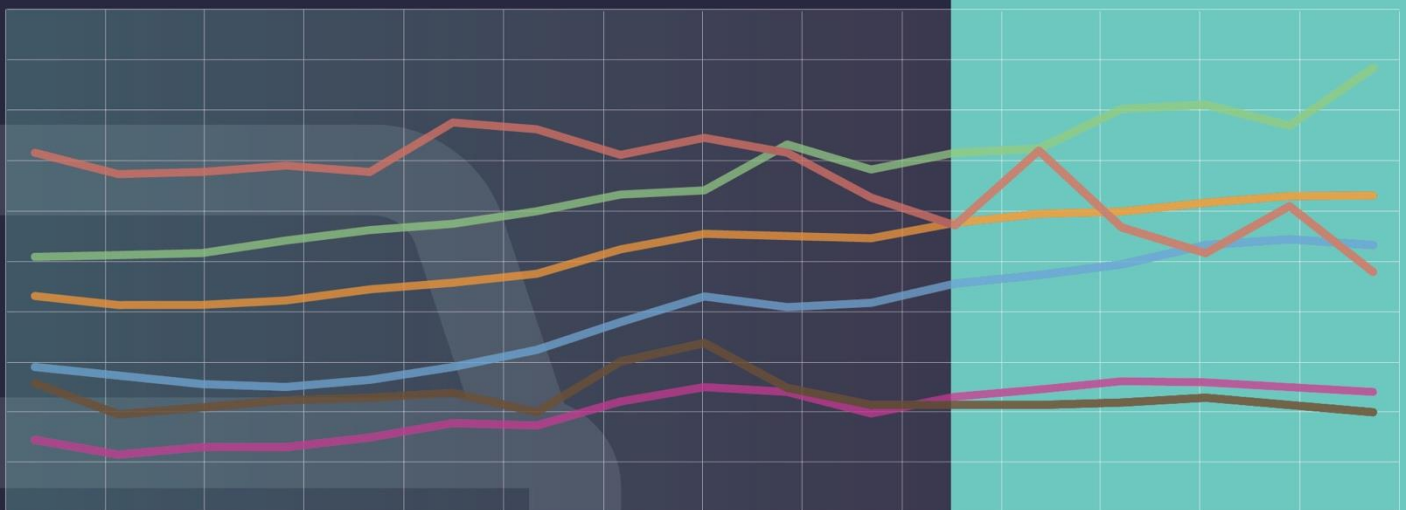TREND REPORT

AUTOMOTIVE
INDUSTRY LABOUR
MARKET ANALYSIS

Women's Participation
in Canada's Automotive Industry

The project is a collaboration of the Canadian Skills Training and Employment Coalition, Prism Economics and Analysis, and the Automotive Policy Research Centre.

April 2020

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EXECUTIVE SUMMARY

This paper follows up on a fall 2019 Focal initiative paper entitled *Women, Youth and Indigenous Peoples' Employment in Canada's Automotive Sector* and takes a closer look at women's participation and their employment characteristics in the automotive manufacturing sector. Other papers published as part of this initiative used a broad definition of the sector that included not only motor vehicle and assembly, but also a share of associated industries such as foundries, metal fabricators, and producers of plastic, glass, rubber, and electronic parts. Due to data availability, this paper uses a more traditional definition of the sector: NAIC 3361 (motor vehicle manufacturing or Assembly) and NAIC 3363 (motor vehicle parts manufacturing), as a proxy when looking at direct employment. However, when we looked at the potential labour supply of women to the sector, we used the 49 key occupations identified from the National Occupational Classification list and outlined in our *Post-Secondary Education* report, which we are also using in our labour forecast. The employment data for the 49 NOCs do not simply look at the people employed in the automotive sector but in the entire Canadian labour force in order to better understand labour supply.

Understanding labour market participation by women may help employers understand new sources of labour and inform recruitment strategies in the automotive sector; it may inform government policy and programming; and it may support corporate goals that will improve access to jobs, gender diversity, and equity in employment for women.

Representation of women:
Women are under-represented in Canada's automotive industry with slightly lower representation in Assembly (23%) than in Parts production (25%). This stands in contrast to the proportion of women in Canada's broader labour force (48%), but is comparable to the broader manufacturing (28%) labour force. The earlier paper on Diversity, *Women, Youth and Indigenous Peoples' Employment in Canada's Automotive Sector* used 2017 data. In this paper we used more recent data when it was available, which will account for some differences.

- A review of the labour market data provides a profile of labour market participation for various segments of the female workforce who may be sources of recruitment.

  - Female youth: The proportion of young women (aged 15-24) employed in the automotive sector is very low, 6% in Assembly (3361) and 7% in Parts production (3363), and is reflective of broader labour market trends of an aging workforce and reiterates the need to attract youth to the sector.

  - Immigrant women: The automotive sector has been hiring immigrants including immigrant women to meet labour market needs. In Parts production (3363), 10% of the employed were immigrant women and 8% in Assembly (3361); comparable with 10% in Manufacturing and 12% of immigrant women employed in the overall labour market. In the female workforce, 33% of all women employed in Assembly and 40% in Parts production were immigrants, in line with the overall manufacturing sector (36%).

  - Visible Minority status: Based on 2016 Census[1] data, 10.2% of female income recipients identified as visible minority. In the automotive sector, visible minority women as a share of income recipients in Parts production (3363) was in line with the overall workforce at 11% compared to Assembly (3361) at 4%, and Manufacturing at 8%. Non-visible minority women (16% in Assembly and 18% in Parts production) were a lower share than the overall workforce of NVM women which was 38%.

  - Aboriginal women: Based on the 2016 Census, 2% of Canada's income recipients identified as aboriginal women, however, aboriginal women comprised 0.6% of all employees in both Parts production (3363) and Assembly (3361).

- In 2019, regional participation of women in the automotive sector varied with the proportion of women in Assembly ranging from 16% in the Winnipeg region to 25% in the Windsor region; and in Parts production,

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[1] Percentages may differ as Census data is based a 2015 survey and the labour force survey references 2019 data.

ranging from 17% in the Montreal/Quebec region to 33% in the Windsor-Sarnia region – the latter having the highest share.

▪ In 2019, in comparison with broad industrial sectors in Canada, based on the share of women employed, Parts production ranked #16 and Assembly ranked #19, in level of representation. On the other hand, women are over-represented in sectors like Health care and social assistance (81%) and Educational services (70%) which may indicate a level of self-selection by women in certain occupations and Industries, and provide challenges to other sectors trying to attract women.

▪ The automotive sector offers permanent jobs to the majority of its female workforce, which is a key factor in attracting women workers, many of whom occupy precarious employment in other industrial sectors. In 2019, female temporary employees as a share of all female employees was 10% for Assembly (NAIC 3361) and 6% for Parts production (NAIC 3363), compared with the broader manufacturing sector (8%), and the overall labour market of 14%.

▪ Similar to other industrial sectors, there is still a gender pay gap where women in the automotive industry earn less than men. For average hourly wages, Assembly (NAIC 3361) had a lower wage gap at $1.48 compared to Parts production (NAIC 3363) at $ 3.82, and $4.43 for Manufacturing. Wage differences are usually related to the types of jobs that women occupy in the sector. However, the overall gender pay gap has been narrowing in recent years in the sector and is lower than the national gender pay gap which was $4.13 per hour on average in 2018, according to Statistics Canada, for female employees aged 25 to 54 years.

Women as a labour source in auto-related occupations:
An analysis of participation by women in the 49 automotive sector-related occupations in the entire Canadian labour force suggests some trends and challenges.

• The educational levels of women in these 49 occupations shifted slightly over the last 11 years (2008 to 2019) with increases in degree level education and decreases in high school education, and negligible change in skilled trades education. The share of women with 'Above Bachelors' education went from 21% to 27% and women with

Bachelor's degrees went from 23% to 27% of the labour force in the 49 occupations. The educational fields align with the jobs that women occupy and indicate a bias towards specific occupations.

- In 2019, women were underrepresented in most of the 49 occupations. Only 6.5% of skilled trades jobs were held by women, while 25% of supervisors/technical and management jobs and 23% of production/supervisor jobs were held by women.

- Over the period 2006 to 2019, women's participation in the Canadian labour market has been declining in production jobs, increasing in Engineering/Technical/Managerial jobs, with incremental increase in the number of women holding skilled trades jobs. The number of women in production jobs dropped 38%, increased by 53% in Engineering/Technical/Managerial jobs and increased by 35% in skilled trades jobs.

The data suggest that there are opportunities to hire qualified women of diverse backgrounds into more high-skilled areas, including managerial jobs. Hiring women with skilled trades qualifications will require recruiting new apprentices and training, given the small number of women with skilled trades qualifications.

