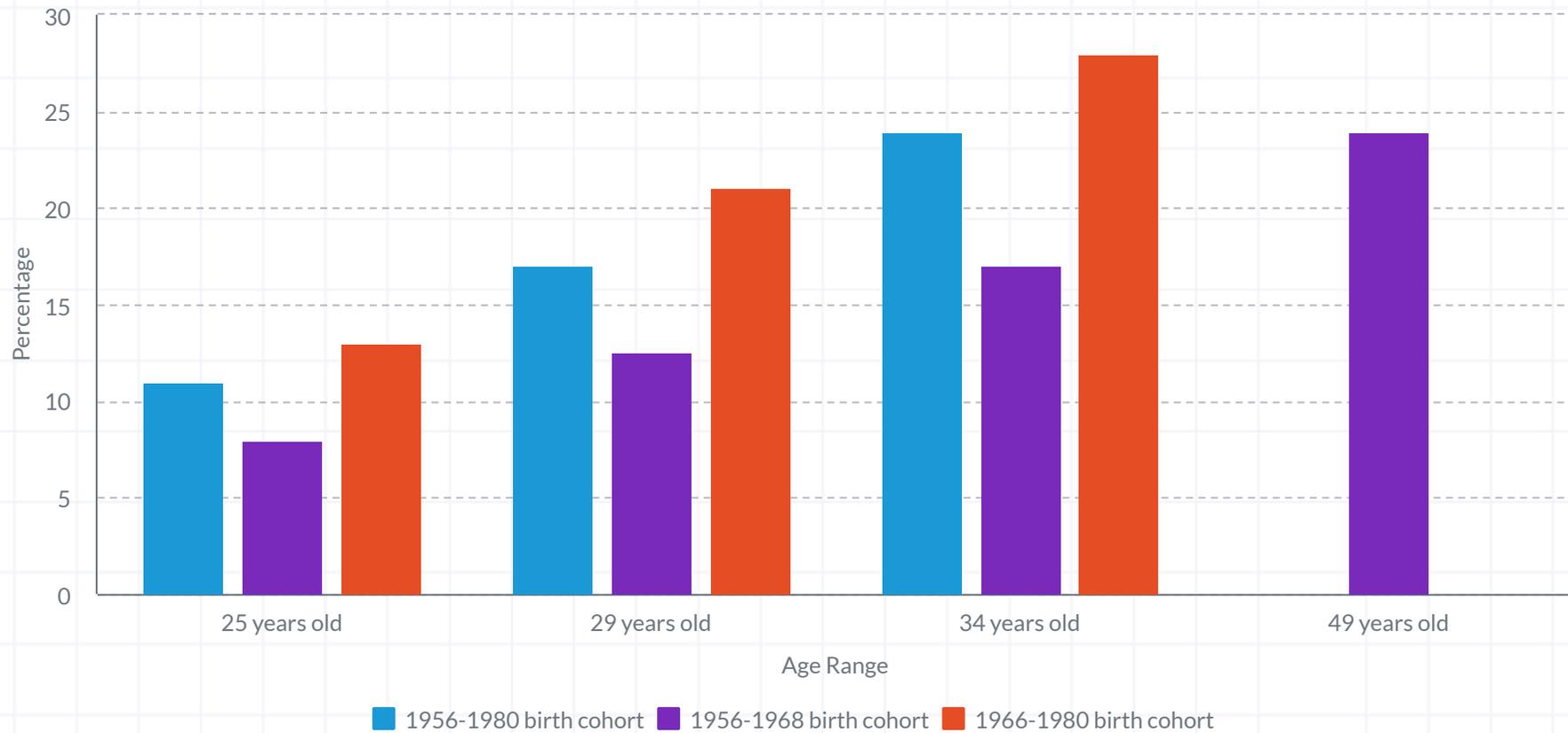


Figure 2: Cumulative share of population with a second PSE credential at different ages



