



Alberta's Aging Labour Force and Skill Shortages

Alberta Employment and Immigration

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Abstract

Over the last decade, Alberta's economy has been one of the strongest in Canada. The province enjoys high wages and low unemployment. In 2007, Alberta's unemployment rate fell to 3.6%, below the 5% level that is often used to indicate a balanced labour market. The low unemployment rate in Alberta raised concerns about skill shortages. There are a number of factors that influence skill shortages, one of which is an aging labour force.

Although both Canada and Alberta are experiencing an aging labour force, it is unlikely to directly create a widespread skill shortage. Proper planning and collaboration among government, industry and educational institutions may reduce the impact of aging on labour supply although pockets of skill shortages may still occur.

In 1971, 7.3% of Alberta's population was aged 65 years or older. By 2006, this proportion had

grown to 10.7% and by 2026, 17.5% of Albertans will be aged 65 years or older. By comparison, Canada's population is slightly older. In Canada, persons aged 65 years or older accounted for 8.1% and 13.7% of the total population in 1971 and 2006 respectively. By 2026, 21.4% of Canadians will be aged 65 years or older.

In 1997, 9.5% of Alberta's labour force was made up of individuals aged 55 years or older. By 2007, this proportion had grown to 14.0%. Over the same period, the proportion of the labour force made up of individuals less than 35 years of age had fallen from 42.9% in 1997 to 40.8% in 2007. New initiatives and policies aimed at keeping people in the labour force longer and providing an adequate supply of young workers with needed skill sets will play a key role in maintaining Alberta's prosperity.

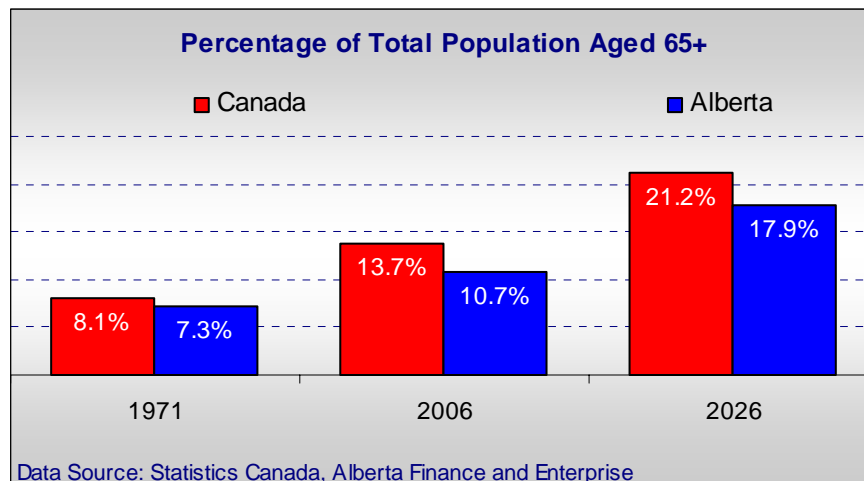
Introduction

In this report, the possibility of skill shortages due to an aging labour force in Alberta will be examined through an analysis of the age structure of the province's population and labour force. The effect

of Alberta's aging labour force is an important factor to consider when discussing skill shortages.

The Changing Age Structure of Alberta's Population

Figure 1



As shown in Figure 1, the proportion of Alberta's population aged 65 years or older is on the rise. Persons aged 65 years or older accounted for 7.3% of Alberta's total population in 1971 while in 2006 this age group made up 10.7% of the total population. Persons aged 65 years and older will

account for 17.9% of Alberta's total population by 2026 according to medium population projections. The population of Canada is older than that of Alberta. For example, persons aged 65 years or older accounted for 13.7% of Canada's total population in 2006. By 2026, 21.2% of Canada's population will consist of persons aged 65 years or older.

Alberta and Canada Population Distributions, 2006 and 2026

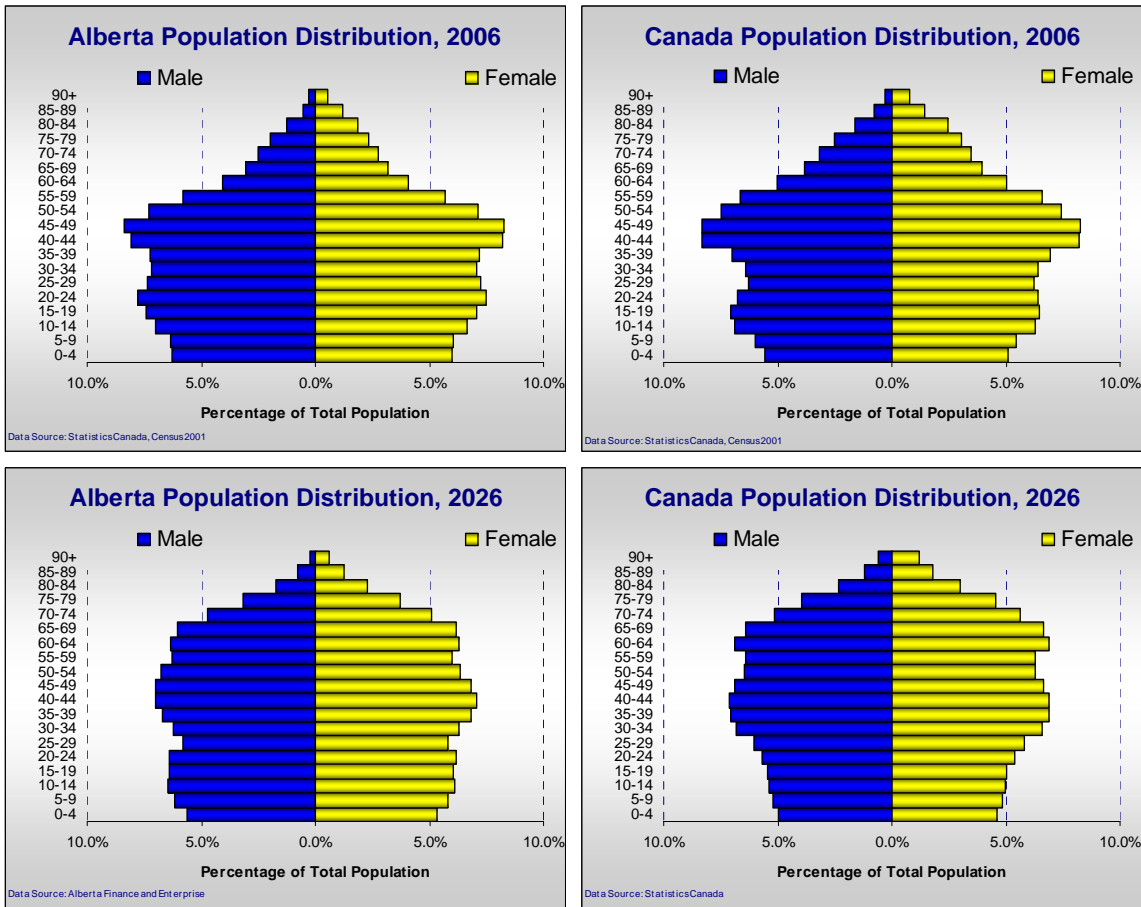
The population distribution in 2006 and 2026 for both Alberta and Canada is displayed in Figure 2. There is an upward shift in the shape of distribution for both Alberta and Canada. This indicates an increasing proportion of the population 65+.

The proportion of the Alberta population made up of persons aged 25-44 decreases from 29.8% in 2006, to 25.3% in 2026. For Canada, this proportion falls from about 27.9% to 24.9% over the same period.

Overall, Alberta's working age population (aged 15-64) decreases from 70.0% in 2006 to 64.6% in 2026. For Canada, this proportion falls from 68.6% in 2001 to 64.2% in 2026.

