

Change in occupation mix: Overview by sector 2006 - 2016

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Highlights

- **Across all sectors in Ontario's non-metro census divisions, the share of employment in occupations requiring a university degree (i.e., skill Group "A") declined relative to the change at the Ontario level. This occurred because employment in Skill Group "A" increased less in non-metro census divisions.**
- **However, in 6 of the 19 sectors, the share of non-metro employment in Skill Group "A" increased, relative to the change in share at the Ontario level.**
- **These results indicate a different change in the needs for the level of training or academic credentials in the various sectors in non-metro Ontario.**
- **Cautionary caveat: We are using a delineation of skills as delineated by Employment and Skills Development Canada that is based on the level of educational attainment usually required for a given occupation. However, non-metro workers know that heavy equipment mechanics (Skill Group "B") are not less skilled than teachers (Skill Group "A") – the required skills are simply different.**

Why look at the mix of occupations?

Shifts in the kinds of occupations, types of work and the prerequisite for certificates or degrees to qualify for employment is an ever-evolving characteristic of the economy. Broadly, the trends of decreasing manual labour ushered in by the industrial revolution, along with advances in information technology and the rising share of service rather than goods-producing industries, has brought along with it the requirement for more skilled and knowledge workers. There is also a parallel phenomenon of "credentialism" where jobs once requiring high school diplomas now require university degrees.

The objective of this Fact Sheet is to summarize¹ the change in the mix of occupations, grouped into skill groups² within each industry from 2006 to 2016³.

¹ The details for each industry sector are included in an accompanying **Appendix: Tables and Charts showing the Level and Change of Employment by Skill Group for each Industry Sector, by Type of Census Division, Ontario, 2006 – 2016.**

² Occupations are classified to Skill Groups based on: **Employment and Skills Development Canada. National Occupational Classification Matrix 2011** (<http://noc.esdc.gc.ca/English/NOC/Matrix2011.aspx?ver=11>). **Group A** usually requires a university education; **Group B** usually requires a college education or apprenticeship training; **Group C** usually requires a secondary school or occupation-specific training; **Group D** usually requires on-the-job training; and **Group O** includes management occupations & self-employed individuals.

³ From 1991 to 2001 in most industries, the share of employment in higher-skilled jobs increased (slightly) more in urban areas than in rural areas. See Erik Magnusson and Alessandro Alasia. (2004) "Occupational patterns within industry groups: A rural-urban comparison." **Rural and Small Town Canada Analysis Bulletin** Vol. 5, No. 6 (Ottawa: Statistics Canada, Catalogue no. 21-006-

Findings

Across all sectors, the change in the relative intensity of employment in a given occupation group (or skill group) (i.e., the change in the location quotient⁴) showed a relative increase in employment in Skill Groups "B" and "C" in non-metro⁵ census divisions (CDs) but a decrease in Skill Groups "O", "A" and "D" (last line of Table 1).

If we use Skill Group "A" (i.e., occupations that usually require a university education) as an indicator of the regional change in skills (or perhaps simply "credentials") in a given sector, we see a decrease in 13 of 19 sectors (compared to the change at the Ontario level) and an increase in 6 of 19 sectors (all of which were service-producing sectors).

However, in non-metro CDs, only 14% of employment was in Skill Group "A" in 2016⁶ (up from

XIE) (www.statcan.gc.ca/bsolc/english/bsolc?catno=21-006-X&CHROPG=1).

⁴ A location quotient (LQ) calculates a relative intensity. When we take the share of employment in a occupation (skill) group in a given sector in given type of area (e.g. non-metro CDs) and divide by the share of employment in this skill group in this sector for Ontario as a whole (and multiply by 100), we generate an LQ (or relative intensity) as measure of the relative intensity of non-metro employment in the given occupation group in the given sector, relative to 100 for Ontario as a whole. The positive change in the LQ may be interpreted as a relative increase in required credentials and a negative shift in an LQ may be interpreted as a relative decline in credentialization for non-metro in the given industry sector.

⁵ Defined in "Rural Ontario's Demography: Census Update 2016." **Focus on Rural Ontario** (Guelph: Rural Ontario Institute, March) (<http://www.ruralontarioinstitute.ca/focus-on-rural-ontario.aspx>).

⁶ See Table 1 in the accompanying **Focus on Rural Ontario "Change in occupation mix: All sectors, 2006 - 2016"**.

13% in 2006), whereas about one-third of employment was in Skill Group “B” and one-third was in Skill Group “C”.

Within non-metro CDs, a relative increase in the share of employment in Skill Group “B” occurred in 9 of the 19 sectors from 2006 to 2016.

