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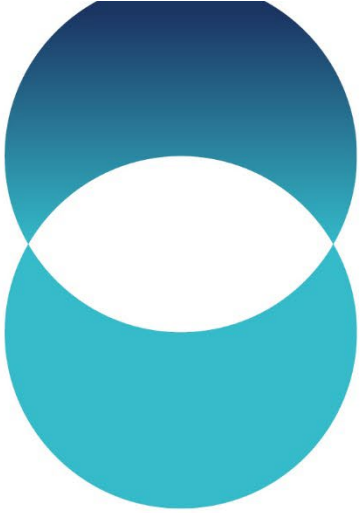

From Newcomers to Game Changers

Scorecard Methodology

Prepared by Signal49 Research
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Methodology

Data

We used Statistics Canada's Labour Force Survey data for this study.[1] Our analysis spanned 2022 to 2024 survey years and covered the 28 census subdivisions with the relevant data. *Census subdivision* is the general term for municipalities or areas treated as municipal equivalents for statistical purposes.[2] For brevity, we use the term *municipality*.

Our analysis focused on working-age individuals (15–64 years) who were Canadian-born citizens, permanent residents, or naturalized citizens. We excluded temporary residents because the Labour Force Survey does not disaggregate temporary foreign workers and international students. These groups are too distinct from each other to make valid inferences when treated as a single category. In addition, not all underutilization indicators we used capture temporary foreign workers' labour market experience. Many of these individuals can only enter Canada with a full-time job offer, which is likely to be time-limited, given the nature of work permits.

Skill utilization indicators

We measured two dimensions of skill utilization for both immigrants and Canadian-born citizens: skill mismatch (one indicator) and skill wastage (three indicators).

We used all available skill underutilization indicators except *worker discouragement*—another form of skill wastage. This captures people who want to work but who don't seek employment because they're discouraged by the reality or their perception of the labour market.[3] We excluded this indicator because Statistics Canada had flagged much of it as unreliable.

Skill mismatch (overeducation)

Skill mismatch represents the share of workers who were overeducated for their job. This occurs when an individual's primary job requires less education than they hold.

We measured overeducation by comparing an individual's highest education level (foreign or Canadian) to their job's Training, Education, Experience and Responsibilities (TEER) classification .[4] For instance, a bachelor's degree holder working in a position requiring only a high school diploma would be considered overeducated for their job.

The overeducation rate represents the number of overeducated workers as a percentage of all employed individuals.

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[1] Statistics Canada, "Guide to the Labour Force Survey."

[2] Statistics Canada, "Dictionary, Census of Population, 2021 – Census Subdivision (CSD)."

[3] Banerjee and others, "Use it or lose it."

[4] Immigration, Refugees and Citizenship Canada, "Find Your National Occupational Classification (NOC)."

Skill wastage

Skill wastage represents the share of working-age individuals who were (a) unemployed, (b) in temporary employment, or (c) working part time involuntarily.

Unemployment

People were considered unemployed if, during the reference week of the Labour Force Survey, they were without work, had actively looked for work in the past four weeks, and were available for work.[5] This included individuals on temporary layoff and those set to start a new job within four weeks.

The unemployment rate represents the number of unemployed people as a percentage of the labour force (employed plus unemployed individuals).

Temporary employment

A temporary job has a predetermined end date or will end once a specified project is completed.[6] This includes seasonal jobs, term or contract jobs (including those done through temporary help agencies), casual jobs, and other temporary work arrangements.

Seasonal jobs have specified hours and predetermined end dates but recur on an annual basis. Term and contract jobs have specified hours and predetermined end dates. Casual jobs have no specified hours or set work periods. Other temporary work arrangements include jobs outside these categories but of a similar nature.

The temporary employment rate represents the number of temporary workers as a percentage of all employed individuals.

Involuntary part-time employment

Involuntary part-time workers are those who work fewer than 30 hours per week because of poor business conditions or because they could not find full-time work (this includes both those who actively searched for full-time work in the past four weeks and those who did not).[7] In contrast, voluntary part-time workers cite other reasons for their reduced hours, though these may include situational constraints, such as caring for children, attending school, or managing a personal illness.

The involuntary part-time employment rate represents the number of involuntary part-time workers as a percentage of all people working part time in their main job.

Data analysis

Skill utilization in immigrants vs. Canadian-born citizens

To determine whether immigrants experienced significantly worse skill underutilization than Canadian-born citizens, we used two-proportion z-tests. Statistically significant differences are marked with an asterisk (*). This means there is less than a 5 per cent probability that the group difference occurred by chance.

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[5] Statistics Canada, “Guide to the Labour Force Survey.”

[6] Statistics Canada.

[7] Statistics Canada.

The number of people in an analysis can impact statistical significance.[8] If the sample is too small, the researcher can miss a meaningful difference. If the sample is sufficiently large, trivial differences can be statistically significant. We therefore present Cohen's *h* alongside our significance tests. Cohen's *h* is an effect size metric that measures the magnitude of the difference between two proportions.[9] Values of 0.20, 0.50, and 0.80 represent small, medium, and large differences, respectively. Values below 0.20 represent trivial differences.

Immigrant skill utilization scorecard grades

We performed the following five steps to construct scorecard grades for immigrants:

1. **Indicator measurement**: To receive a grade, municipalities needed data on at least three of the four skill utilization indicators. Most met this threshold across all years examined (see Table 1 of our analysis).
2. **Standardization**: Our four indicators are based on different populations—one examines the entire labour force, two examine all employed people, and the other examines part-time workers. To meaningfully combine these indicators, we needed to convert them to a common scale. We also needed a fixed reference point to track how each municipality's performance changes over time.
3. We chose 2022 as our benchmark year and used z-score standardization. We standardized the 2023 and 2024 indicator values to the 2022 baseline, converting each value into a z-score using the 2022 mean and standard deviation for that indicator. Hence, indicator z-scores reflect a municipality's performance relative to the 2022 baseline for that indicator across all municipalities:

$$z = \frac{\text{Indicator value} - \text{2022 indicator average}}{\text{2022 indicator standard deviation}}$$

4. **Averaging:** For each municipality, we averaged indicator z-scores to get a composite z-score that reflects overall performance.
5. **Reversing:** Composite z-scores representing skill underutilization (negative) were reversed to reflect skill utilization (positive).
6. **Grading:** Reversed composite z-scores were categorized into letter grades as follows:
   A = more than 1 standard deviation above the 2022 average
   B = within 1 standard deviation above the 2022 average
   C = within 1 standard deviation below the 2022 average
   D = more than 1 standard deviation below the 2022 average

   Hence, positive z-scores indicate better performance than the 2022 average, while negative z-scores indicate worse performance than the 2022 average.

[8] Sullivan and Feinn, "Using Effect Size—or Why the P Value Is Not Enough."
[9] Lee, "Alternatives to P value."

In 2022, roughly 68 per cent of municipalities scored within 1 standard deviation of the 2022 mean (earning B or C grades). This is because we standardized grades to the normal distribution. Shifts from this baseline mid-point in later years allow for more A and D grades.

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