

Alberta's Ageing Labour Force and Skill Shortages



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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 2004, Alberta's unemployment rate fell to 4.7%, dipping below the 5% level that is often used to indicate a balanced labour market. The low unemployment rate in Alberta has raised concerns about skill shortages. There are a number of factors that influence skill shortages, one of which is an ageing labour force.

Although both Canada and Alberta are experiencing an ageing labour force, it is unlikely to directly create a widespread skill shortage. Proper planning and collaboration between government, industry and educational institutions may reduce the impact of ageing 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 2001, this proportion had

grown to 10.4% 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 13.0% of the total population in 1971 and 2001 respectively. By 2026, 21.4% of Canadians will be aged 65 years or older.

In 1994, 9.1% of Alberta's labour force was made up of individuals aged 55 years or older. By 2004, this proportion had grown to 12.8%. Over the same period, the proportion of the labour force made up of individuals less than 35 years of age had fallen from 45.5% in 1994 to 40.4% in 2004. 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 ageing 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 ageing labour force is an important factor

to consider when discussing skill shortages. This report will aim to clarify whether or not an ageing labour force alone will be the cause of significant skill shortages in Alberta.

The Changing Age Structure of Alberta's Population

Table 1

Percentage of Total Population Aged 65+, 1971, 2001 and 2026

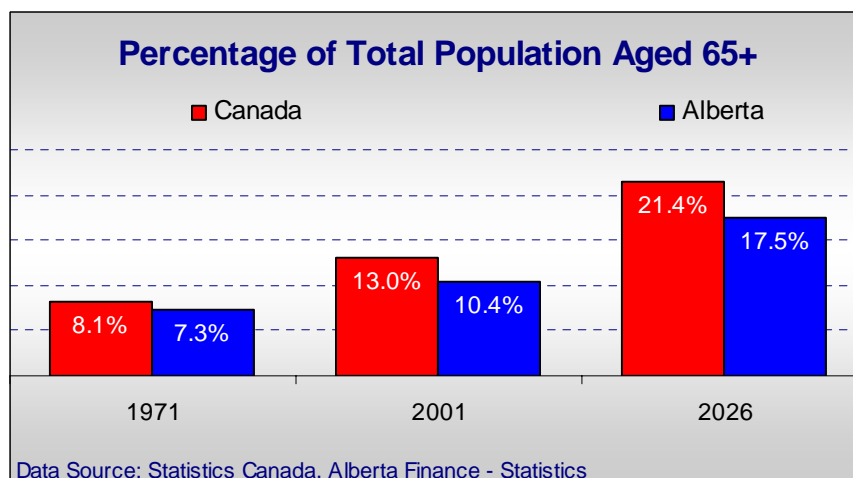
	1971	2001	2026
Canada	8.1%	13.0%	21.4%
Alberta	7.3%	10.4%	17.5%

Data Source: Statistics Canada, Alberta Finance - Statistics

As shown in Table 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 2001 this age group made up 10.4% of the total population. Persons aged 65 years and older will account for 17.5% of Alberta's total population by 2026.

The population of Canada is older than that of Alberta. For example, persons aged 65 years or older accounted for 13.0% of Canada's total population in 2001. By 2026, 21.4% of Canada's population will consist of persons aged 65 years or older. Chart 1 shows the age structure of Alberta's population in comparison with that of Canada.

Chart 1



Alberta and Canada Population Distributions, 2001 and 2026

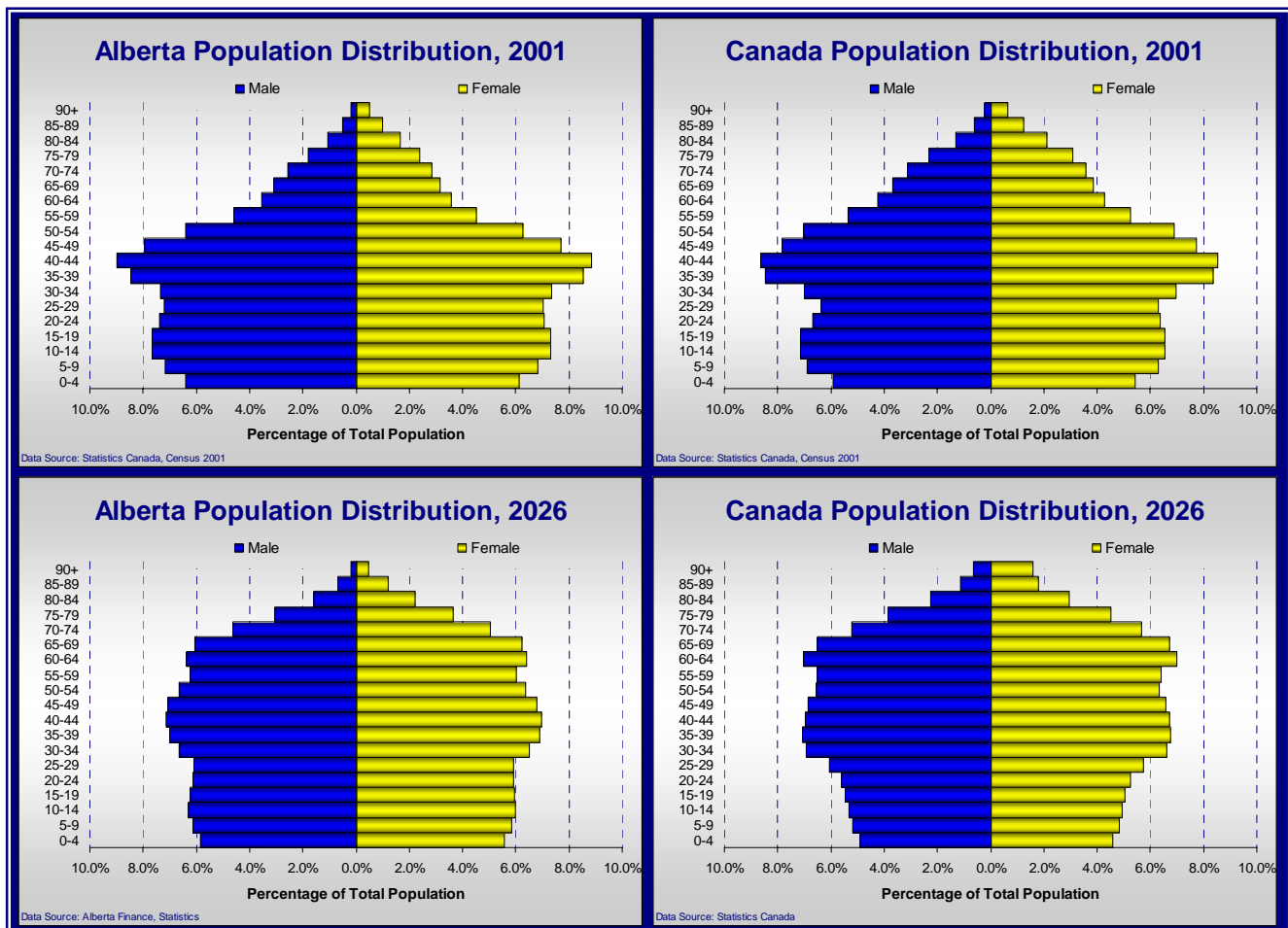
The population distribution in 2001 and 2026 for both Alberta and Canada is displayed in Figure 1. There is an upward shift in the shape of distribution for both Alberta and Canada. This indicates a greater portion of the total population is made up of older people.