If current age-specific labour force participation rates in Alberta continue, between 2006 and 2026 Alberta's labour force will have grown by 23.5% while Alberta's total population will have grown by 26.4%. Over the same period, Canada's labour force will have grown by 7.2% while the population will have grown by 13.9%.

Figure 2



The Age Structure of Alberta's Labour Force

Figure 3 and Figure 4 show the changing age structure of the labour force for both Alberta and Canada. Between 1997 and 2007, the portion of Alberta's labour force aged 25–34 years has decreased from 26.6% to 22.8%. Over the same ten-year period, the percentage of those aged 45-54 in Alberta's labour force rose from 18.9% to 22.5%. This trend is also present within Canada's labour market to an even greater extent. In 1997, workers aged 25-

34 accounted for 25.4% of Canada's labour force while those aged 45-54 made up 20.4%. In 2007 these percentages stood at 21.7% and 24.2% respectively.

As current Albertans age and move closer towards retirement, the emerging trend shows fewer young Albertans available in the labour force to replace those who are leaving.

Figure 3

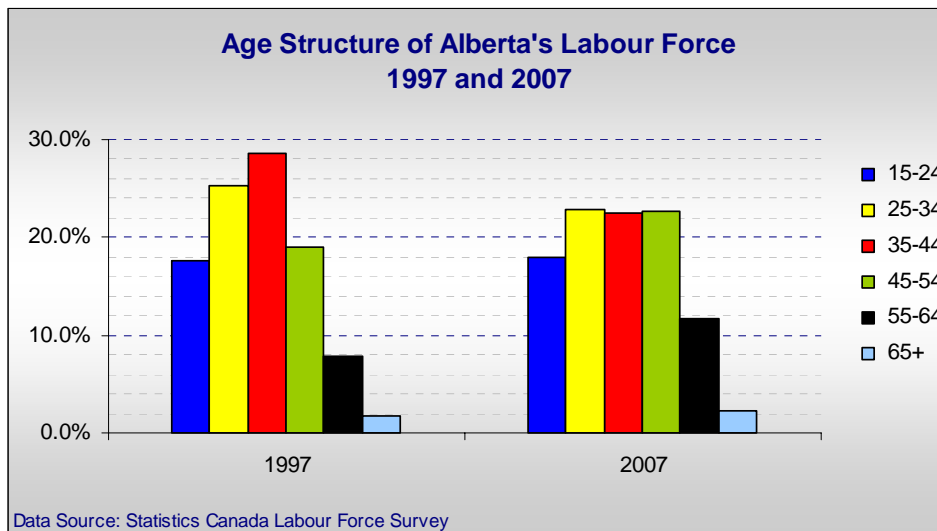
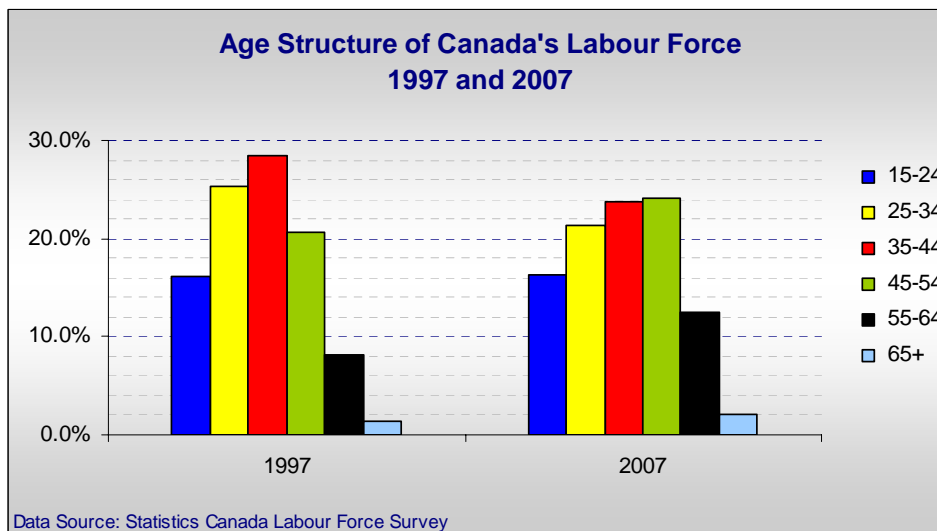


Figure 4

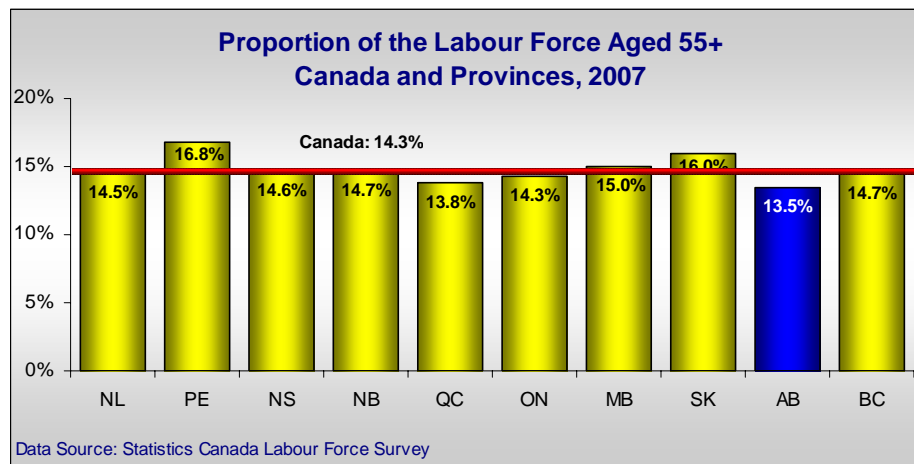


Age Structure of the Labour Force in Other Provinces

The structures of the labour force in other provinces show this same trend. There are, however, small differences across provinces. Figure 5 shows the percentage of the labour force that is aged 55 years and over for all provinces and Canada. The variance among provinces was quite small but shows

that the proportion of Alberta's labour force aged 55 years and over was the lowest of any province in 2007. Prince Edward Island had the highest proportion of its labour force aged 55 years and older at 16.8%.

Figure 5



Dependency Ratios in Alberta and Canada

Figure 6, on the following page, shows the effect the aging labour force will have on the old age dependency ratios¹ in both Alberta and Canada.

In 1971, for every 100 Albertans of working age (15-64 years old), there were approximately 12 Albertans aged 65 and over. Also in 1971, the youth dependency ratio² in Alberta was high. This indicates a large group of individuals under the age of 15. As time passed, that large group of individuals entered the working age population and as a result, the total dependency ratio³ fell. The same trends can be seen for the Canadian population, although the population in Alberta is shown to be slightly younger.

Based on both Statistics Canada and Alberta Finance and Enterprise population projections, it is expected that old age dependency ratios will increase in the coming years. For Canada, it is projected that for each 100 Canadians aged 15-64, there will be about 34 individuals aged 65 and over and 23 individuals less than fifteen years old by 2026. The same trend is expected for Alberta, but to a lesser degree. An increasing old age dependency ratio points to having a large retirement population in comparison to the working age population.

¹ Old Age Dependency Ratio: The number of persons aged 65 years and over per 100 persons aged 15 to 64.

² Youth Dependency Ratio: The number of persons aged 15 years and under per 100 persons aged 15 to 64.

³ Total Dependency Ratio: The number of persons aged 15 years and under plus the number of persons aged 65 years and over per 100 persons aged 15 to 64

Although Alberta's old age dependency ratio will increase, the youth dependency ratio is expected to be higher than what is expected for the rest of Canada. Therefore, although many workers will be nearing retirement, there are a similar number of individuals potentially entering the workforce.