The paper provides labour market information (LMI) for Government and employers in the sector. It also suggests that increasing the number of women and widening labour market participation of women in the type of jobs that they fill may be one way to address skills shortages in the sector.

INTRODUCTION

Given changing demographics in the Canadian labour market, competition among industrial sectors for labour of different skill levels will intensify. Following up on a previous FOCAL initiative paper, *Women, Youth and Indigenous Peoples' Employment in Canada's Automotive Sector*, this paper focuses on further exploring labour market participation and labour market outcomes for women in the sector. Understanding labour market participation by women may help employers assess potential opportunities to recruit more women into diverse occupations facing shortages in the sector; and help inform corporate and public policy goals of improving access to jobs and equity in employment for women of all backgrounds.

The paper explores the following:
- nature (including gaps) of the current participation of women in the automotive sector including demographic factors
- regional distribution of women in the labour force
- analysis of labour market outcomes for women
- analysis of participation of women in the sector by occupation
- implications of the findings to improve gender diversity and equity in the sector.

The automotive manufacturing industry is among Canada's most important employers. This is particularly the case in southern Ontario. However, automotive manufacturing employers face tight regional labour markets and shortages of skilled workers. Relatively low levels of employment of women suggest that they also face challenges recruiting and retaining women in the sector.

In 2019, the automotive sector as defined by NAIC 3361 and NAIC 3363, directly employed[2] approximately 143 000 people, with 39% in Assembly and 61% in Parts production, with approximately 148 000 people in the labour force. However, a previous paper in this project, *Defining the Broader Automotive Sector*, includes proportions of other sectors with different NAICs that form part of the supply chain for the sector and using 2018 data, estimated that employment in the sector was approximately 180 000 jobs. The economy was quite healthy in 2019, as unemployment fell to 5.8% overall in

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[2] Employees and Self-employed.

Canada. However, in 2020, the economic shock of COVID-19 led to an increase in unemployment induced by lock-down and physical distancing measures.

The paper is organized into four sections: 1) Demographic profile of women directly employed in the automotive sector; 2) Trends in direct employment in the automotive sector; 3) labour market outcomes. 4) Analysis of women's labour force participation in the sector by occupation and education levels.

Methodology

The paper is based on secondary research data using public sources including the Census 2016; a custom request of data from the Labour Force Survey (LFS); and references papers and reports on labour force participation of women.

The paper uses two approaches to explore women's labour market participation in the sector.

- Given data limitations on women from official sources, a *narrow definition* of the automotive sector was used for *direct employment of women* in the sector, which is still a good proxy of the sector: (i) NAIC 3361 (motor vehicle manufacturing or Assembly) and (ii) NAIC 3363 (motor vehicle parts manufacturing or Part production).However*,* we acknowledge these two codes comprise a subset of employment in the automotive sector.

- In order to assess the potential labour supply of women for the automotive sector, we used the 49 key occupations identified from the National Occupational Classification list. The employment data for the 49 NOCs do not only look at the people employed in the automotive sector but the entire Canadian labour force. In our 2019 *Post-secondary Education Report*, these 49 occupations were identified as being related to employment in the broader automotive sector and is being used in our forecast of labour supply and demand.

Gender-Based Analysis Plus (GBA+)

A GBA+ analysis of women's participation in the labour market examines, where data permits, gender differences and intersectionalities of gender with race, indigeneity, age and immigrant status, geographical location, education, and relationships with labour market outcomes.

Definitions
- employed - Employed persons are those who, during the reference week, did any work for pay or profit or had a job and were absent from work (Labour Force Survey.)
- employee - A person who works for others. (Labour Force Survey.)
- traditional definition of the automotive labour market - NAIC 3361 and NAIC 3363
- auto-related occupations – 49 occupations defined by the current FOCAL project as relevant to hiring needs in the sector.
- equity-seeking groups are people who face barriers in achieving equality and equity including access to jobs in the labour market. These groups include the four designated groups of the federal Employment Equity Act – Women, Aboriginal Peoples, Persons with disabilities, and visible minorities, as well as immigrants, older workers, low income people, veterans, etc.
- sex and gender – Although gender and sex are not the same, Statistics Canada publishes 'sex' data which is used as a proxy for gender. As such, the paper uses female/male and men/women interchangeably to mean gender.
- Aboriginal Peoples refer to the indigenous peoples of Canada.

REPRESENTATION OF WOMEN

Women have traditionally been under-represented in the automotive manufacturing sector. In 2019, the proportion of women employed[3] in Assembly (3361-motor vehicle manufacturing) was 23% and 25% in Parts production (3363-motor vehicle parts manufacturing). This stands in contrast to the proportion of women in Canada's broader labour force (48%) and is also slightly lower than the broader manufacturing sector where 28% employed are women. A previous paper, *Women, Youth and Indigenous Peoples' Employment in Canada's Automotive Sector,* used 2017 data and noted that women comprised 18% of NAICS 3361 and 28% of NAICS 3363 which indicates that the proportion of women went up 5% in Assembly and dropped 3% in Parts Production in two years.

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[3] Employed includes employees and other workers

Figure 1: Share of women employed in Canada, 2019
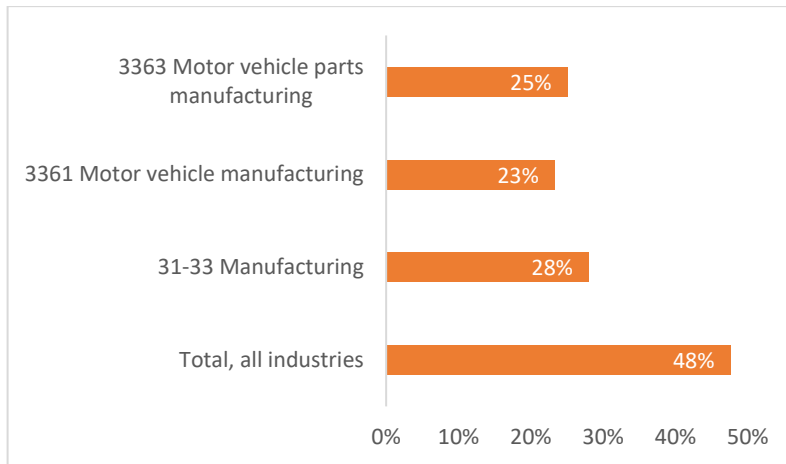
(Source: LFS Custom Request, 2020, Statistics Canada)

Demographic profile of women directly employed in the automotive sector

Women's experiences are not all the same nor is their access to the labour market equal. There are other factors especially demographic factors that impact labour market access and outcomes depending on if a woman is Canadian-born or an immigrant, a visible minority, an Aboriginal woman, older worker, low-income woman, among other intersecting factors. The profile below considers some of the factors that make up the diversity of women in Canada's automotive labour market.

Participation of young women

The proportion of young women (aged 15-24) employed in the automotive sector is very low, 6% in Assembly and 7% in Parts manufacturing but these numbers are reflective of the broader manufacturing sector which has an older workforce. Assembly has a larger share of women in the younger demographic of 25-44 years (57%). Given the aging workforce and rate of retirements in Canada, attracting youth is important to labour force replacement. Another paper in this project will review some of the factors around the issue of attracting youth to the automotive sector.

Figure 2: Women Employed by Age, 2019
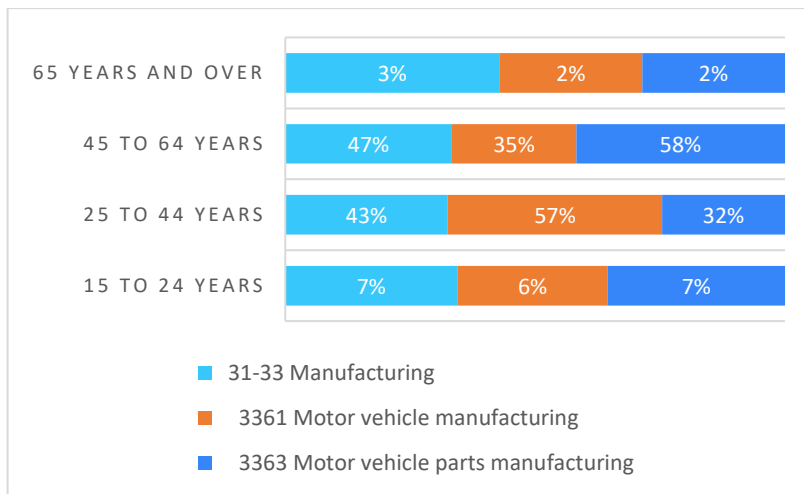
(Source: LFS Custom Request, 2020, Statistics Canada)

Immigrant women

Immigrant women as a share of the employed

Immigrants are an important source of labour in Canada. In 2019, 26% of all employed people were immigrants. In Manufacturing and in Parts production, 10% of the employed were immigrant women and 8% of the workforce in Assembly were women. Immigrant women made up slightly below 12% of Canada's entire workforce. See Figure 3.