The proportion of the Alberta population made up of persons aged 25-44 decreases from 31.9% in 2001, to 26.6% in 2026. For Canada, this proportion falls from about 30.3% to 26.4% over the same period.

Overall, Alberta's working age population (aged 15-64) decreases from 68.9% in 2001 to 64.6% in 2026. For Canada, this proportion falls from 68.0% in 2001 to 63.7% in 2026.

If current age-specific participation rates in Alberta continue, between 2004 and 2026 Alberta's labour force will have grown by 22.9% while Alberta's total population will have grown by 27.6%. Over the same period, Canada's labour force will have grown by 6.7% while its population will have grown by 13.8%.

Figure 1



The Age Structure of Alberta's Labour Force

Chart 2 and Chart 3 show the changing age structure of the labour force for both Alberta and Canada. Between 1994 and 2004, the portion of Alberta's labour force aged 25–34 years has decreased from 27.6% to 22.1%. Over the same ten-year period, the percentage of those aged 45-54 in Alberta's labour force rose from 17.3% to 22.5%. This trend is also present within Canada's labour market to an even greater extent. In 1994, workers aged 25-34 accounted for 27.2% of Canada's labour force

while those aged 45-54 made up 18.9%. In 2004 these percentages stood at 21.6% and 23.4% 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. Strong economic growth in Alberta is also leading to the creation of new positions, which must be filled.

Chart 2

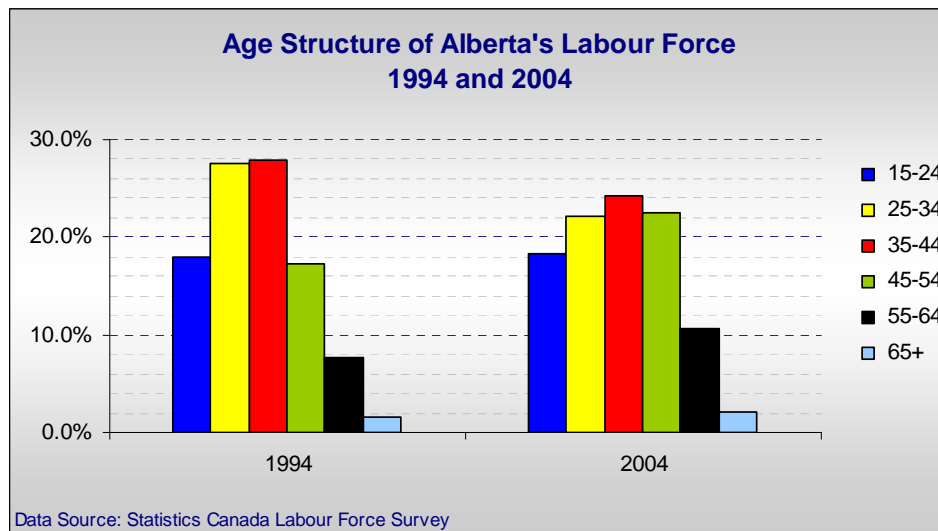
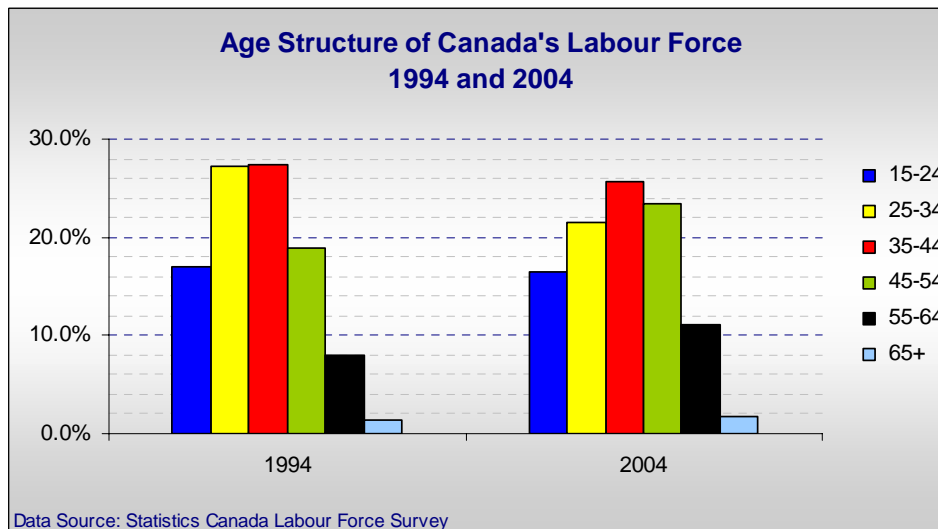