In both cases the total dependency ratio in 2026 is expected to be below what it was in 1971, due to the drop in the youth dependency ratio. By 2026, the youth dependency ratio and the old age dependency ratio in Alberta are expected to be relatively equal.

Figure 6

Dependency Ratios for Canada and Alberta, 1971, 2001 and 2026

	Canada			Alberta		
	1971	2006	2026	1971	2006	2026
Old Age Dependency Ratio¹	12.98	19.98	33.26	11.94	15.33	25.69
Youth Dependency Ratio²	47.47	25.72	23.52	51.73	27.39	30.07
Total Dependency Ratio³	60.44	45.70	56.78	63.67	42.72	55.76

Data Source: Statistics Canada and Alberta Finance and Enterprise

¹The number of persons aged 65 years and older per 100 persons aged 15 to 64

²The number of persons aged 15 years and under per 100 persons aged 15 to 64

³The number of persons under 15 years of age, plus the number 65 years and older per 100 persons aged 15 to 64

Alberta's Age Structure by Occupation

As Figure 7 shows, occupations⁴ with an older labour force are spread across a wide variety of industries. In 2006 the occupation with the oldest age structure in Alberta was Judges. Although this occupation accounts for about 215 jobs, 76.7% of all Judges in Alberta were aged 55 years or older. Farmers and Farm Managers account for over 42,000 jobs in Alberta, and 47.1% of those employed in this occupation were over the age of 55. For every

four people employed as Farmers or Farm Managers that are aged 55 or older, there is only one worker that is aged 15-34. This points to the possibility of a skill shortage as those older workers retire. However, Farmers typically retire at an older age in comparison to other occupations, and new technologies and farm consolidation may reduce labour demand in the Agriculture industry in the future.

⁴ Occupations presented are classified according to the Standard Occupational Classification (SOC) 1991: SOC is used to classify approximately 500 occupations and is similar to the newer NOC system. SOC91 is used to compare data from 1991, 2001, and 2006.

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Figure 7

Alberta Occupations with the Highest Ratio of Workers Aged 55+, 1991, 2001 and 2006

	Alberta				Canada
	Employment 2006	% Aged 55+ (1991)	% Aged 55+ (2001)	% Aged 55+ (2006)	% Aged 55+ (2006)
All occupations	1,928,635	13.5%	11.6%	14.8%	15.3%
E011 Judges	215	85.4%	70.0%	76.7%	69.6%
A011 Legislators	935	28.5%	39.2%	51.3%	41.1%
A333 Government managers - Education policy development and program administration	135	18.2%	18.2%	48.1%	28.6%
I011 Farmers and farm managers	42,110	41.0%	44.6%	47.1%	42.2%
H511 Upholsterers	595	13.0%	29.4%	39.5%	27.7%
B314 Property administrators	4,990	24.9%	29.4%	37.2%	35.7%
H512 Tailors, dressmakers, furriers and milliners	1,545	16.7%	16.6%	34.6%	35.1%
A014 Senior managers - Health, education, social and community services	2,000	20.6%	19.7%	33.8%	29.7%
B414 Supervisors, mail and message distribution occupations	750	13.8%	16.6%	32.7%	22.8%
E216 Other religious occupations	1,055	36.3%	30.2%	32.2%	37.7%
E037 Program officers unique to government	290	18.2%	20.8%	31.0%	25.2%
E111 University professors	4,910	19.2%	23.2%	30.2%	31.2%
F036 Painters, sculptors and other visual artists	1,700	17.9%	17.9%	30.0%	33.1%
A012 Senior government managers and officials	1,620	11.8%	19.5%	29.9%	25.7%
D232 Midwives and practitioners of natural healing	775	8.9%	22.3%	29.7%	25.2%
E024 Ministers of religion	3,635	27.4%	25.9%	29.6%	36.3%
G132 Real estate agents and salespersons	6,200	17.2%	27.0%	29.5%	36.4%
E035 Education policy researchers, consultants and program officers	1,900	11.0%	19.6%	28.7%	24.5%
H712 Bus drivers and subway and other transit operators	9,615	17.6%	22.5%	28.7%	33.8%
A013 Senior managers - Financial, communications carriers and other business services	4,825	17.3%	22.3%	28.5%	28.3%
D111 Head nurses and supervisors	650	10.1%	12.4%	28.5%	20.1%
A322 Administrators in post-secondary education and vocational training	1,255	17.2%	15.0%	28.3%	26.0%
A301 Insurance, real estate and financial brokerage managers	6,260	15.6%	21.6%	27.5%	26.0%
A016 Senior managers - Goods production, utilities, transportation and construction	6,640	22.3%	20.1%	27.1%	29.2%
B115 Assessors, valuers and appraisers	1,665	11.5%	14.6%	27.0%	23.9%
H432 Electric appliance servicers and repairers	735	14.3%	16.9%	26.5%	25.1%
A015 Senior managers - Trade, broadcasting and other services, n.e.c.	3,300	14.1%	16.1%	26.5%	28.5%
G933 Janitors, caretakers and building superintendents	26,550	20.3%	21.2%	26.2%	25.6%
G631 Security guards and related occupations	8,300	26.3%	22.4%	26.0%	25.7%
G973 Other elemental sales occupations	4,025	11.0%	18.6%	26.0%	19.7%
I021 General farm workers	16,150	19.6%	23.1%	25.5%	23.8%
E021 Psychologists	1,865	8.6%	21.7%	25.5%	27.2%
B211 Secretaries (except legal and medical)	23,690	7.8%	15.7%	25.1%	23.4%
A222 Accommodation service managers	3,130	16.1%	24.5%	24.8%	28.7%
E121 College and other vocational instructors	9,965	9.2%	16.9%	24.6%	22.4%

Data Source: Statistics Canada - Cat. No. 97F0012XCB01026

Note: Occupations with total employment less than 200 were excluded

A listing of the occupations in Alberta that have a total labour force exceeding 3,000 and have the highest proportion of that labour force aged 55 and over is presented in Appendix 1. Among the list are

Registered Nurses, Physicians and Truck Drivers. These occupations are likely to experience an increase in demand over the next twenty years.

Age Structure of Broad Occupational Groups in Alberta

Figure 8 shows three occupational groups in Alberta with the oldest age structure. These occupations are based on SOC91 classifications. The occupation with the oldest age structure is the Unique to Primary Industry occupations⁵. The large proportion of workers aged 55 and over is evident in Figure 8. However, there is also a large proportion of workers aged 15-24 years. Management occupations

have the second oldest age structure in the province while occupations in Social Science, Education, Government and Religion have the third oldest age structure. It should be noted however, that only occupations Unique to Primary Industry and Management occupations have a greater than average proportion of workers aged 55 and over.