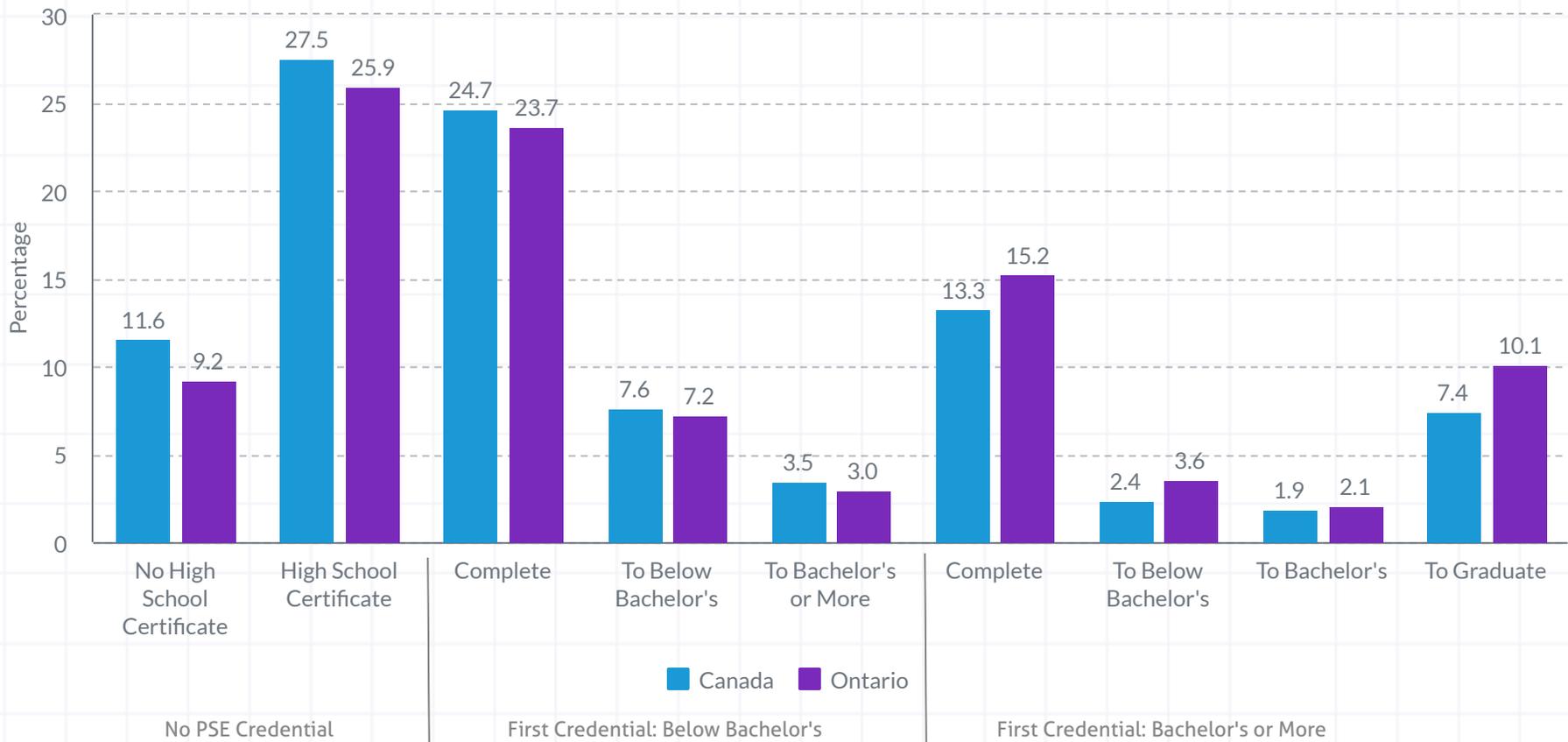
PSE Pathways with Multiple Credentials

The most common (23.7%) educational pathway among 35-59 year-olds in Ontario is a post-secondary credential below a bachelor's degree (see Figure 3). The second most common pathway among this group is a bachelor's degree with no further PSE (15.2%). From here, we also see a number of non-linear pathways commonly studied within the transfer literature:

- 7.2% of Ontario residents completed a first credential below the bachelor's level and then obtained a second credential at the same level (e.g., lateral movement).
- 3.0% of Ontario residents completed a first credential at below the bachelor's level and then obtained a credential at the bachelor's level or higher (e.g., vertical movement).
- 3.6% of Ontario residents obtained a bachelor's degree and then obtained a second credential at below the bachelor's level (e.g., reverse flows).
- 2.1% of Ontario residents obtained a bachelor's degree and then obtained a second credential at same level (e.g., lateral movement).

In total, 15.9% of all Ontario adults (35-59 years old) in 2016 followed a non-linear educational pathway. This represents 24.5% of all PSE graduates.

Figure 3: Credential accumulation pathways, 35-59 years old.