Chart 3

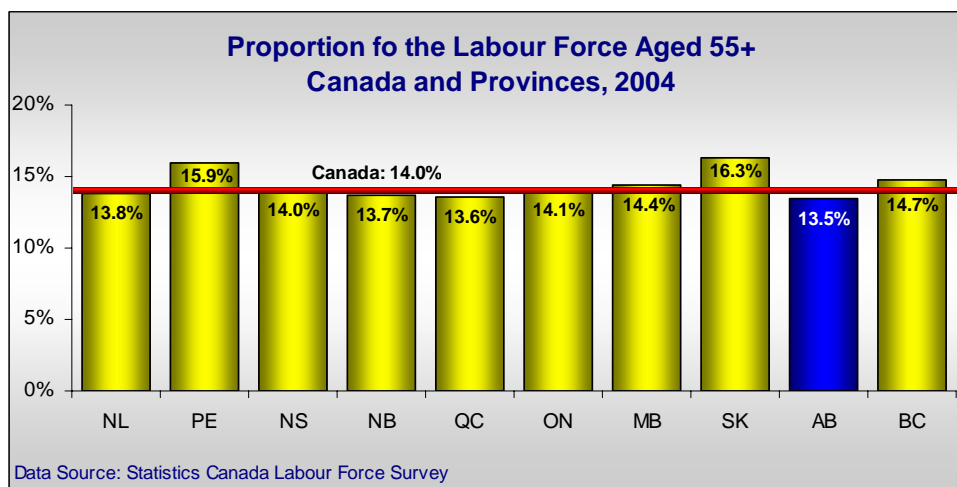


Age Structure of the Labour Force in Other Provinces

The structures of the labour force in other provinces show this same trend. There are, however, small differences across provinces. Chart 4 shows the percentage of the labour force that is aged 55 years and over for all provinces and Canada. The variance between 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 2004. Saskatchewan had the highest proportion of its labour force aged 55 years and older at 16.3%.

Chart 4



Dependency Ratios in Alberta and Canada

Table 2, on the following page, provides details on one consequence of both Alberta's and Canada's ageing populations. The table shows the effect the ageing 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 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.

Table 2

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

	Canada			Alberta		
	1971	2001	2026	1971	2001	2026
Old Age Dependency Ratio¹	12.98	19.07	33.63	11.94	15.05	27.06
Youth Dependency Ratio²	47.47	28.08	23.34	51.73	30.14	27.62
Total Dependency Ratio³	60.44	47.14	56.97	63.67	45.20	54.67

Data Source: Statistics Canada and Alberta Finance - Statistics

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 Table 3 shows, occupations with an older labour force are spread across a wide variety of industries. The occupation with the oldest age structure in Alberta in 2001 was Judges. Although this occupation accounts for about 200 jobs, 70% of all Judges in Alberta were aged 55 years or older in 2001. Farmers and Farm Managers account for over 50,000 jobs in Alberta, and 44.6% of those employed in this occupation are 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.

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 in order to compare data from 1991 to data from 2001.

Table 3

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

	Alberta				Canada
	Employment 2001	Workers aged 15- 34 per Worker aged 55+ (2001)	% Aged 55+ (1991)	% Aged 55+ (2001)	% Aged 55+ (2001)
All occupations	1,681,980	3.46	10.1%	11.6%	11.8%
E011 Judges	300	0.05	85.4%	70.0%	56.3%
I011 Farmers and farm managers	48,245	0.25	41.0%	44.6%	41.1%
A011 Legislators	1,045	0.24	28.6%	39.2%	36.3%
E216 Other religious occupations	680	1.10	36.3%	30.1%	29.9%
H511 Upholsterers	730	0.56	13.0%	29.5%	21.4%
B314 Property administrators	4,570	0.61	24.9%	29.4%	31.3%
C164 Construction inspectors	1,200	0.76	14.2%	27.9%	19.4%
B317 Court officers and justices of the peace	255	0.64	30.2%	27.5%	20.6%
G132 Real estate agents and salespersons	4,810	0.60	17.2%	27.0%	31.6%
E024 Ministers of religion	3,475	0.72	27.4%	25.9%	32.2%
A222 Accommodation service managers	3,350	1.03	16.1%	24.5%	25.9%
H131 Bricklayers	1,065	1.30	12.1%	23.5%	17.5%
C052 Landscape architects	235	0.82	0.0%	23.4%	11.2%
C048 Other professional engineers, n.e.c.	1,305	0.77	6.8%	23.4%	16.2%
E111 University professors	4,155	0.53	19.2%	23.2%	28.7%
I021 General farm workers	21,005	2.12	19.6%	23.1%	18.8%
G623 By-law enforcement and other regulatory officers, n.e.c.	630	1.45	8.3%	23.0%	13.3%
J196 Other metal products machine operators	265	1.83	7.1%	22.6%	9.0%
H712 Bus drivers and subway and other transit operators	8,630	0.72	17.6%	22.5%	25.6%
G631 Security guards and related occupations	6,785	2.28	26.3%	22.4%	22.7%
D232 Midwives and practitioners of natural healing	470	1.00	8.9%	22.3%	15.1%
C051 Architects	1,210	0.94	7.9%	21.9%	17.0%
I014 Nursery and greenhouse operators and managers	530	1.09	19.6%	21.7%	22.9%
E021 Psychologists	1,570	0.96	8.6%	21.7%	19.9%
A301 Insurance, real estate and financial brokerage managers	5,235	0.65	15.6%	21.6%	21.5%
E038 Other professional occupations in social science, n.e.c.	395	1.71	10.2%	21.5%	14.3%
H312 Tool and die makers	350	1.93	7.4%	21.4%	14.5%
C122 Agricultural and fish products inspectors	375	1.31	12.1%	21.3%	13.2%
G933 Janitors, caretakers and building superintendents	22,335	1.38	20.3%	21.2%	20.6%
J162 Fabric, fur and leather cutters	260	0.82	24.5%	21.2%	16.3%
A341 Library, archive, museum and art gallery managers	450	0.74	7.4%	21.1%	15.2%
E037 Program officers unique to government	240	1.00	18.2%	20.8%	15.0%
H418 Elevator constructors and mechanics	315	0.92	11.9%	20.6%	16.0%
F021 Writers	1,745	1.63	15.6%	20.6%	21.4%
A013 Senior managers - Financial, comm. carriers and other	5,815	0.68	17.3%	20.3%	20.9%

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

Note: Occupations 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 time and are already experiencing skill shortages.

Age Structure of Broad Occupational Groups in Alberta

Chart 5 shows the age structure of the three occupations 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 occupations. The large proportion of workers aged 55 and over is evident in Chart 5. 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.