Figure 8

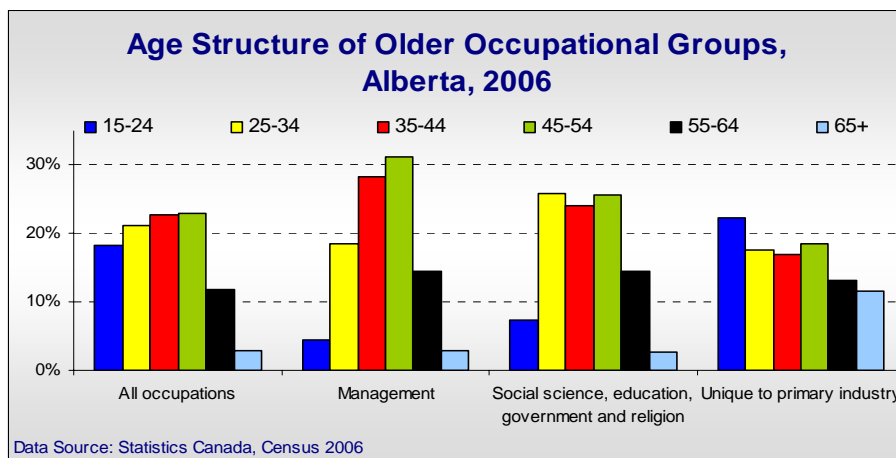
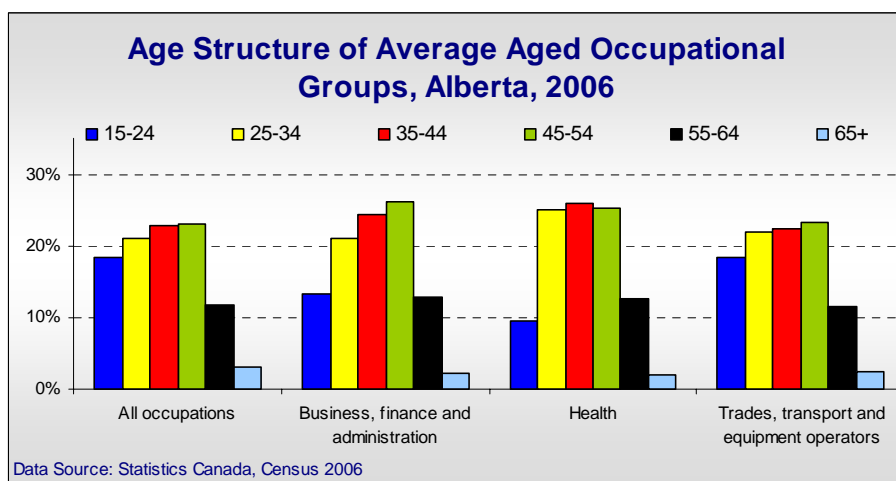


Figure 9 shows occupational groups in Alberta with average age structures. Health occupations, Business, Finance and Administration occupations, and Trades, Transport and Equipment Operators all have age structures that are very

similar to the overall age structure of the Alberta labour force. As shown, Health occupations do have relatively few workers aged 15-24, perhaps due to the long training period required for this type of work.

Figure 9



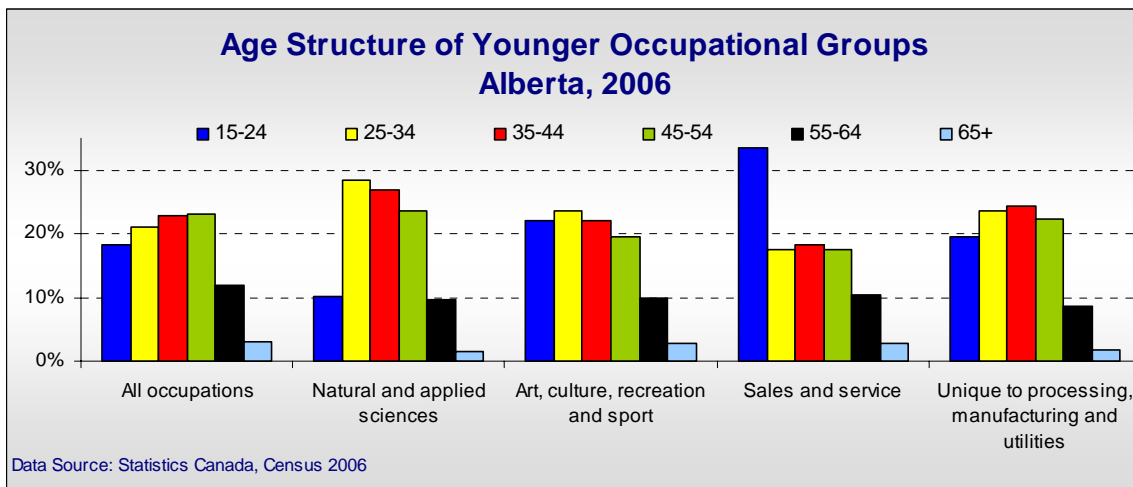
⁵ Occupations in this broad occupational category are primarily concerned with operating farms and supervising or doing farm work; operating fishing vessels and doing specialized fishing work; and in doing supervision and production work in oil and gas production and forestry and logging.

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Figure 10 shows the occupations in Alberta with a younger age structure. Workers aged 15-24 years account for 34.0% of employment in Sales and

Service occupations. Occupations in Natural and Applied Sciences also have a significantly younger than average age structure.

Figure 10



For a detailed comparison of the age structure of each of the SOC91 occupations outlined above, please see Appendix 2.

Alberta's Age Structure by Industry

The following section provides details on the age structure of the major industries in Alberta. The industries with the oldest age structures are shown in Figure 11. The Agriculture industry has the highest proportion of its employment filled by workers aged 55 and over. The Educational Services industry also

faces a relatively older labour force. Although the proportion of its workforce aged 55 and over is close to the provincial average, nearly one third of all employment in this industry is filled by those aged 45-54 years.

Figure 11

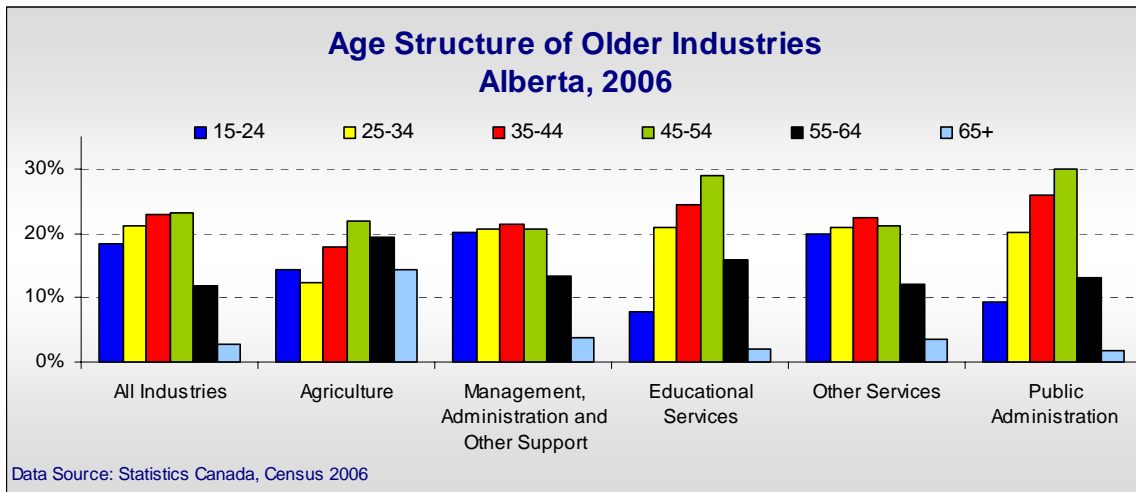


Figure 12, on the following page, shows those industries with average age structures. Of the six industries shown, two (Construction and Wholesale Trade) have below average representation of workers aged 55 years and over. In industries with longer

education and training periods, such as Health Care and Social Assistance and Professional, Scientific and Technical Services, there is an under representation of workers aged 15-24 years.