Figure 3: Share of Immigrant Women Employed in 2019
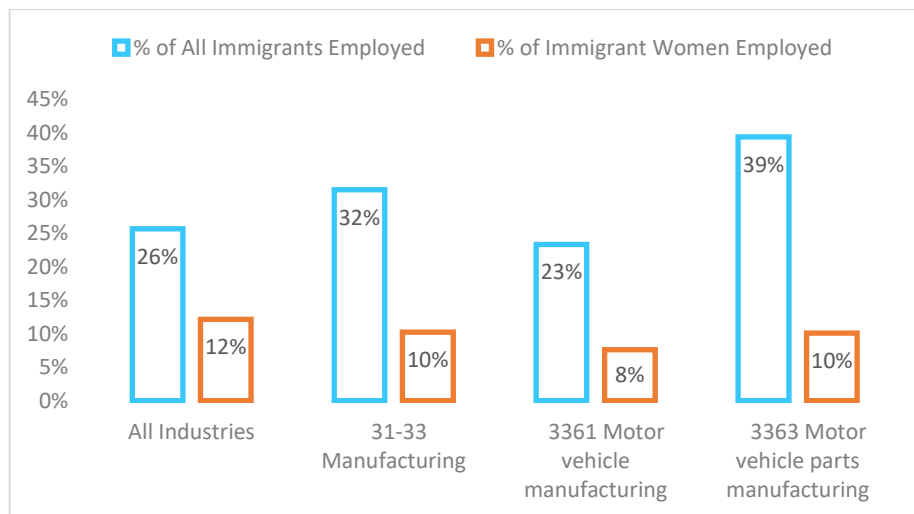
(Source: LFS Custom Request, 2020, Statistics Canada)

Employment of Immigrant women vs Canadian-born women in the sector
Immigrant women have higher representation in the automotive sector than in the overall Canadian workforce. In 2019, immigrant women made up 26% of the entire female workforce, but one-third of all women employed in assembly (33%) and forty per cent (40%) in parts production were immigrants. This is in line with the overall manufacturing sector (36%). This indicates that the sector has been open to hiring immigrant women to meet labour market needs in the past, and that immigrant women could continue to be a source of labour for the sector moving forward.

Figure 4: Women by Immigration Status Employed in 2019 in the Automotive Sector
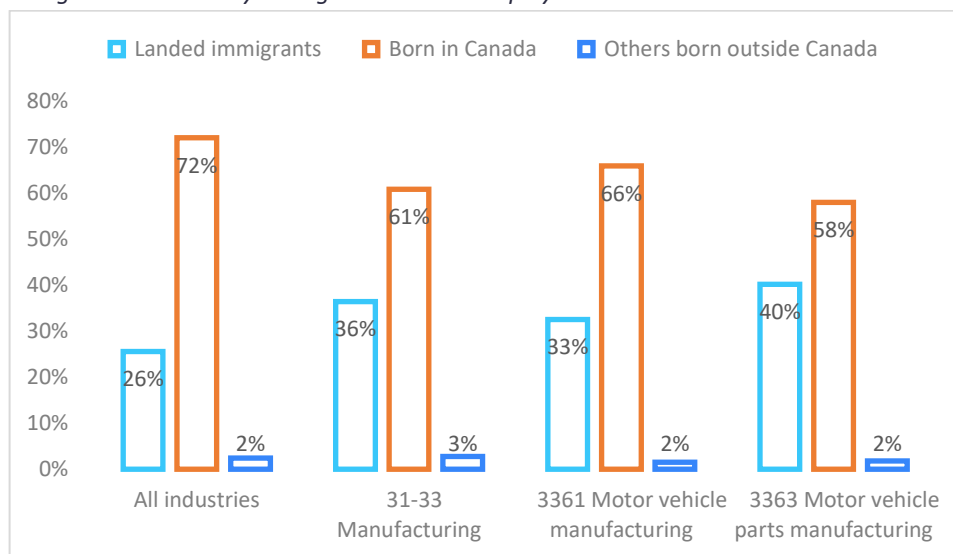
(Source: LFS Custom Request, 2020, Statistics Canada)

A small percentage of women employed in the automotive manufacturing sector ("Others born outside Canada") are Canadian citizens born outside Canada and non-permanent residents.

Visible Minority[4] Status

According to the Census 2016[5], 20.5% of *income recipients* identified as visible minorities, of which 10.2% were women. Visible minority women as a share of income recipients in Parts production was 11%, slightly higher than the overall workforce and much higher than Assembly, which was 4%. Non-visible minority

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[4] Visible minorities are defined as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour." See *https://www150.statcan.gc.ca/n1/pub/89-503-x/2015001/article/14315-eng.htm*

[5] Percentages may differ as Census data is based on 2015 and the labour force data references 2019 data.

women (NVM) in automotive manufacturing at 16% in Assembly and 18% in Parts production, had a lower share than the overall workforce of NVM which was 38%. See Figure 5.

Figure 5: Representation of Visible Minority Women Employed in the Automotive sector, 2015
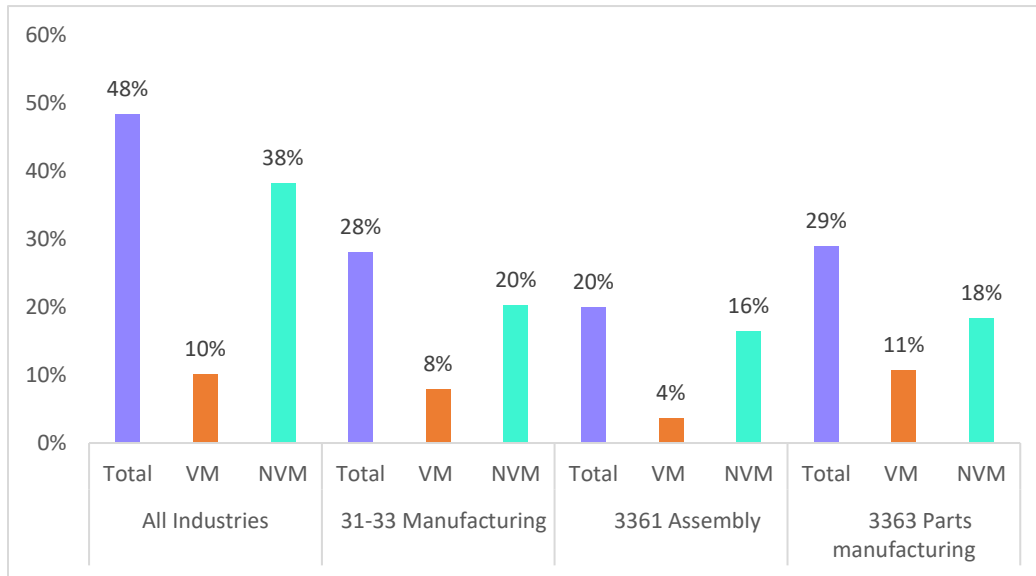
(Source: Census 2016)

Note: VM- Visible Minority; NVM – Non-visible minority

Aboriginal Peoples[6]

Based on the 2016 Census, 3.9% of Canada's income recipients identified as Indigenous with 2% being women. It was noted in a previous paper in the project, that the majority of the automotive industry is located in regions with small aboriginal populations, and that representation of aboriginal peoples in the automotive sector is in line with broader labour market availability. Perhaps because of this, there is under-representation of aboriginal women in the automotive sector. Aboriginal women comprise 0.6% of all workers in both Parts production and Assembly.

Table 1: Aboriginal Women's Representation in the Automotive Sector

Sector	Aboriginal Women as a % of Income Recipients	Aboriginal Peoples as a % of Income Recipients
All Industries	2.0%	3.9%
31-33 Manufacturing	0.7%	2.7%
3362 Assembly	0.6%	2.5%
3364 Parts manufacturing	0.6%	1.9%

(Source: Census 2016)

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[6] 'Aboriginal identity' refers to whether the person identified with the Aboriginal peoples of Canada including First Nations (North American Indian), Métis or Inuk (Inuit) and/or those who are Registered or Treaty Indians (under the Indian Act of Canada), and/or those who have membership in a First Nation or Indian band.

Trends in Direct Employment of Women in Auto.

As the trend data shows, women have traditionally been under-represented in Canada's automotive manufacturing industry. As Figure 6 illustrates, the proportion of women in Canada directly employed in the automotive sector has not changed significantly. The Parts production sector continues to employ more women than Assembly. Female employment in Assembly and Parts production reached an all-time low in 2010, in the wake of the 2008 Great Recession.