Chart 5

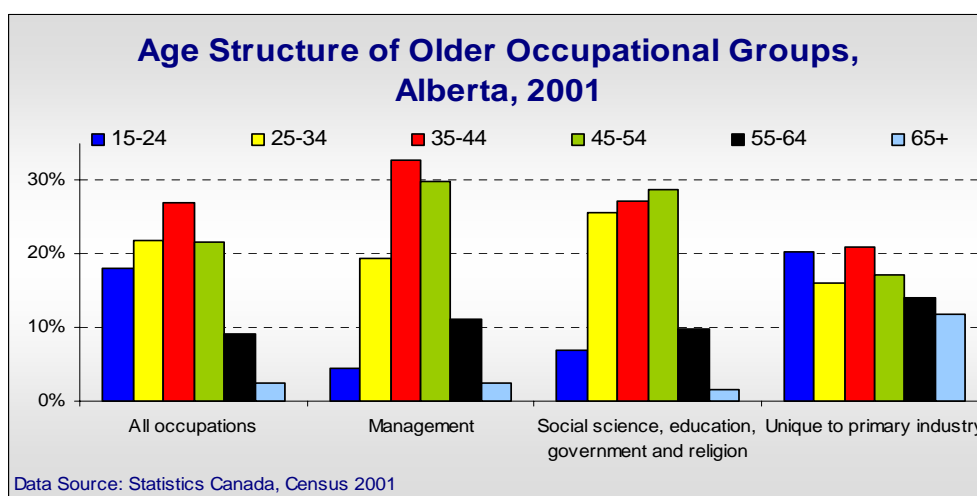


Chart 6 shows the age structure of the occupational groups in Alberta with average age structures. Health occupations, Business, Finance and Administration occupations, and Trades, Transport and Equipment Operators all have age

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.

Chart 6

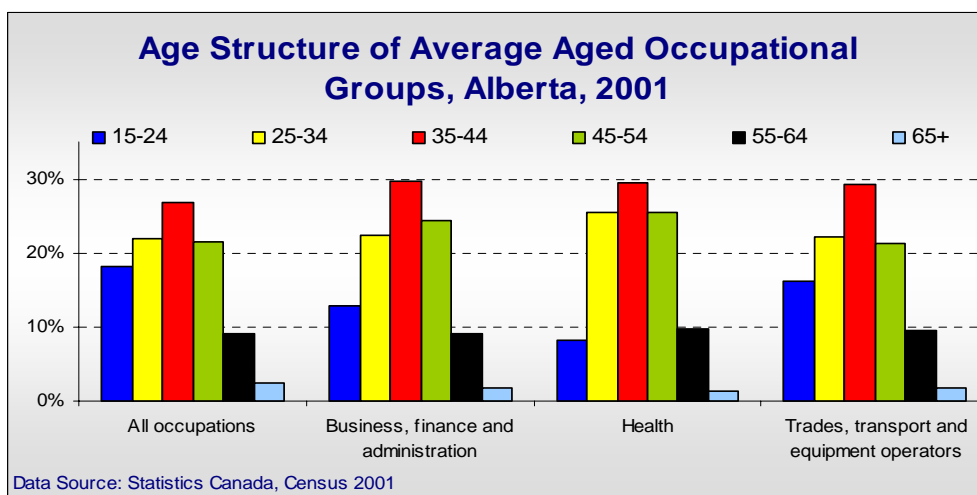
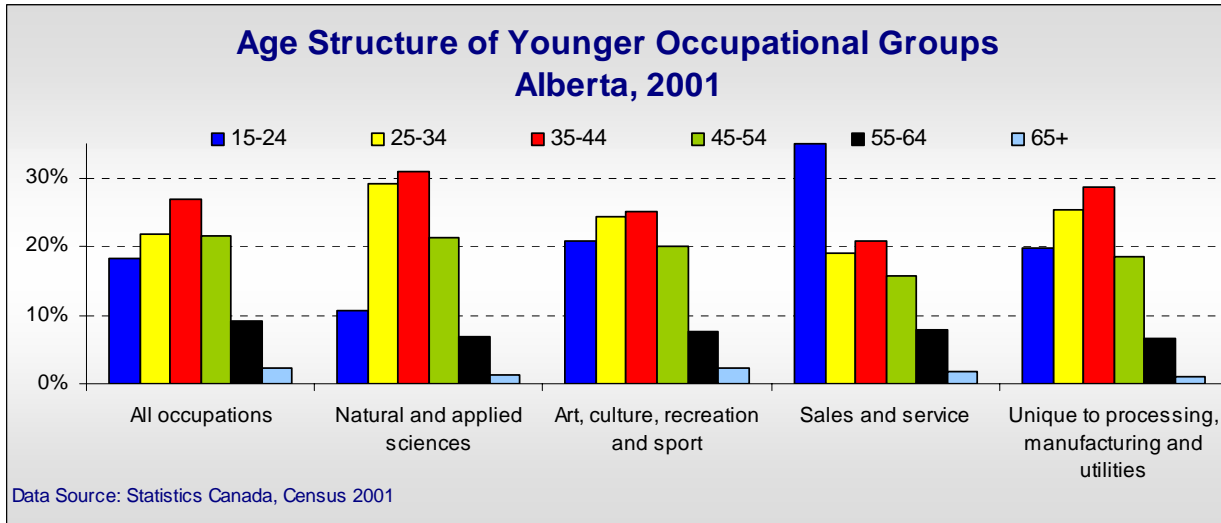


Chart 7 shows the occupations in Alberta with a younger age structure. Workers aged 15-24 years account for 34.9% of employment in Sales and

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

Chart 7



➔ 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 Chart 8. 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.

Chart 8

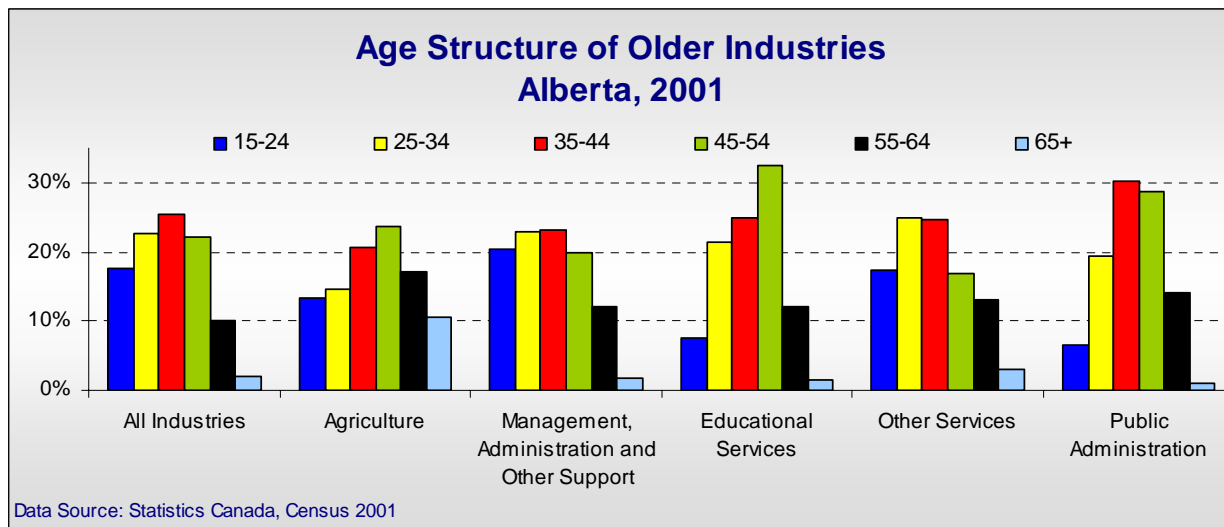


Chart 9, on the following page, shows those industries with average age structures. Of the six industries shown, two (Construction and Wholesale Trade) have below average representation of workers aged 55 years and over. In industries with longer

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.