Figure 12

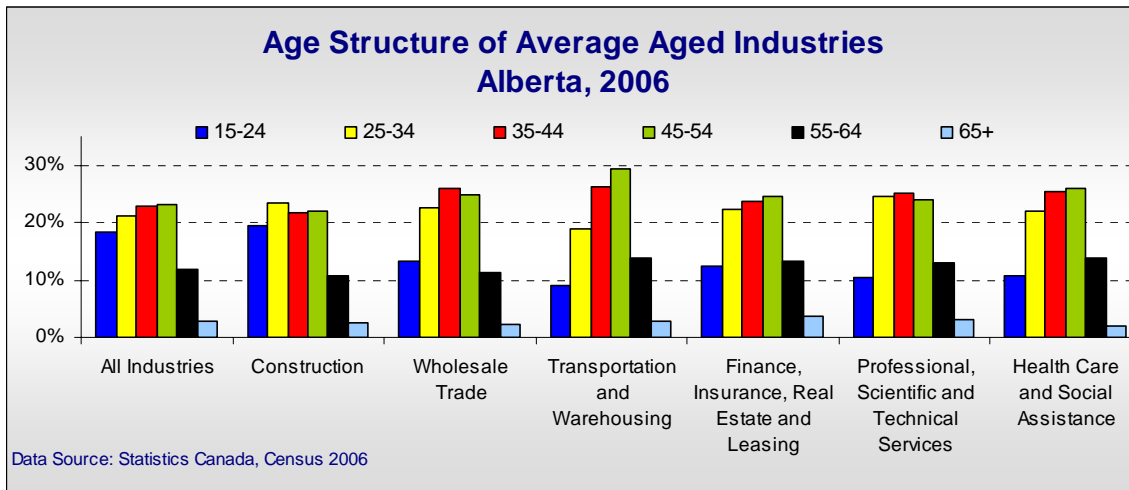
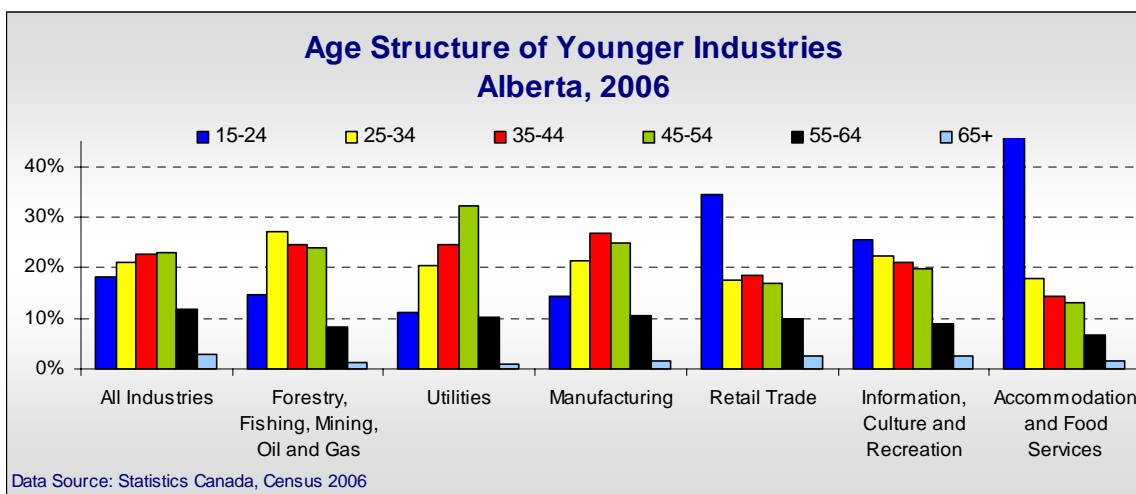


Figure 13 shows those industries with younger age structures. Workers aged 15-24 years account for 46.5% of total employment in the Accommodation and Food Services industry. Other

industries with a high percentage of younger workers include Retail Trade and Information, Culture and Recreation.

Figure 13



Conclusion

The statistics in this report identify occupations and industries in Alberta that face skill shortages due to an aging population. However, an aging population is not the only cause of potential shortages. Other factors, such as working hours, wages, stress levels and the physical demands of certain occupations, are also important factors.

Agriculture, Management, Administration and Other Support, and Educational Services as well as

specific occupations such as Registered Nurses, Transit Operators and Senior Managers face older age structures that may make them more susceptible to skill shortages. Although a widespread skill shortage due to an aging labour force is unlikely, pockets of skill shortages may continue to emerge.

Alberta's Aging Labour Force and Skill Shortages

Appendix 1

Alberta Occupations with Total Employment of 3,000+ with the Highest Ratio of Workers Aged 55+, 1991, 2001 and 2006

	Alberta				Canada
	Employment 2006	% Aged 55+ (1991)	% Aged 55+ (2001)	% Aged 55+ (2006)	% Aged 55+ (2006)
All occupations	1,928,635	13.5%	11.6%	14.8%	15.3%
I011 Farmers and farm managers	48,245	41.0%	44.6%	47.1%	47.1%
B314 Property administrators	4,570	24.9%	29.4%	37.2%	37.2%
E111 University professors	4,810	19.2%	23.2%	30.2%	30.2%
E024 Ministers of religion	3,475	27.4%	25.9%	29.6%	29.6%
G132 Real estate agents and salespersons	3,350	17.2%	27.0%	29.5%	29.5%
H712 Bus drivers and subway and other transit operators	21,005	17.6%	22.5%	28.7%	28.7%
A013 Senior managers - Financial, communications carriers and other business services	8,630	17.3%	20.3%	28.5%	28.5%
A301 Insurance, real estate and financial brokerage managers	6,785	15.6%	21.6%	27.5%	27.5%
A016 Senior managers - Goods production, utilities, transportation and construction	5,235	22.3%	20.1%	27.1%	27.1%
A015 Senior managers - Trade, broadcasting and other services, n.e.c.	22,335	14.1%	16.1%	26.5%	26.5%
G933 Janitors, caretakers and building superintendents	5,815	20.3%	21.2%	26.2%	26.2%
G631 Security guards and related occupations	6,515	26.3%	22.4%	26.0%	26.0%
G973 Other elemental sales occupations	5,885	11.0%	18.6%	26.0%	26.0%
I021 General farm workers	3,120	19.6%	23.1%	25.5%	25.5%
B211 Secretaries (except legal and medical)	3,765	7.8%	15.7%	25.1%	25.1%
A222 Accommodation service managers	4,265	16.1%	24.5%	24.8%	24.8%
E121 College and other vocational instructors	15,920	9.2%	16.9%	24.6%	24.6%
D012 General practitioners and family physicians	7,355	13.7%	18.2%	23.9%	23.9%
A323 School principals and administrators of elementary and secondary education	4,755	10.5%	15.8%	23.8%	23.8%
G811 Visiting homemakers, housekeepers and related occupations	9,730	18.5%	17.2%	23.5%	23.5%
H713 Taxi and limousine drivers and chauffeurs	4,420	8.2%	15.8%	22.8%	22.8%
B561 Mail, postal and related clerks	3,475	11.0%	13.6%	22.0%	22.0%
B111 Bookkeepers	27,415	13.4%	17.1%	21.7%	21.7%
D233 Registered nursing assistants	18,665	8.4%	15.5%	21.4%	21.4%
G931 Light duty cleaners	34,585	14.3%	15.7%	20.7%	20.7%
A371 Construction managers	4,955	15.1%	16.4%	20.4%	20.4%
H711 Truck drivers	3,280	11.6%	15.5%	19.9%	19.9%
B022 Professional occupations in business services to management	21,900	11.9%	14.0%	19.9%	19.9%
F033 Musicians and singers	14,335	8.4%	15.4%	19.8%	19.8%
E012 Lawyers and Quebec notaries	4,520	8.9%	9.8%	19.6%	19.6%
G131 Insurance agents and brokers	5,190	12.7%	15.6%	18.9%	18.9%
A114 Other administrative services managers	6,020	10.0%	13.3%	18.6%	18.6%
C031 Civil engineers	3,305	8.7%	13.3%	18.4%	18.4%
A141 Facility operation and maintenance managers	4,445	12.6%	12.8%	18.2%	18.2%
D112 Registered nurses	5,265	8.9%	15.2%	18.0%	18.0%