Figure 6: Employment in Automotive sector by Sex, 2006-2019 (000s)
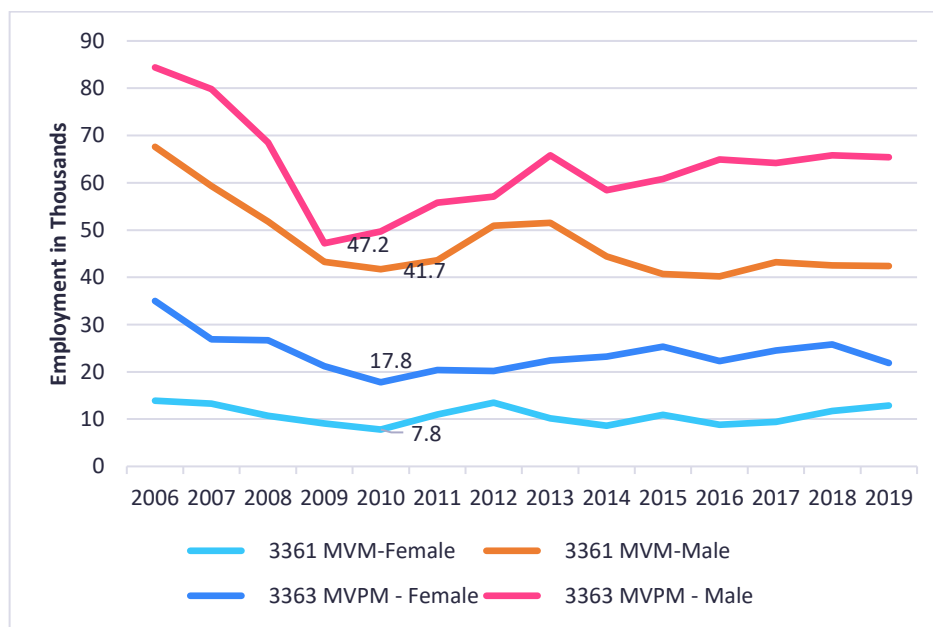
(Source: LFS Custom Request, 2020, Statistics Canada)

Regional labour market participation

In 2019, the share of women employed in regions with a strong automotive manufacturing presence was generally slightly lower than overall manufacturing in the same regions. Regional participation of women in the automotive sector varied with the proportion of women in Assembly ranging from 16% in the Winnipeg region to 25% in the Windsor region. However, in Parts production, the share of women was highest in Windsor-Sarnia region (33%) and Eastern Ontario (30%).

Table 2: Proportion of Women Employed in Auto-regions, 2019

Auto-Region[7]	Sector	% of women
Montréal/Quebec	31-33 Manufacturing	32%
	3361 Motor vehicle manufacturing	x
	3363 Motor vehicle parts manufacturing	17%
Eastern Ontario	31-33 Manufacturing	29%
	3361 Motor vehicle manufacturing	x
	3363 Motor vehicle parts manufacturing	30%
Golden Horseshoe	31-33 Manufacturing	32%
	3361 Motor vehicle manufacturing	23%
	3363 Motor vehicle parts manufacturing	24%
Kitchener-Waterloo-Barrie, Ontario	31-33 Manufacturing	26%
	3361 Motor vehicle manufacturing	23%
	3363 Motor vehicle parts manufacturing	25%
London	31-33 Manufacturing	27%
	3361 Motor vehicle manufacturing	19%
	3363 Motor vehicle parts manufacturing	25%
Windsor-Sarnia, Ontario	31-33 Manufacturing	28%
	3361 Motor vehicle manufacturing	25%
	3363 Motor vehicle parts manufacturing	33%
Winnipeg	31-33 Manufacturing	25%
	3361 Motor vehicle manufacturing	16%
	3363 Motor vehicle parts manufacturing	22%

(Source: LFS Custom Request, 2020, Statistics Canada)

Note: x indicates that data is suppressed by Statistics Canada because the numbers are low in order to protect the identity of respondents to the survey.

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[7] i. London (auto region) consists of 3560 - London, Ontario and 3580 - Stratford-Bruce Peninsula, Ontario; Winnipeg consists of 4610 - Southeast, Manitoba; 4620, 4640 - South Central and North Central, Manitoba; 4650 - Winnipeg, Manitoba; 4660 - Interlake, Manitoba; Golden Horseshoe consists of 3530 - Toronto, Ontario and 3550 - Hamilton-Niagara Peninsula, Ontario; Eastern Ontario consists of 3510 - Ottawa, Ontario; 3515 - Kingston-Pembroke, Ontario; 3520 - Muskoka-Kawarthas, Ontario; Montréal (auto region) consists of 2430 - Estrie, Quebec; 2435 - Montérégie, Quebec; and 2440 - Montréal, Quebec; BC- 5920, Lower Mainland-Southwest was excluded due to data suppression.

Sectoral comparison – Automotive vs other sectors

In comparison with other Industrial sectors for the proportion of women employed in 2019, the Parts production sub-sector ranked #16 with 25% and Assembly sub-sector ranked #19 in comparison with broader industrial sectors in Canada. The high representation of women in the Services sectors indicates some level of occupational self-selection, where women choose certain professions that channel them into Service industries. The occupational analysis section provides more information on occupations where women tend to cluster.

Table 3: Women Employed by Industrial Sector, 2019

Rank	Industry	% of women
1	62 Health care and social assistance	81%
2	61 Educational services	70%
3	72 Accommodation and food services	56%
4	52 Finance and insurance	55%
5	81 Other services (except public administration)	55%
6	44-45 Retail trade	52%
7	71 Arts, entertainment and recreation	51%
8	91 Public administration	50%
9	56 Administrative and support, waste mg'tt & remediation services	46%
10	53 Real estate and rental and leasing	45%
11	54 Professional, scientific and technical services	42%
12	51 Information and cultural industries	41%
13	41 Wholesale trade	31%
14	11 Agriculture, forestry, fishing and hunting	28%
15	*31-33 Manufacturing*	*28%*
16	***3363 Motor vehicle parts manufacturing***	***25%***
17	22 Utilities	25%
18	48-49 Transportation and warehousing	23%
19	***3361 Motor vehicle manufacturing***	***23%***
20	21 Mining, quarrying, and oil and gas extraction	18%
21	23 Construction	12%
22	Total, all industries	48%

(Source: LFS Custom Request, 2020, Statistics Canada)

LABOUR MARKET OUTCOMES

Globally and in Canada, non-standard employment or precarious employment tends to be gendered, with women having more part-time[8], temporary[9], and other forms of employment outside of full-time, permanent employee status and different access to benefits (ILO, 2016; Cranford et al 2003). Women's occupational choices are related to discrimination, social norms, and caregiving responsibilities. On an aggregate level, the manufacturing sector including the automotive sector compares well with other sectors in Canada for work hours and pay for women.

Hours worked

Actual hours [10] worked by women were not vastly different from that of men in the automotive sector compared to the overall labour market (*All Industries*). Generally, lower hours may be related to the jobs that women occupy or other factors[11].

Table 4: Average actual hours (all workers), 2019

Sector	Both sexes	Males	Females
All Industries	32.1	35.2	28.7
31-33 Manufacturing	36.3	37.3	33.5
3361 Motor vehicle manufacturing	36.3	37.2	33
3363 Motor vehicle parts manufacturing	37.1	37.8	35

(Source: LFS Custom Request, 2020, Statistics Canada)

Employment status of women workers

The majority of women in the automotive sector are permanent employees with female temporary employees as a share of all female employees at 10% for Assembly and 6% for Parts production, in line with the broader manufacturing sector (8%), and lower than the overall labour market (*All Industries*) which was 14%. Other sectors such as *Agriculture* (28%),

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[8] Part-time employment consists of persons who usually work less than 30 hours per week at their main or only job.

[9] A temporary job has a predetermined end date, or will end as soon as a specified project is completed and includes seasonal jobs; temporary, term or contract jobs including work done through a temporary help agency; casual jobs; and other temporary work.

[10] Actual hours worked divides the total actual hours worked by the total number of employed persons which includes self-employed.

[11] Women bear the majority of the burden for childcare and caregiving which may result in reduced hours.

Educational Services (26%)*, and Information and Cultural Industries* (15%) had the highest share of female temporary employees. See Figure 7.