Chart 9

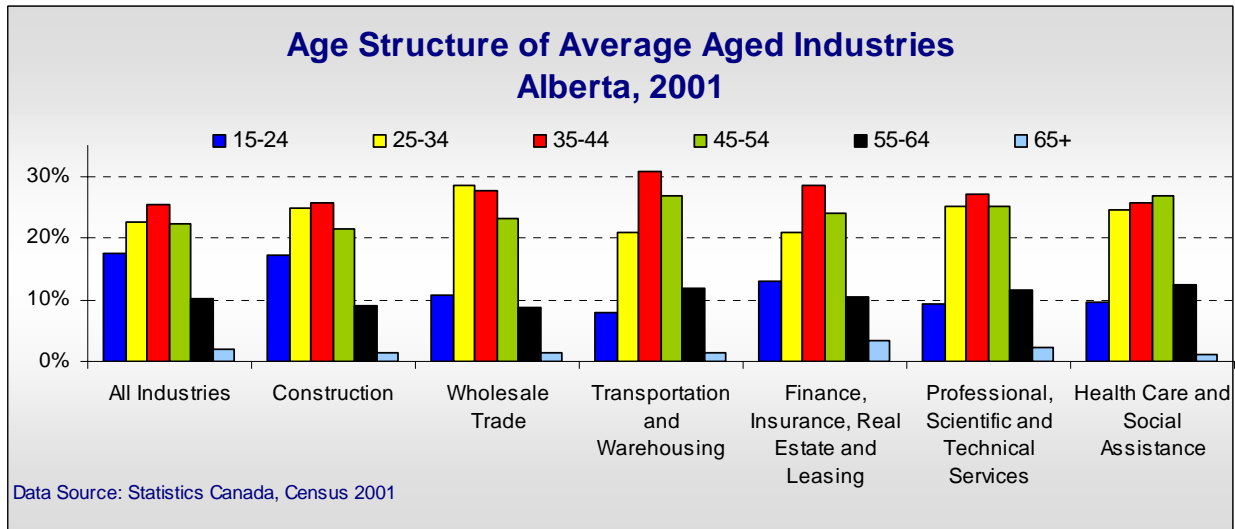
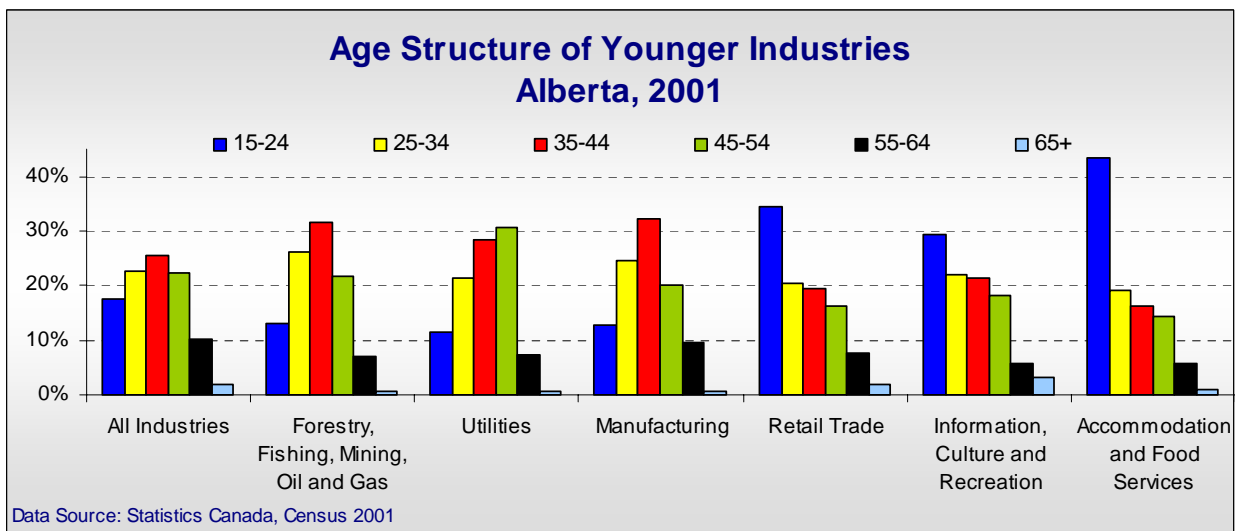


Chart 10 shows those industries with younger age structures. Workers aged 15-24 years account for 43.5% of total employment in the Accommodation and Food Service industry. Other

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

Chart 10



Conclusion

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

Industries such as Agriculture, Management, Administration and Other Support, and Educational Services as well as specific occupations such as Registered Nurses, Transit Operators and various Senior Managers, do face older age structures that may make them more susceptible to skill shortages. Although a widespread skill shortage due to an ageing labour force is unlikely, pockets of skill shortages may continue to emerge.