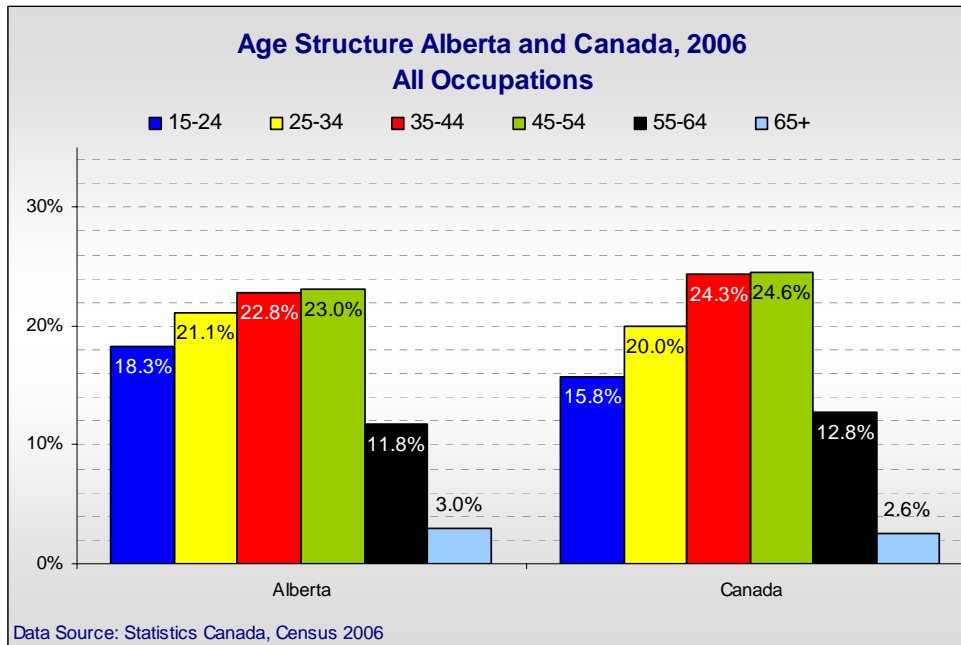
Data Source: Statistics Canada - Cat. No. 97F0012XCB01026

n.e.c. Not Elsewhere Classified

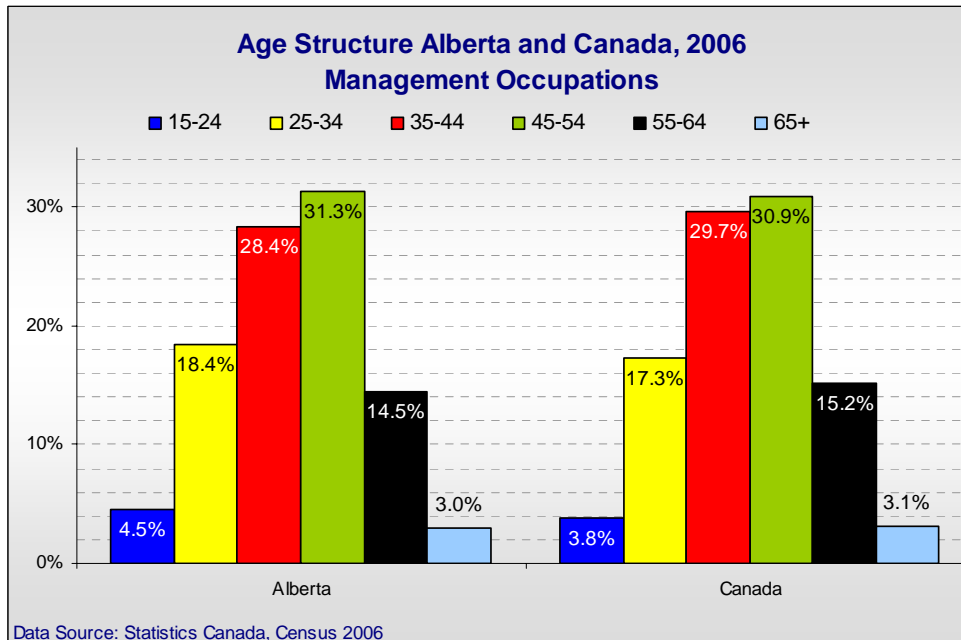
Appendix 2

The following series of figures present the age structure of each broad SOC91 occupation for both Alberta and Canada for comparison purposes.