Figure 7: Women Employees by Employment Status and Industrial Sector, 2019
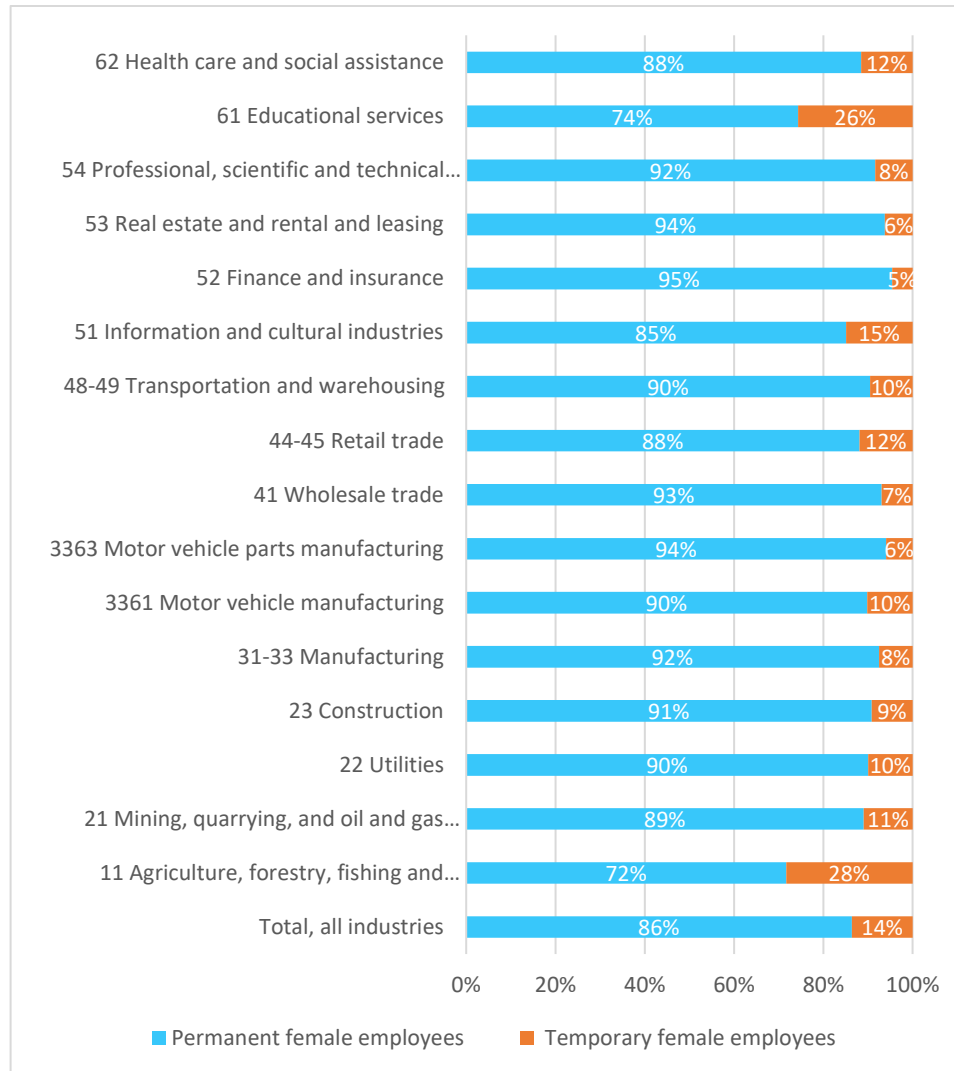
(Source: LFS Custom Request, 2020, Statistics Canada)

For all industries, 76% of part-time workers were women and in *manufacturing,* 46% of part-time workers were women. The numbers for women in part-time jobs in the automotive sector were suppressed by Statistics Canada for confidentiality purposes and suggests that the number is low. The data suggests that there is opportunity for permanent employment in the sector which is useful in efforts to attract women to the automotive sector.

Wages and the gender pay gap

The gender pay gap is a well-researched policy area and a human resources management challenge. Various factors account for wage differences between men and women – education, tenure, job attributes, part-time status, firm size, sector, unionization, occupation, and work experience. On a national level, the gender pay gap in Canada has been decreasing over the last few years. In 2018, according to Statistics Canada, female employees aged 25 to 54 earned $4.13 less per hour on *average* than men; $0.87 for every dollar earned by men. Therefore, the gender gap in hourly wages has narrowed by $1.04 since 1998, when it was $5.17.

As discussed in an earlier paper[12] female automotive industry employees earn less than their male counterparts. However, the *average hourly pay gap* (wage differential) between men and women in the automotive sector is lower than the broader manufacturing sector and the national labour market. The median wages show a larger gender pay gap than average[13] wages. The average wage uses the total income of employees divided by the number of employees and may obscure pay differences among workers as a few employees with high wages can drag the average up. The median income divides the income distribution of the group into two halves – those below and above the median and could provide a more accurate picture of wage gaps. See Table 5 for average and median hourly wages for men and women.

Table 5: Average hourly and Median hourly wages $ (employees only), 2019

| Wage type	Sector	Both	Men	Women	Wage Differential
Average hourly wages	31-33 Manufacturing	$27.54	$28.79	$24.36	$4.43
	3361 Motor vehicle manufacturing	$31.80	$32.15	$30.67	$1.48
	3363 Motor vehicle parts manufacturing	$25.63	$26.59	$22.77	$3.82
Median hourly wages	31-33 Manufacturing	$24.03	$25.51	$20.50	$5.01
	3361 Motor vehicle manufacturing	$31.50	$32.69	$28.85	$3.84
	3363 Motor vehicle parts manufacturing	$23.00	$23.59	$20.80	$2.79

(Source: LFS Custom Request, 2020, Statistics Canada)

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[12] Women, Youth, and Indigenous Persons in Canada's Automotive Industry paper is an earlier paper in the Auto LMI project.

[13] The mean or average tends to be skewed by extreme values.

The nominal trend data on wages [14] in Figure 8, shows that the overall gender pay gap over the period 2006 to 2019 increased over time with a narrowing of the gap in recent years. There are also persistent differences in pay levels for women between Parts production and Assembly, given the latter's size and ability to pay. In a survey (Deloitte, 2018) done in the automotive sector in the US, only 35% of the male respondents believed there was a gender pay gap in the sector. This difference between perception and reality prevents the amelioration of the continuing pay gap within organisations.

Figure 8: Trends in Average hourly wages $ (employees only), 2006-2019
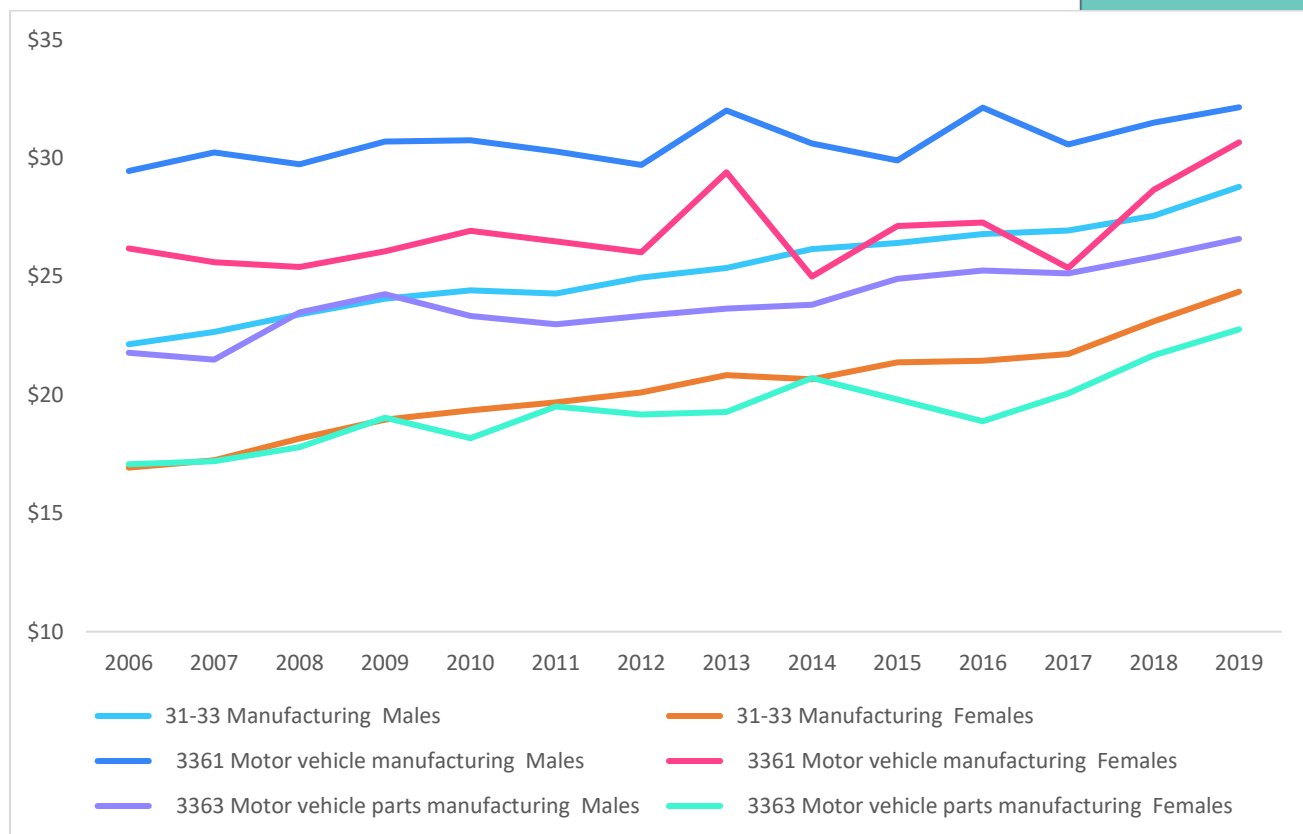
(Source: LFS Custom Request, 2020, Statistics Canada)

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[14] The wage data is nominal data from the Labour force survey. A previous paper on wages looked at wages adjusted for inflation.