 Appendix 1

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

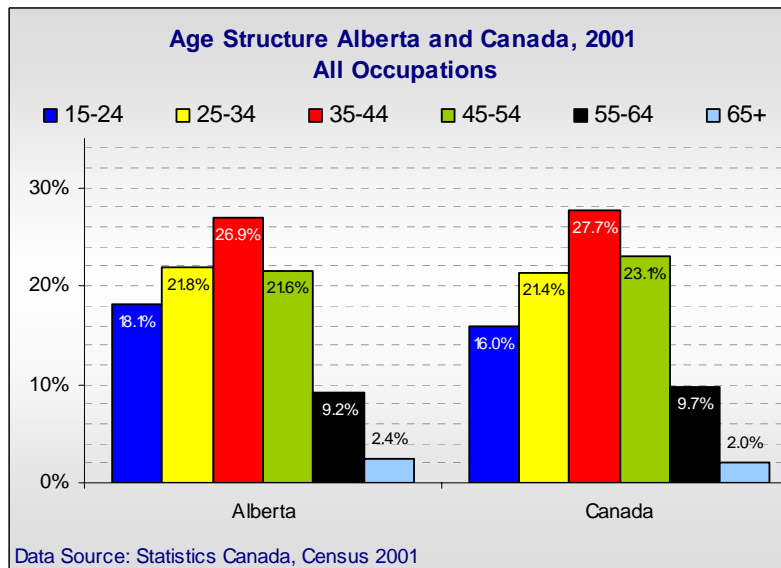
	Alberta				Canada
	Employment 2001	Workers aged 15- 34 per Worker aged 55+ (2001)	% Aged 55+ (1991)	% Aged 55+ (2001)	% Aged 55+ (2001)
All occupations	1,681,980	3.46	10.1%	11.6%	11.8%
I011 Farmers and farm managers	48,245	0.25	41.0%	44.6%	41.1%
B314 Property administrators	4,570	0.61	24.9%	29.4%	31.3%
G132 Real estate agents and salespersons	4,810	0.60	17.2%	27.0%	31.6%
E024 Ministers of religion	3,475	0.72	27.4%	25.9%	32.2%
A222 Accommodation service managers	3,350	1.03	16.1%	24.5%	25.9%
I021 General farm workers	21,005	2.12	19.6%	23.1%	18.8%
H712 Bus drivers and subway and other transit operators	8,630	0.72	17.6%	22.5%	25.6%
G631 Security guards and related occupations	6,785	2.28	26.3%	22.4%	22.7%
A301 Insurance, real estate and financial brokerage managers	5,235	0.65	15.6%	21.6%	21.5%
G933 Janitors, caretakers and building superintendents	22,335	1.38	20.3%	21.2%	20.6%
A013 Senior managers - Financial, comm. carriers and other	5,815	0.68	17.3%	20.3%	20.9%
A016 Senior managers - Goods , utilities, trans. and constr.	6,515	0.41	22.3%	20.1%	23.2%
G973 Other elemental sales occupations	5,885	2.18	11.0%	18.6%	14.1%
A361 Other services managers	3,120	1.52	11.5%	18.6%	16.3%
H713 Taxi and limousine drivers and chauffeurs	3,765	1.14	8.2%	18.5%	22.3%
D012 General practitioners and family physicians	4,265	1.26	13.7%	18.2%	21.4%
B111 Bookkeepers	15,920	1.54	13.4%	17.1%	19.7%
E121 College and other vocational instructors	7,355	1.12	9.2%	16.9%	17.1%
G131 Insurance agents and brokers	4,755	1.67	12.7%	16.5%	16.9%
A371 Construction managers	9,730	1.17	15.1%	16.4%	18.1%
A015 Senior managers - Trade, broadcasting and other	4,420	1.06	14.1%	16.1%	21.6%
A323 School principals and admin. of elementary/secondary	3,475	0.38	10.5%	15.8%	15.7%
B211 Secretaries (except legal and medical)	27,415	1.62	7.8%	15.7%	15.8%
G931 Light duty cleaners	18,665	2.44	14.3%	15.7%	15.8%
H711 Truck drivers	34,585	1.94	11.6%	15.5%	15.2%
D233 Registered nursing assistants	4,955	1.34	8.4%	15.5%	11.5%
F033 Musicians and singers	3,280	2.31	8.4%	15.4%	16.1%
D112 Registered nurses	21,900	1.53	8.9%	15.2%	12.5%
H611 Heavy equipment operators (except crane)	14,335	2.24	10.6%	14.5%	16.2%
B022 Professional occs. in business services to management	4,520	1.82	11.9%	14.0%	16.0%
B014 Other financial officers	5,190	2.13	11.3%	13.9%	11.6%
A391 Manufacturing managers	6,020	1.52	13.6%	13.6%	14.7%
B561 Mail, postal and related clerks	3,305	1.92	11.0%	13.6%	13.3%
H017 Contractors and supervisors, heavy construction equip.	4,445	1.74	17.3%	13.5%	16.2%
C031 Civil engineers	5,265	2.40	8.7%	13.3%	14.5%