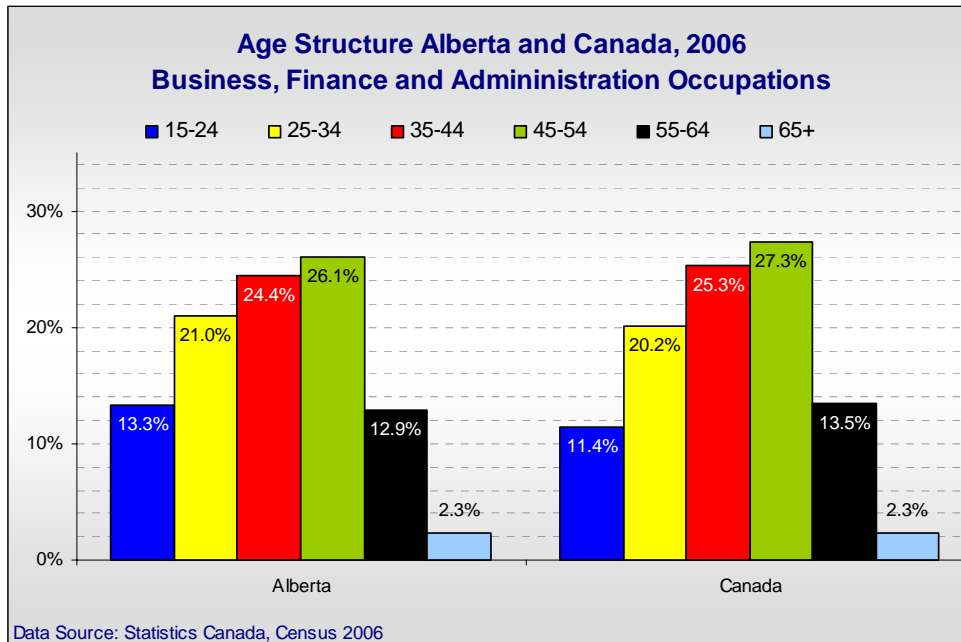
All Occupations



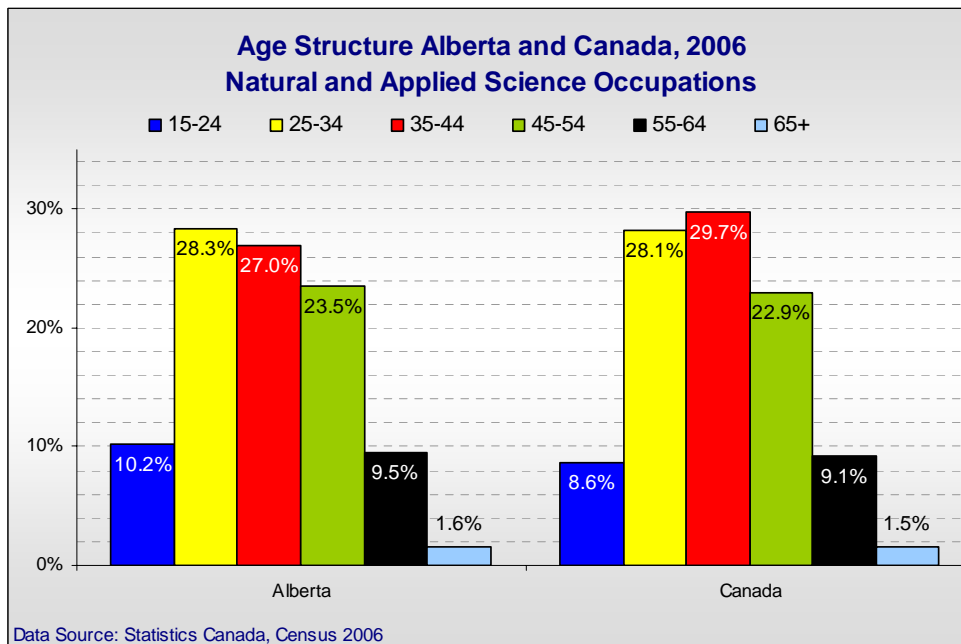
Management Occupations



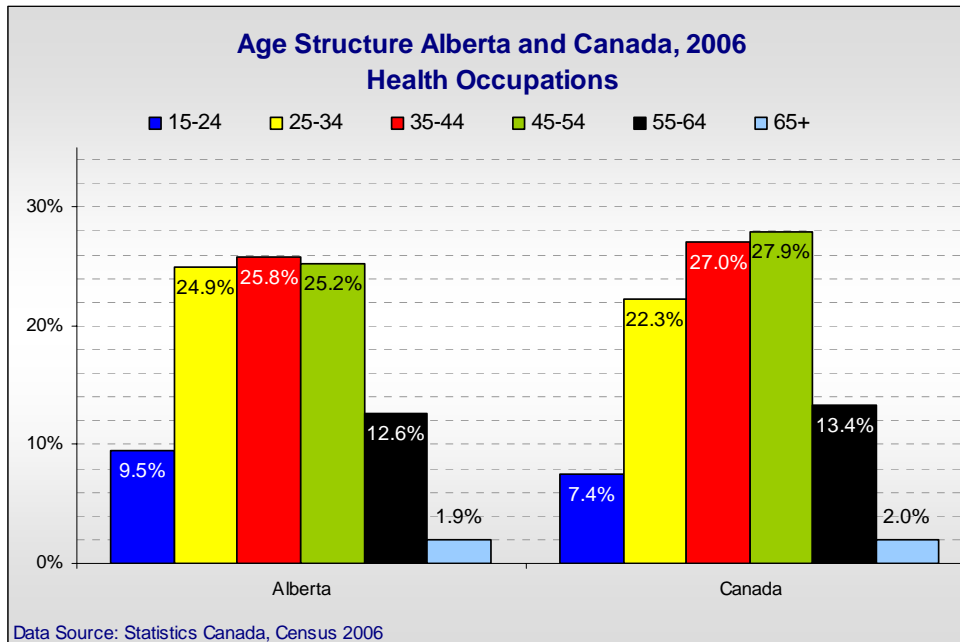
Business, Finance and Administration Occupations