# OCCUPATIONAL ANALYSIS OF WOMEN AS A LABOUR SOURCE

This section looks at women in the labour force, employment and education levels for auto-related occupations in three categories: Engineering/Technical/Managerial; Supervisors and Production; and Skilled Trades. The labour force survey data used in this section is not specific to NAICS 3361 and 3363 but utilises the 49 occupations (NOCs) used to forecast labour supply and demand in the project. These occupations were identified as being key to the automotive sector recruiting needs, and discussed in a previous paper, *Post-secondary Report*. Data covers everyone in the Canadian labour market employed in these jobs (not just in the automotive sector), which allows for a better understanding of labour supply and labour market availability. The broader labour data shows where gaps and hiring opportunities are for increasing the representation of women.

Labour force and women in auto-related occupations

In 2019, of the 49 occupations identified as important to automotive hiring needs, the proportion of women in Canada *employed* in the Canadian labour force was less than 30% for engineering/technical and Supervisors/Production jobs and very low in skilled trades (6%). See Figure 9.

Figure 9: Proportion of Women in Labour force and Employed in the 49 Auto-related occupations in 2019 (000s)
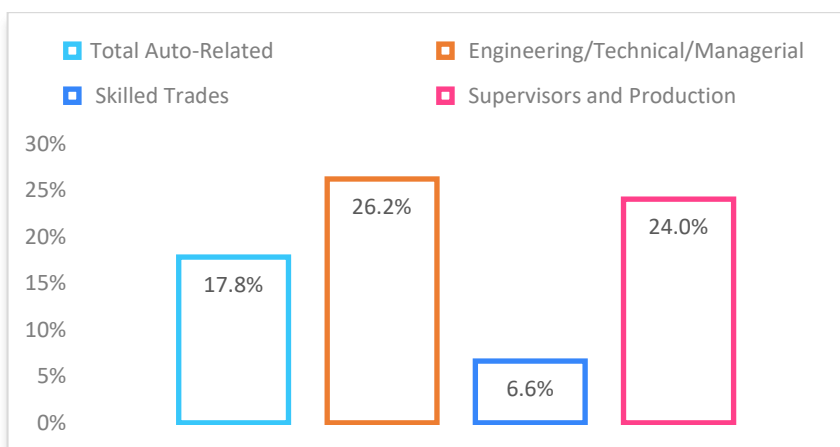
(Source: LFS Custom Request, 2020, Statistics Canada)

During the period from 2006 to 2019, using the 49 auto-related occupations, there has been an increase of 53% of women employed in managerial, technical, and engineering posts. There was a similar proportional increase of 35% in skilled trades, but total representation remains low at only 6.5%. On the other hand, the percentage of women in production jobs dropped by 38%. See Figure 10 below for changes in absolute numbers of women employed.

*Figure 10: Trends in Employment of women by occupational grouping, 2006-2019 (000s)*
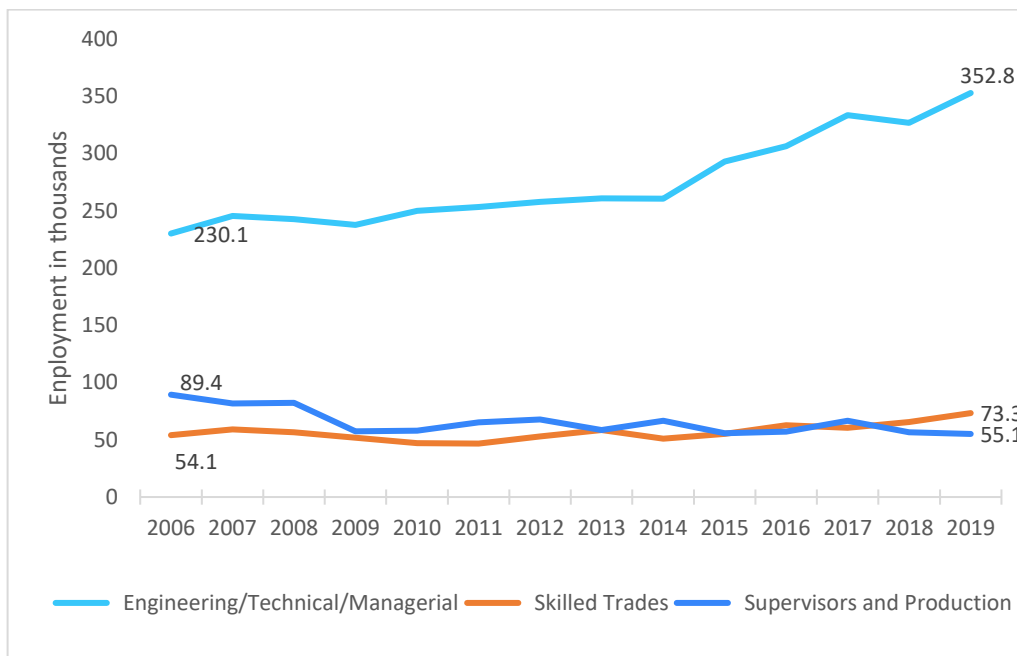
(Source: LFS Custom Request, 2020, Statistics Canada)

Women in selected Professional/Technical/Managerial occupations

Over the 5-year period, from 2015 to 2019, the share of women in the labour force in key Professional/Technical/Managerial occupations continue to be low, except for production logistics coordinators which in 2019 was higher than that of men. In 2019 over 60% of production logistics coordinators were women, but women working in engineering fields ranged from 23% of engineering managers down to 9% of mechanical engineers. However, there have been modest improvements over time. The share of women increased for Engineering managers (4%), Manufacturing managers (2.7%) and Production logistics coordinators (8.3%); but there was no change in the share of mechanical engineers and the share of industrial & manufacturing engineers fell by 9.2%. Because participation by women in engineering is so low, employers may have to work with schools and postsecondary training

institutions to encourage women to pursue careers in these fields. Women working[15] in the automotive sector have identified the need to advance women into leadership positions.