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

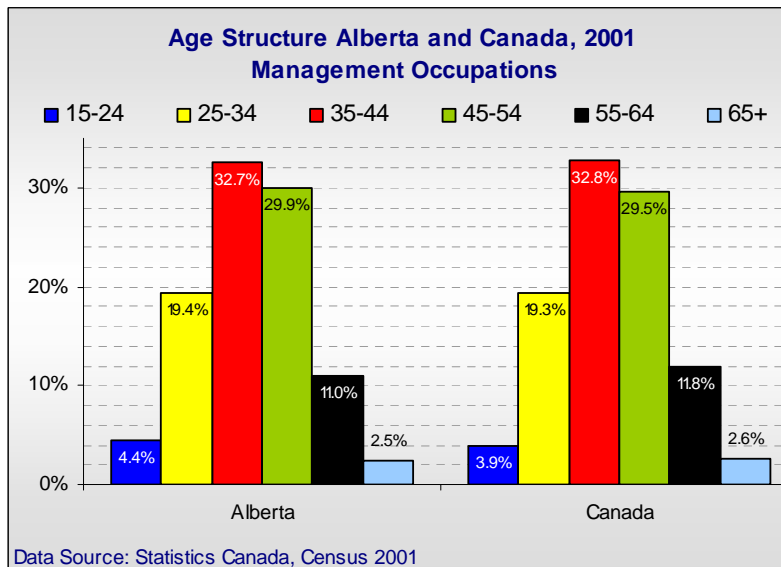
Appendix 2

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

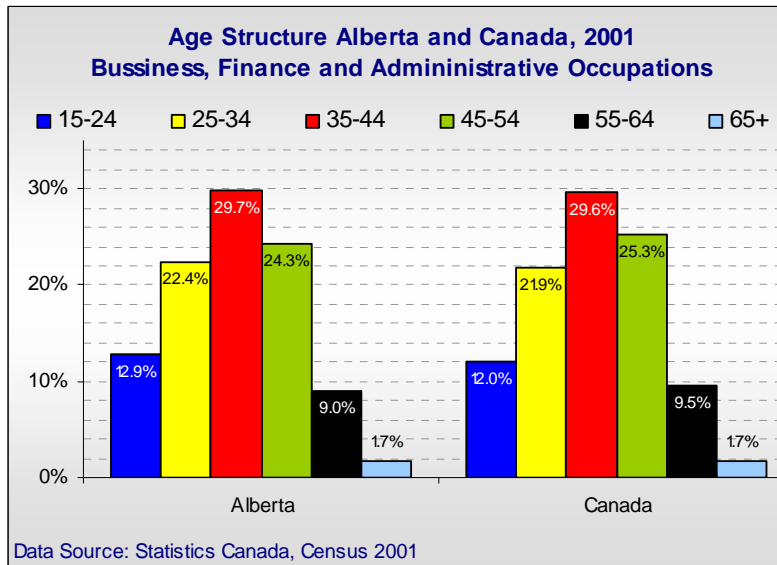
All Occupations



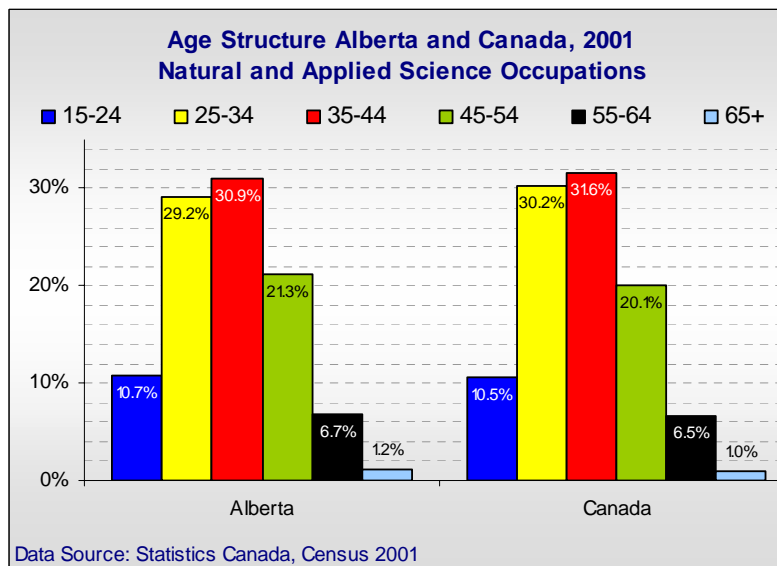
Management Occupations



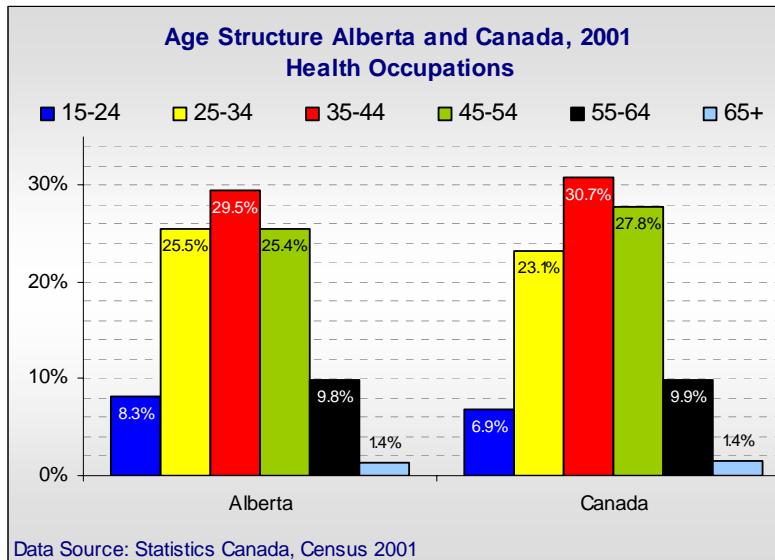
Business, Finance and Administration Occupations