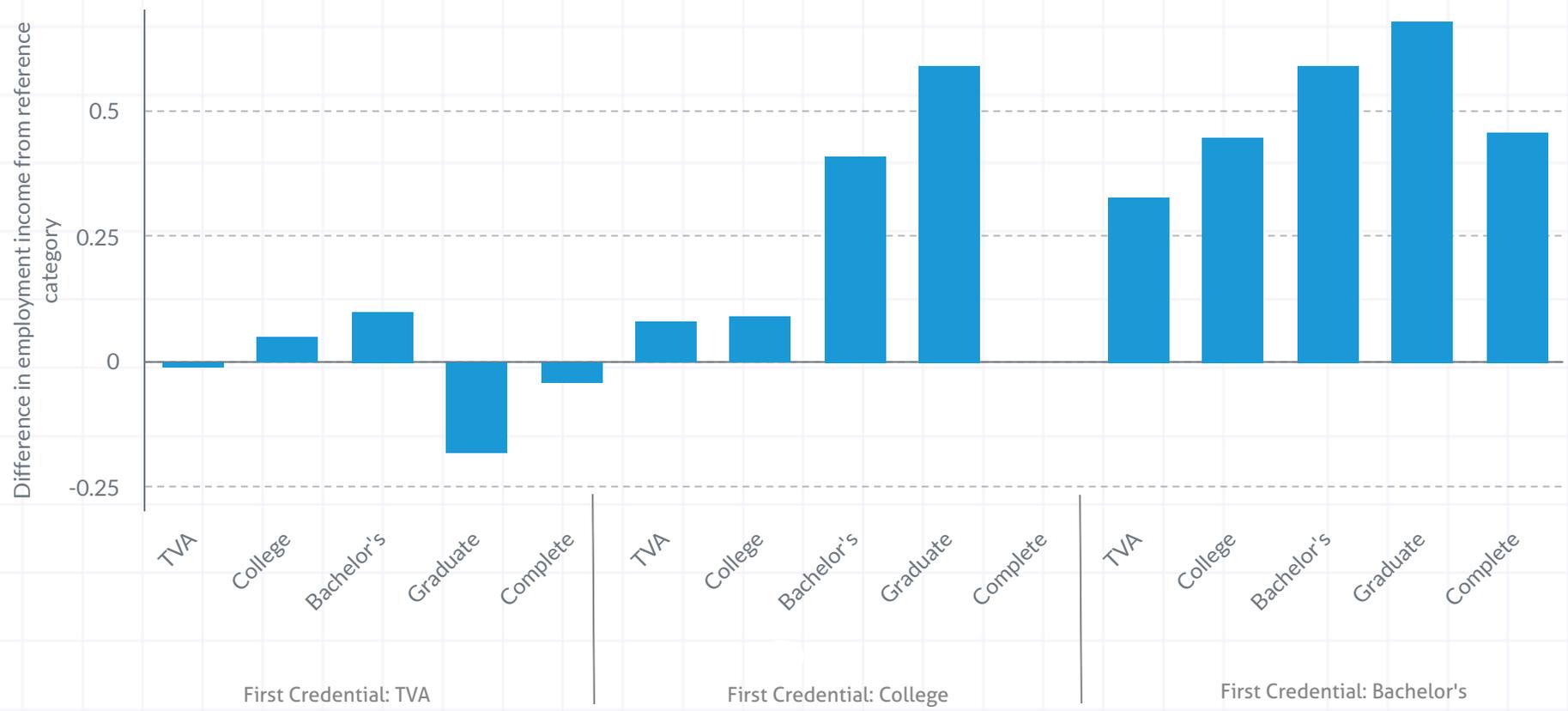


Labour Market Outcomes

The second part of our analysis explores the relationship between post-secondary pathways and employment income. Figure 4 displays the average income by pathway, net of observed characteristics. The reference category is respondents who completed a single credential at the college level (or other non-university certificate or diploma). Two main patterns are worth highlighting:

- Those who complete a single bachelor's degree have an average income over 10% higher than those who complete a second credential at the college or TVA level after also obtaining a first credential at the bachelor's level. Meanwhile, completing a graduate degree provides a relative income boost.
- Among those who first obtain a college-level credential, any additional credential provides an income boost. For this group, completing a bachelor's degree as a second credential is associated with returns more than twice as large as a second credential at the college or TVA level.
- For those that start at the TVA level, second credentials have a relatively mild effect on income.

Figure 4: Relationship between PSE pathway and annual employment income in 2015 *



*Detailed pathways from model with interaction between level of first credential and the highest credential subsequently obtained (second, third, or fourth), 1956-1980 birth cohorts. Note: the reference group for all plotted coefficients is First credential: College > Complete. All PSE credentials completed at survey date are counted. The level of the second credential is the level of the highest PSE credential completed after the first credential (if any). "Complete" means that a single PSE credential was completed (no second credential). All models include controls for sociodemographic characteristics (parental education, gender, marital status immigration status of self and of parents, visible minority status, Indigenous identity), province of residence in 2016, age, age at completion of last PSE credential, dummies for employment pattern in 2015, and a quadratic work experience term. Sample excludes respondents with zero weeks of employment in 2015.

Further Reading

To read the full report, please [visit the report homepage](#).

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To read the full report, please visit:

<https://oncat.ca/en/projects/multi-credentialed-graduates-canada-employment-earnings-and-student-loan-holding>



Established in 2011, the Ontario Council on Articulation and Transfer (ONCAT) was created to enhance academic pathways and reduce barriers for students looking to transfer among Ontario's public colleges, universities, and Indigenous Institutes. ONCAT is funded by the Government of Ontario.

This snapshot was prepared for and funded by ONCAT. The opinions expressed within are those of the authors and do not necessarily reflect those of ONCAT or the Government of Ontario. © Copyright, ONCAT, 2021.