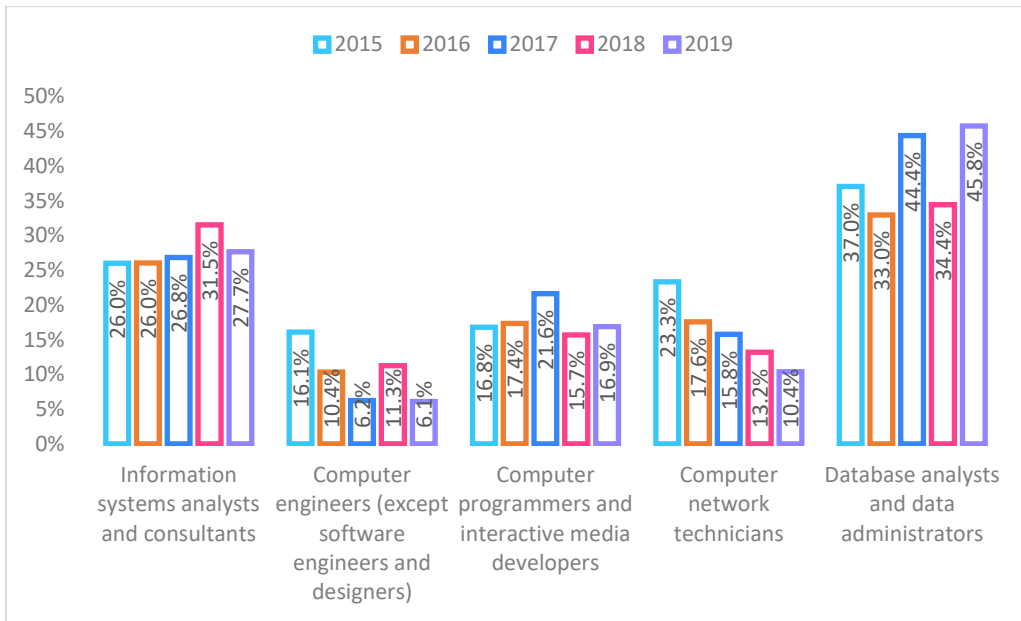*Figure 11: Share of Women in the Labour force in selected professional/ technical/managerial occupations*
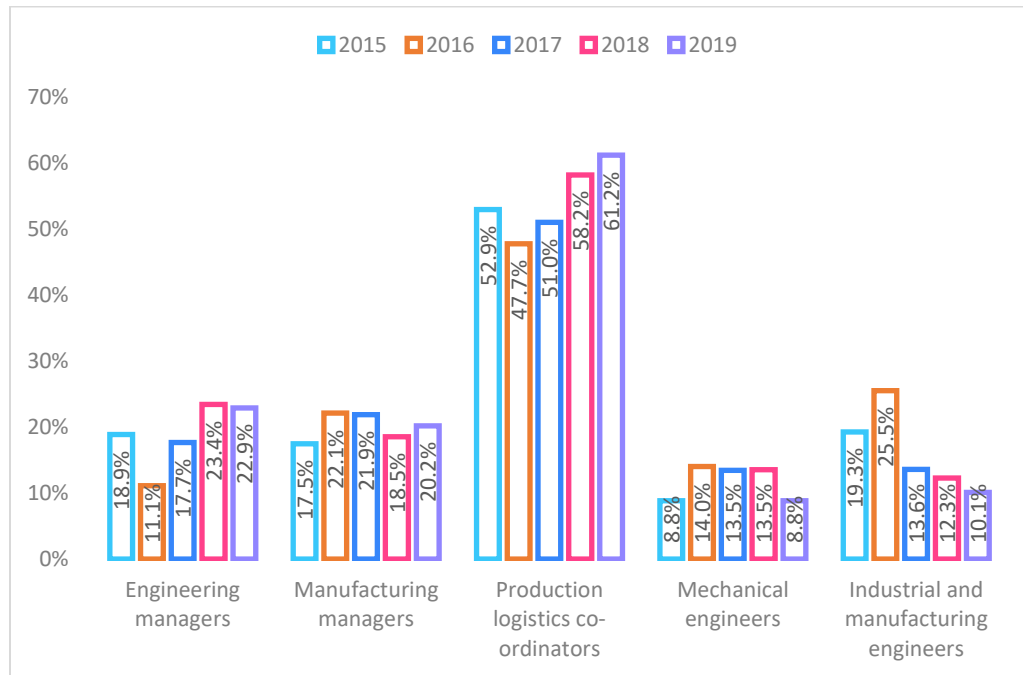
(Source: LFS Custom Request, 2020, Statistics Canada)

Women in Computer related Professional/Technical Occupations

Every sector has demand for skills related to computers (information technology, software development, business intelligence, AI, etc), including the automotive sector. An increasing share of the labour force are women in jobs such as database analysts and information systems analysts. However, in other higher paying, highly skilled occupations such as computer engineers and programmers, women are still under-represented.

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[15]The Women & Automotive Canadian Leadership Forum's goal is to promote the hiring of women into leadership positions across the auto industry.

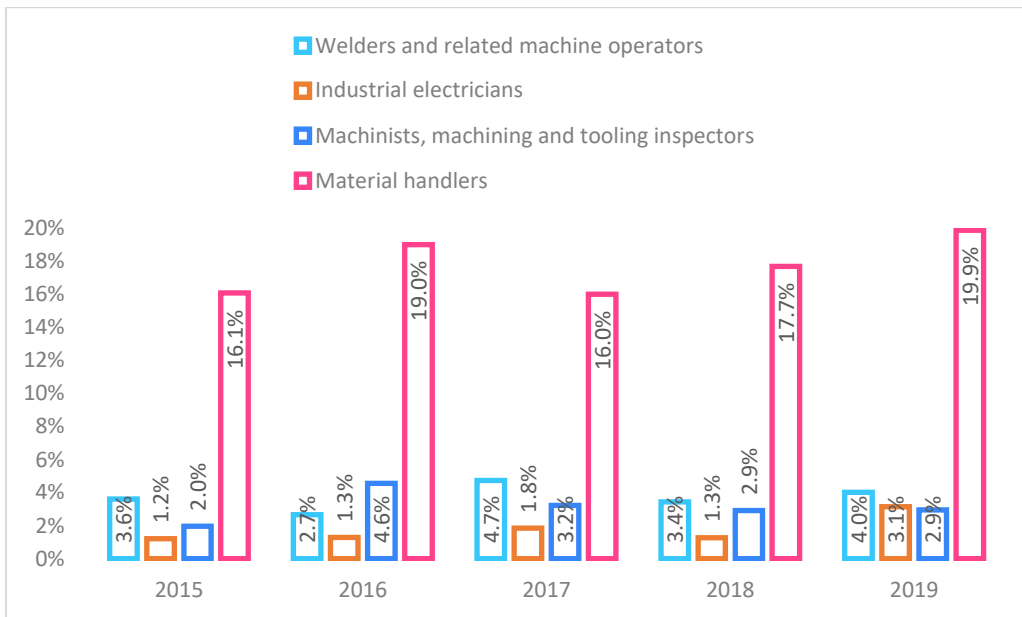*Figure 12: Share of Women in the Labour Force in IT-related occupations*

(Source: LFS Custom Request, 2020, Statistics Canada)

Women in Selected Skilled Trades occupations

Over the 5-year period, from 2015 to 2019, the share of women in the labour force in skilled trades occupations continue to be very low ranging from approximately 1% to 5%, except for material handlers which ranged from approximately 16% to 20% increasing over the 5-year period; but this is also a lower paying occupation. The lack of supply of women in skilled trades exacerbates shortages in the skilled trades. The low representation of women in the skilled trades suggests that more aggressive efforts to increase women's participation in the skilled trades is necessary. See Figure 13.

Figure 13: Share of Women in selected skill trades in the labour force

(Source: LFS Custom Request, 2020, Statistics Canada)

Women in selected production/supervisor occupations

There is a higher representation of female labour in production jobs which are also lower paying. Close to half of the *labourers* in the Canadian labour force in 2019 were women. In the auto-specific occupations, supervisory jobs had the lowest share of women, 10% for *Supervisors, motor vehicle assembling,* and 10% for *Mechanical assemblers and inspectors* in 2019. *Electronics assemblers, fabricators, inspectors and testers* and *Plastic products assemblers, finishers and inspectors* have a higher proportion of women.

Figure 14:Share of Women in Production/Supervisor Occupations in the Labour Force
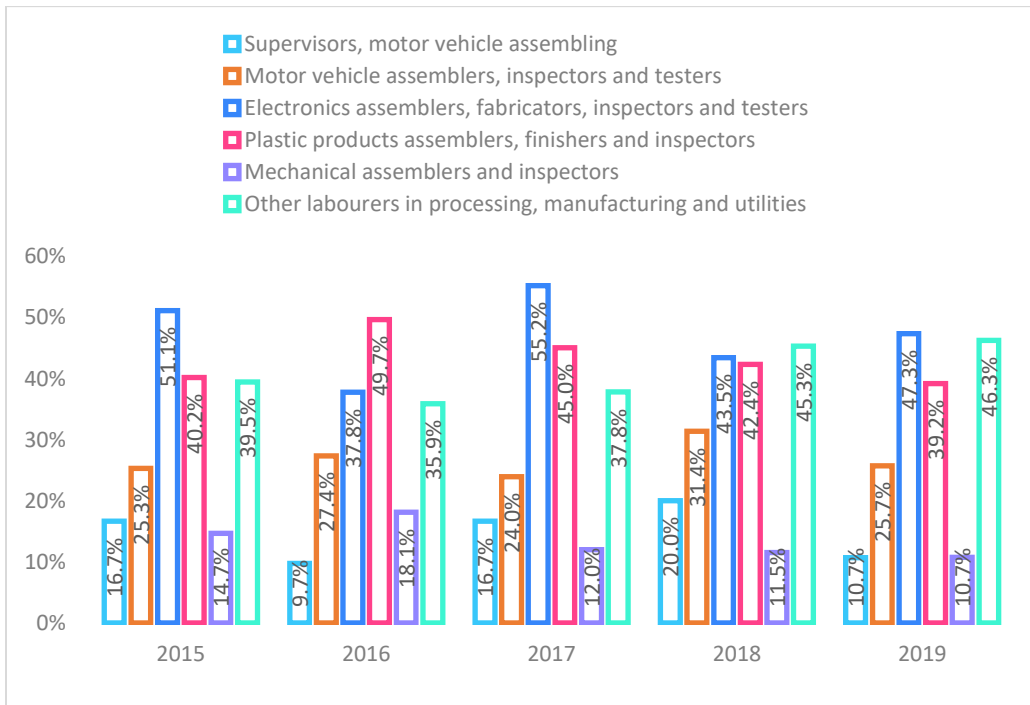
(Source: LFS Custom Request, 2020, Statistics Canada)

As discussed in an earlier paper, the labour force data confirms what the Census data shows; that women who work in motor vehicle manufacturing are more likely to be employed as assemblers, inspectors, and testers than in higher-paying occupations such as supervisors and mechanical engineers.