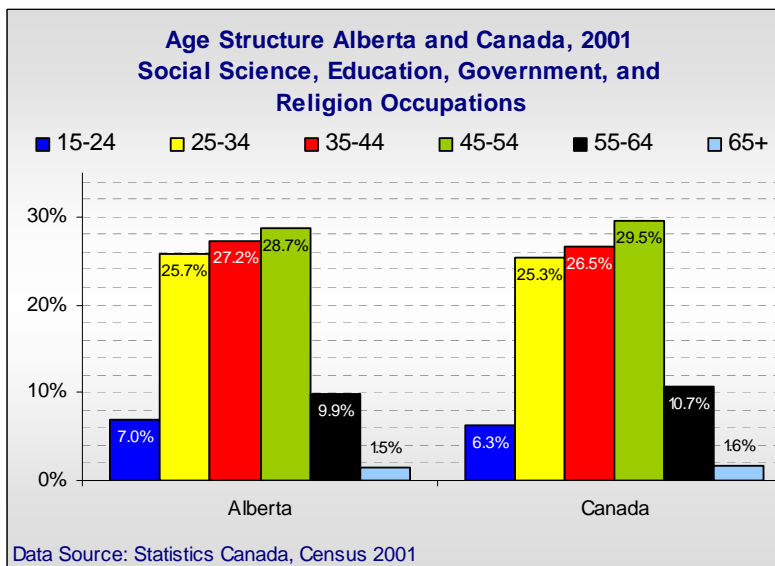
Natural and Applied Science Occupations



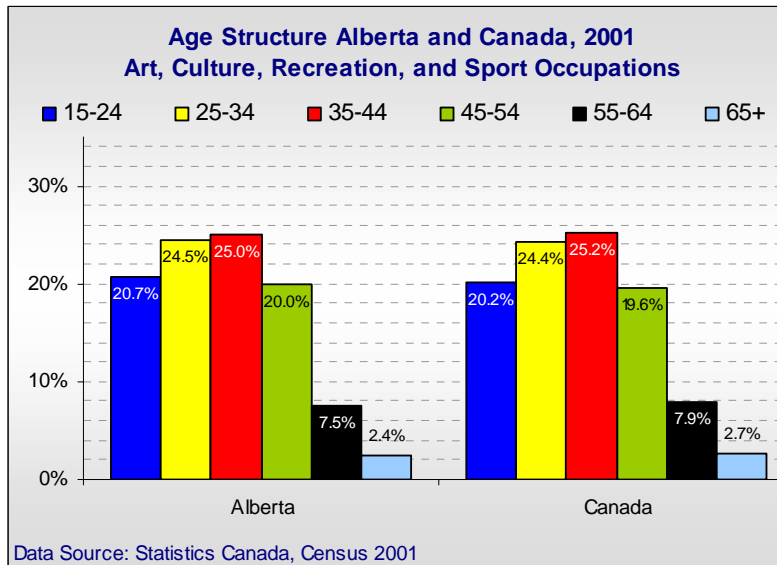
Health Occupations



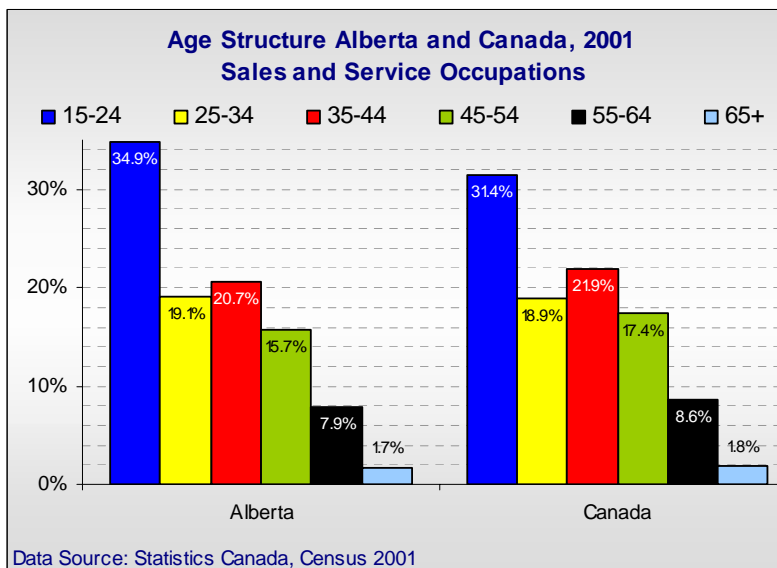
Social Science, Education, Government and Religion Occupations



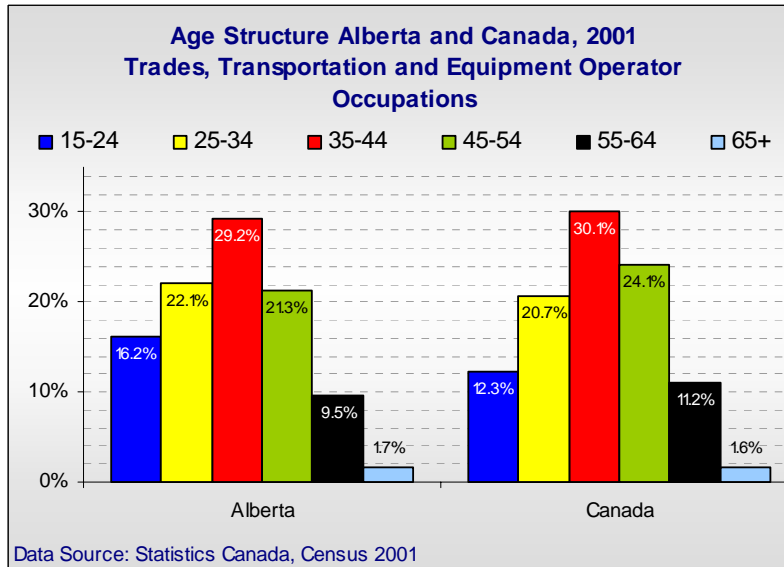
Art, Culture, Recreation and Sport Occupations



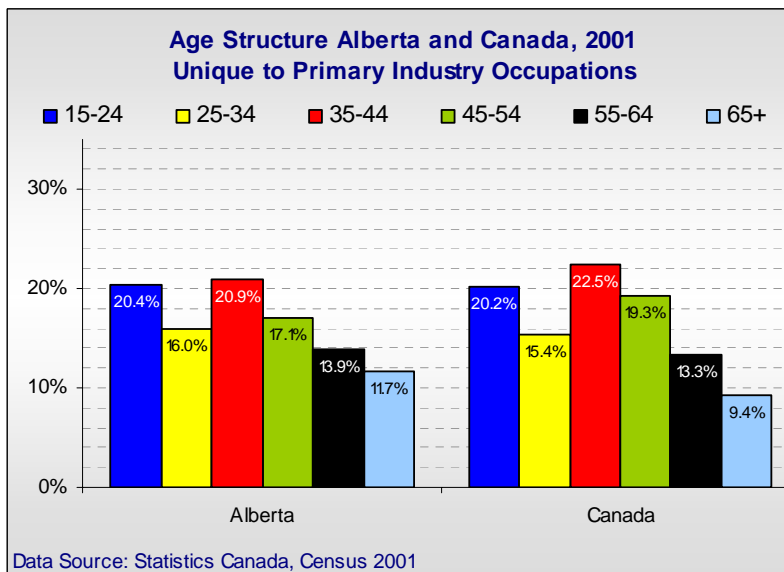
Sales and Service Occupations



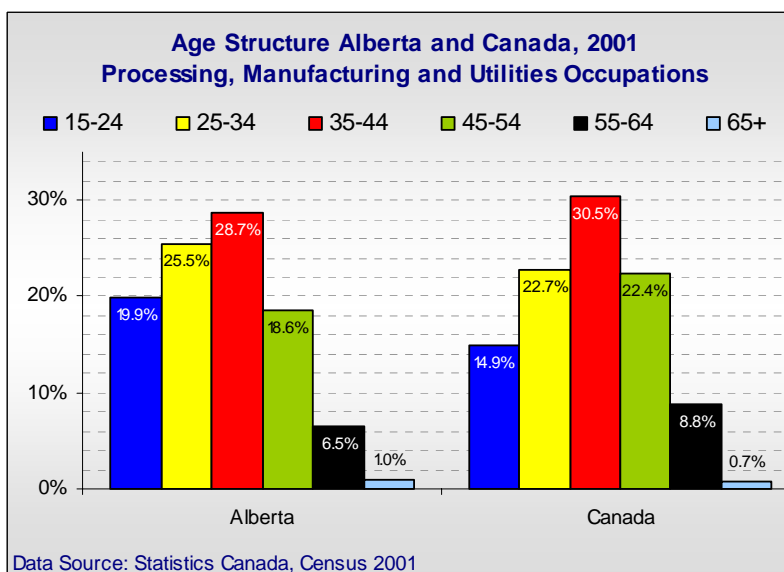
Trades, Transportation and Equipment Operator Occupations



Unique to Primary Industry Occupations



Unique to Processing, Manufacturing and Utilities Occupations



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