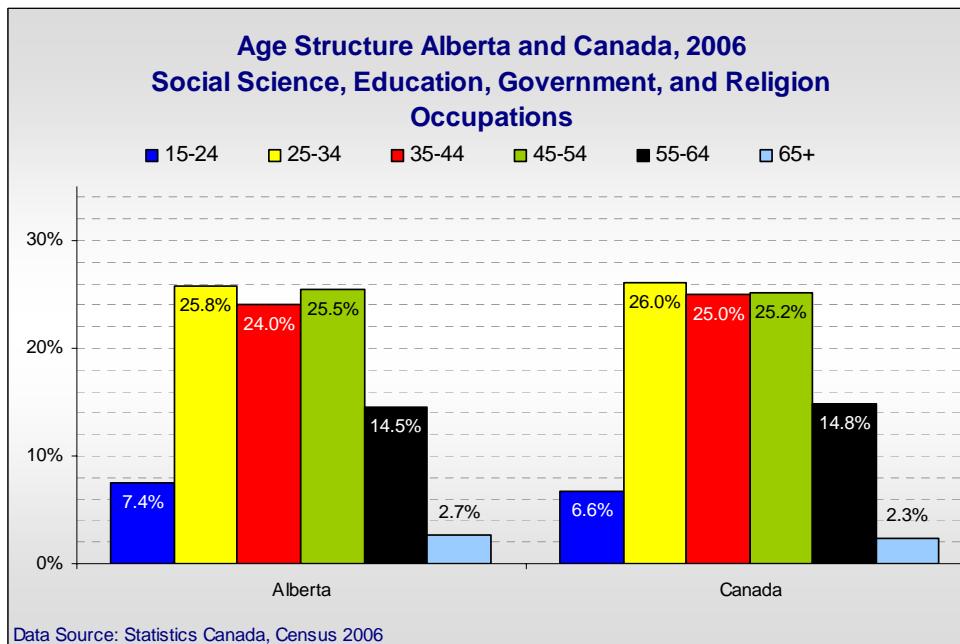
Natural and Applied Science Occupations



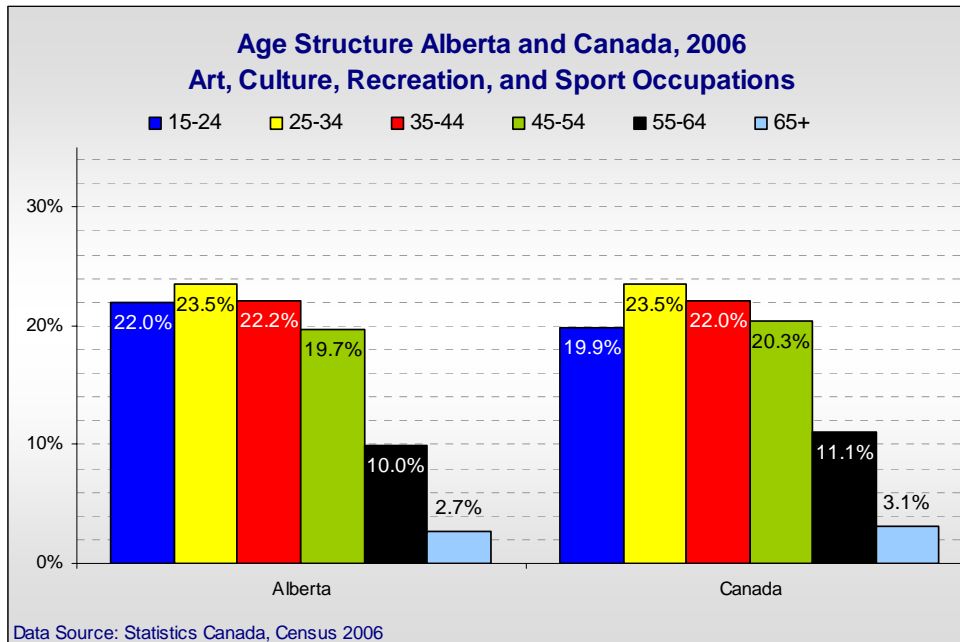
Health Occupations



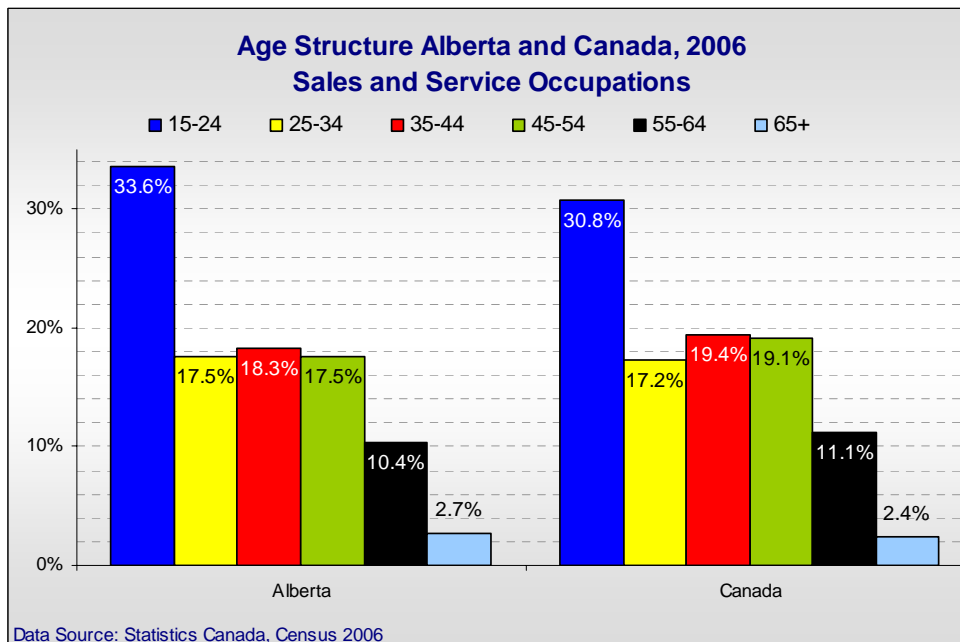
Social Science, Education, Government and Religion Occupations



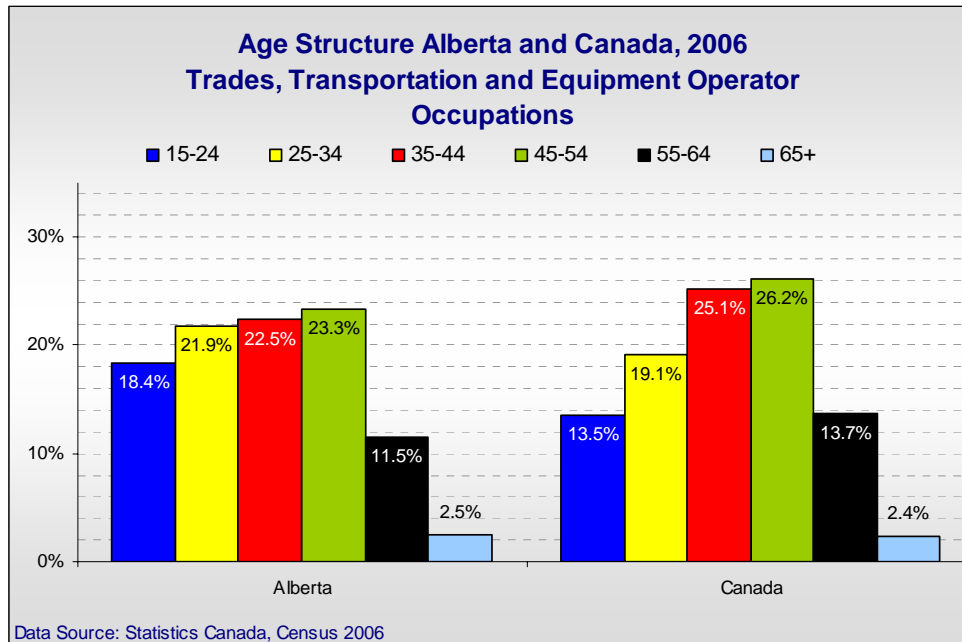
Art, Culture, Recreation and Sport Occupations



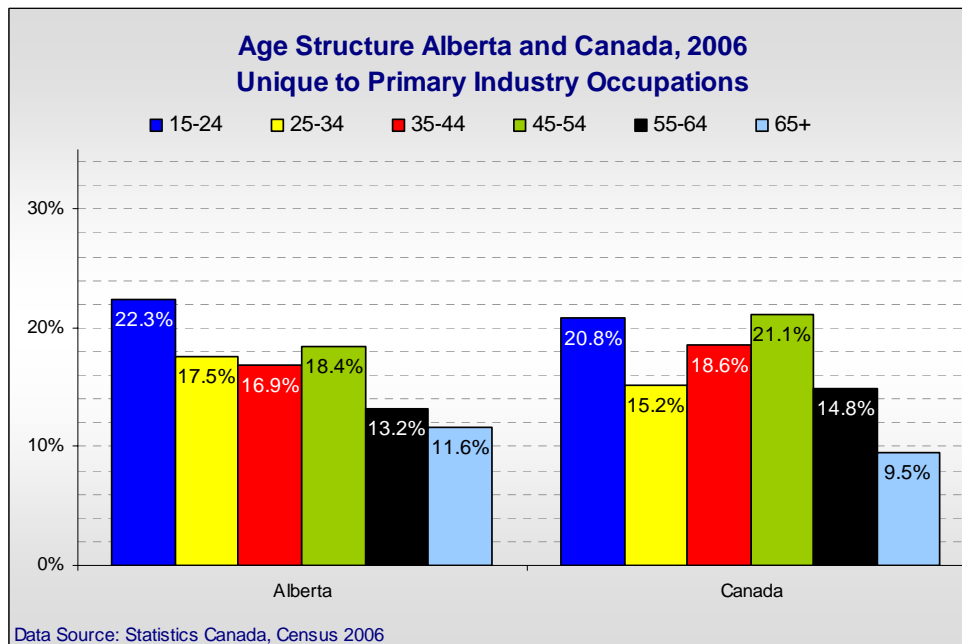
Sales and Service Occupations



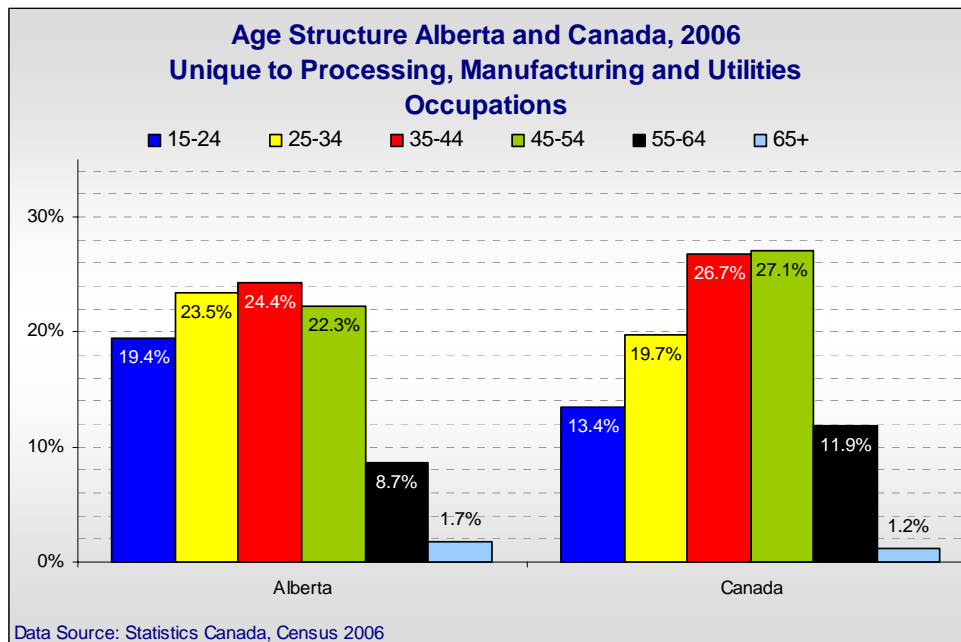
Trades, Transportation and Equipment Operator Occupations



Unique to Primary Industry Occupations



Unique to Processing, Manufacturing and Utilities Occupations



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