Within non-metro CDs, a relative increase in the share of employment in Skill Group “C” occurred in 14 of the 19 sectors from 2006 to 2016.

For any given skill group, there were sectors where the relative intensity increased in non-metro CDs and there were sectors where the relative intensity declined. Thus, there was no case where non-metro CDs showed an increase or a decrease in relative intensity of a skill group across every sector in the 2006 to 2016 period. This diversity in the direction of change reflected in the different sectors suggests a complex dynamic - and perhaps changing circumstances - in the way the work is being accomplished through changing roles and functions in particular sectors. If “credentialism” or inflation in qualification requirements for the same types of jobs was the only explanation for what was happening, we might expect to see more uniformity across the board.

Summary

From 2006 to 2016, the relative intensity of employment in occupations requiring post-secondary qualifications declined, overall, in non-metro census divisions even though the absolute numbers increased slightly (see Fact Sheet number?). This implies non-metro employers are not increasing, or do not need to increase, their workers in this occupation group as quickly as is the case for Ontario as a whole.

Occupation classified as Skill Group “B” (requiring

Table 1. Change in share (or percent) of employment in a skill¹ group, relative to the change for Ontario as a whole (i.e. change in location quotient^{2,3}) for each industry sector for non-metro census divisions, Ontario, 2006 and 2016

	Industry sector	Skill group ¹				
		O	A	B	C	D
		Among non-metro census divisions ⁴ , did the share (or percent) of employment in the occupations in this skill group go up or down, relative to the change in the share at the Ontario level (i.e. change in location quotient ^{2,3})				
11	Agriculture, forestry, fishing and hunting	Up	Down	Down	Up	Down
21	Mining, quarrying and oil and gas extraction	Down	Down	No change	Up	Down
22	Utilities	Up	Down	Down	Up	Up
23	Construction	Up	Down	Up	Up	Down
31-33	Manufacturing	Down	Down	Up	Up	Down
41	Wholesale trade	Down	Up	Up	No change	Up
44-45	Retail trade	Down	Up	Up	Up	Up
48-49	Transportation and warehousing	Down	Up	Down	Up	Down
51	Information and cultural industries	Up	Up	Up	Up	Down
52	Finance and insurance	Down	Down	Up	Up	Up
53	Real estate and rental and leasing	Down	Up	Up	Down	Up
54	Professional, scientific and technical services	Up	Down	Up	Up	Up
56	Administrative and support, waste management and remediation services	Up	Down	Down	Down	Up
61	Educational services	Up	Down	Down	Up	Up
62	Health care and social services	Down	Down	No change	Up	Up
71	Arts, entertainment and recreation	Up	Up	Down	Up	Down
72	Accommodation and food services	Up	Down	Down	Down	No change
81	Other (personal) services	Up	Down	Up	Down	Up
91	Public Administration	No change	Down	No change	Up	No change
Total	All sectors	Down	Down	Up	Up	Down

1. Occupations are classified to Skill Groups based on: Employment and Skills Development Canada. **National Occupational Classification Matrix 2011** (<http://noc.esdc.gc.ca/English/NOC/Matrix2011.aspx?ver=11>). **Group A** usually requires a university education; **Group B** usually requires a college education or apprenticeship training; **Group C** usually requires a secondary school or occupation-specific training; **Group D** usually requires on-the-job training; **Group O** includes management occupations.

2. A location quotient is a measure, for each industry sector, of the relative intensity of employment in a skill group in, say, non-metro census divisions, compared to the employment in the skill group for Ontario as a whole. It is calculated as the percent of employment in a skill group in an industry sector for, say, non-metro census divisions, divided by the percent of employment in the skill group in the industry sector for Ontario as a whole (and then multiplied by 100).

3. The change in the location quotient indicates whether a given geographic group (e.g., non-metro census divisions) reported an increase or decrease in the percent of their employment in a given skill group, relative to Ontario as a whole.

4. The classification of census divisions is shown in Table 2 in "Rural Ontario's Demography: Census Update to 2016" **Focus on Rural Ontario** (March, 2017).

Source: OMAFRA, EMSI ANALYST database.

college diplomas or trades/apprenticeship qualifications) are becoming relatively more intense (i.e., a relatively higher share) in non-metro Ontario, compared to the change for the Ontario workforce as a whole. The same pattern is occurring for occupation in Skill Group “C”.

The pattern of whether non-metro is leading or lagging Ontario as a whole is not uniform across all sectors within any particular skill group.

Rural Ontario Institute gratefully acknowledges the work of Ray Bollman in preparing this edition of [Focus on Rural Ontario](#). Questions on data sources can be directed to RayD.Bollman@sasktel.net. Any comments or discussions can be directed to NRagelie@RuralOntarioInstitute.ca