Education of Women Employed in Auto-related Occupations

The educational profile and trends in qualifications of women in the 49 occupations in the labour market is important for understanding where the opportunities are, currently and in the future for recruiting women. It also shows where more interventions might be needed to encourage women into educational programs where there are labour shortages such as the skilled trades. The educational levels of women shifted slightly over the last 11 years (2008 to 2019) with increases in degree level education and decreases in high school education, and negligible change in skilled trades education. Women with 'Above Bachelors' education went from 21% to 27% while men went from 79% to 73%; women with Bachelor's degrees went from 23% to 27% while men went from 77% to 73%; and women with a Trades certificate or diploma went from 6% to 5% and men went from 94% to 95% of the labour force in the 49 occupations. See Figure 15.

Figure 15: Changes in Education by Gender in 49 Occupations (000s)

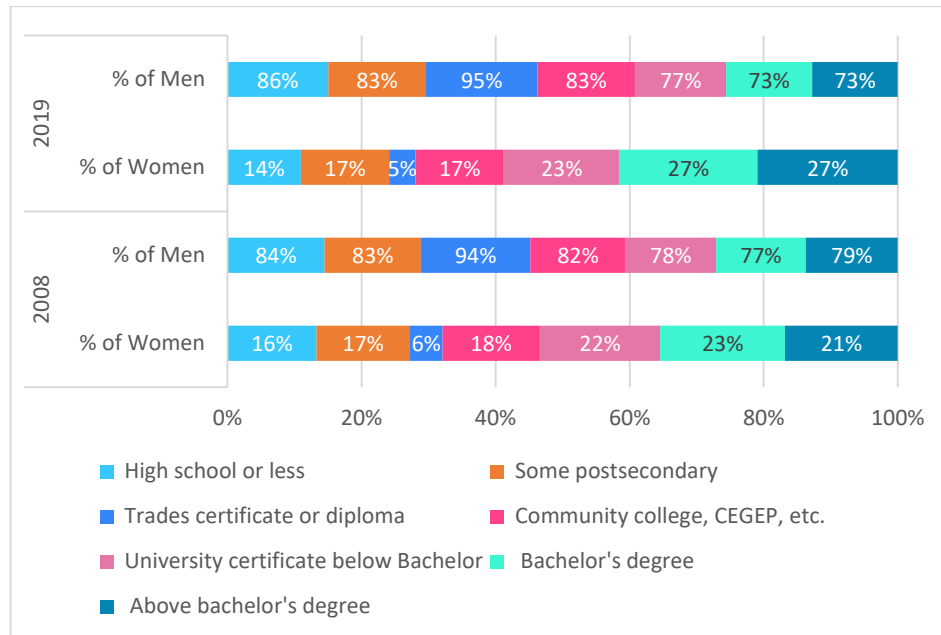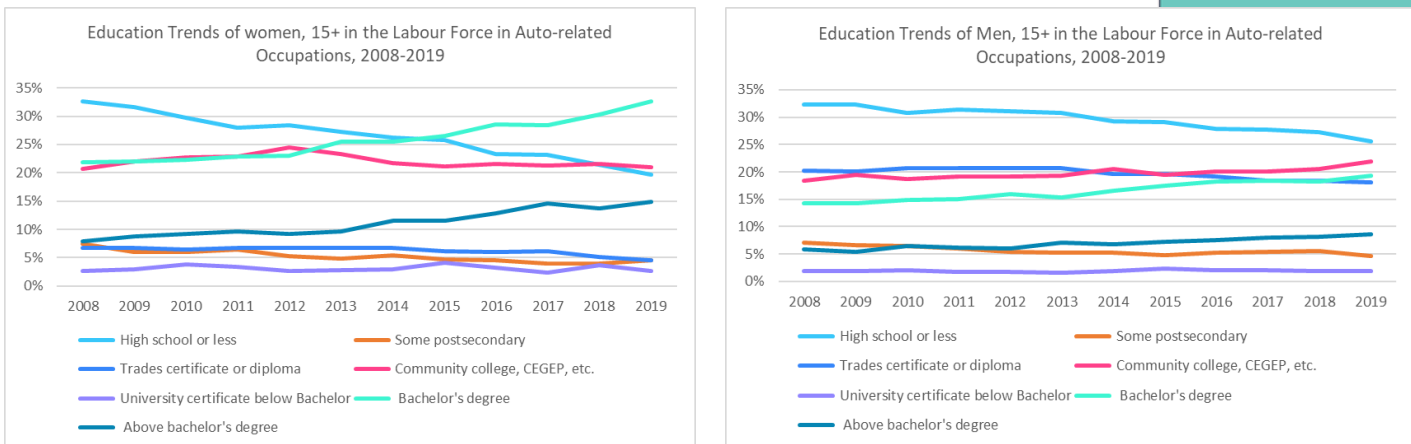

(Source: LFS Custom Request, 2020, Statistics Canada)

For people in auto-related occupations, there was a larger increase of women with undergraduate degrees (85%) and above Bachelors (135%), compared to men whose increase from 2008 to 2019 was 50% and 64%, respectively. There was a 16% drop of women with a trades certificate or diploma as their highest level of education and no change for men, from 2008 to 2019. There was a 25% drop in women who only completed a high school diploma compared with men who saw a 12% drop.

The educational trends suggest that there is opportunity for hiring women in occupations requiring university education, although there are still women with lower educational levels who can be hired into production jobs. The continuing low uptake by women in the skilled trades education indicates the need for a different education and training approach to encourage women to enter training in the skilled trades. As the educational levels of women increases, the supply of labour for low-skilled production jobs will continue to be a challenge. See Figure 16.

Figure 16: Education Trends in the Labour Force by Gender in 49 Auto-related Occupations

(Source: LFS Custom Request, 2020, Statistics Canada)

Economic shocks and women's employment

Women and other equity-seeking groups tend to be more vulnerable in the labour market. In the wake of the 2008 Great Recession, women suffered a higher share of job losses in both Assembly (3361) and Parts production (3363) than men. However, in the longer term, from pre-Recession times in 2006 to 2019, women in Assembly had a significantly smaller proportional drop in employment (7.2%) compared to men (37.3%). The gender effects of the economic shock created by the COVID-19 pandemic on women employed in the sector will require examination in the future. See Table 6 below.

Table 6: Employment changes for Women in Auto, post-2008 (000s)

Employment	2008 (000s)	2010 (000s)	change in Employment (000s)	% change (2008 to 2010)	% Change (2006 to 2019)
3361 MVM - Women	10.7	7.8	-2.9	-27.1%	-7.2%
3361 MVM - Men	51.8	41.7	-10.1	-19.5%	-37.3%
3363 MVPM - Women	26.7	17.8	-8.9	-33.3%	-37.4%
3363 MVPM - Men	68.5	49.7	-18.8	-27.4%	-22.5%

(Source: LFS Custom Request, 2020, Statistics Canada)

CONCLUSION

The fact that women are under-represented in the automotive labour force has been observed and written about extensively. This paper reviewed the most recent government data to assess the current state of women's involvement in the automotive sector to demonstrate that there may be opportunities for employers to solve looming skills shortages by hiring and training more women, as well as widening labour market participation of women in the type of jobs that they hold.

Trends in the labour force data show job losses for women in lower skilled production jobs and job gains in specific technology fields, and negligible change in the skilled trades area. The age of the workforce and looming skills shortages suggests a need for strategies to recruit younger workers. The low proportion of young women in the sector suggests employers might want to use recruitment strategies designed to attract young women, in particular. While identifying specific recruitment strategies or government policies to encourage women to pursue careers in these fields or to encourage employers to hire women in these positions is beyond the scope of this paper, the project may consider such analysis in future reports.

The automotive sector has proven itself innovative and resilient through economic downturns and there will continue to be labour demand as the sector returns to normal operations, post the COVID-19 pandemic. The findings of this paper inform recruitment and policy solutions to address current and long-term labour shortages facing the automotive sector.

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