

Women in non-traditional occupations

Karen D. Hughes

For many years, women have been urged to enter non-traditional areas of employment to improve their economic prospects. During the 1970s and 1980s, Canadian women did precisely that, parlaying higher levels of education and labour force participation into a growing presence in a diverse range of male-dominated occupations (Hughes, 1990). Veterinary practice, financial management and law were just some of the occupations women entered.

By the beginning of the 1990s, the labour market – buffeted by recession and the pressures of economic globalization – was in the midst of a profound transition involving restructuring and downsizing. Although women continued to enter male-dominated occupations, they did so more slowly than before. Using 1991 Census data (see *Data source and definitions*), this article explores women's occupational crossovers from 1986 to 1991 and compares them with changes that took place between 1971 and 1986.¹

Rising labour force participation

The 1986 to 1991 period saw continued growth in women's participation in the experienced labour force. In contrast to men's stable participation rate (77.0% to 77.3%), the rate for women rose from 55.4% to 60.7%. In fact, women's participation rates in the experienced labour force increased for every age group examined (Table 1).

By 1991, 6.4 million women were in the experienced labour

Karen D. Hughes is a faculty member in the Women's Studies Program at the University of Alberta. She can be reached at (403) 492-0320.

Data source and definitions

The data are from the 1971, 1986 and 1991 Censuses of Canada and refer to the population aged 15 and over. The reference period for occupation, full-year full-time employment, and employment income is the 1990 calendar year (data from the 1991 Census only were used for these characteristics).

The **experienced labour force** consists of people who were in the labour force the week preceding the census (that is, they were employed or unemployed) and, if unemployed (that is, on temporary layoff or looking for work), had worked at some time since January 1 of the year preceding the census.

Occupations are classified according to the *Occupational Classification Manual*, developed for the 1971 Census of Canada. If a person was employed the week before the census, that occupation was assigned; otherwise, the job of longest duration since January 1 of the preceding year was used in the analysis.

People who report at least 30 hours of work per week and who work 49 to 52 weeks a year are **full-year full-time** workers. Included are hours worked for wages, salaries, tips and commissions; hours worked in one's own business, farm or professional practice; and hours worked without pay in a family business or farm.

Employment income refers to total income received during 1990 as wages and salaries (including tips and commissions), net income from unincorporated non-farm businesses and/or professional practices, and net farm self-employment income.

The **median employment income** of a specific group of employment income recipients (for example, female economists) is the middle value in the ordered distribution (from low to high) of that group's individual incomes. In other words, half the workers have an income greater than the median value, while the remaining half have an income below the median.

Table 1
Experienced labour force *

	Women			Men		
	1971	1986	1991	1971	1986	1991
	Millions					
Experienced labour force	3.0	5.5	6.4	5.7	7.3	7.9
	%					
Participation rate – all ages	39.9	55.4	60.7	76.4	77.0	77.3
15-19	37.0	49.6	54.3	46.6	52.3	56.5
20-24	62.8	81.1	81.9	86.5	89.8	89.4
25-34	44.5	73.6	78.8	92.6	94.3	94.4
35-44	43.9	72.1	79.9	92.8	94.6	94.7
45-54	44.4	62.4	72.0	90.3	91.2	91.6
55-64	34.4	35.9	39.2	80.1	70.6	66.5
65 and over	8.3	4.2	5.6	23.6	13.7	14.4

Source: Census of Canada

* See Data source and definitions

force, up almost 18% from 5.5 million in 1986. The number of men had increased just 8%, from 7.3 million to 7.9 million. Because the average annual growth rate for women (3.5%) was more than double that of men (1.6%), women's share of the experienced labour force rose from 43% in 1986 to 45% in 1991. However, for both women and men the annual rate of growth in the experienced labour force was slower from 1986 to 1991 than from 1971 to 1986.

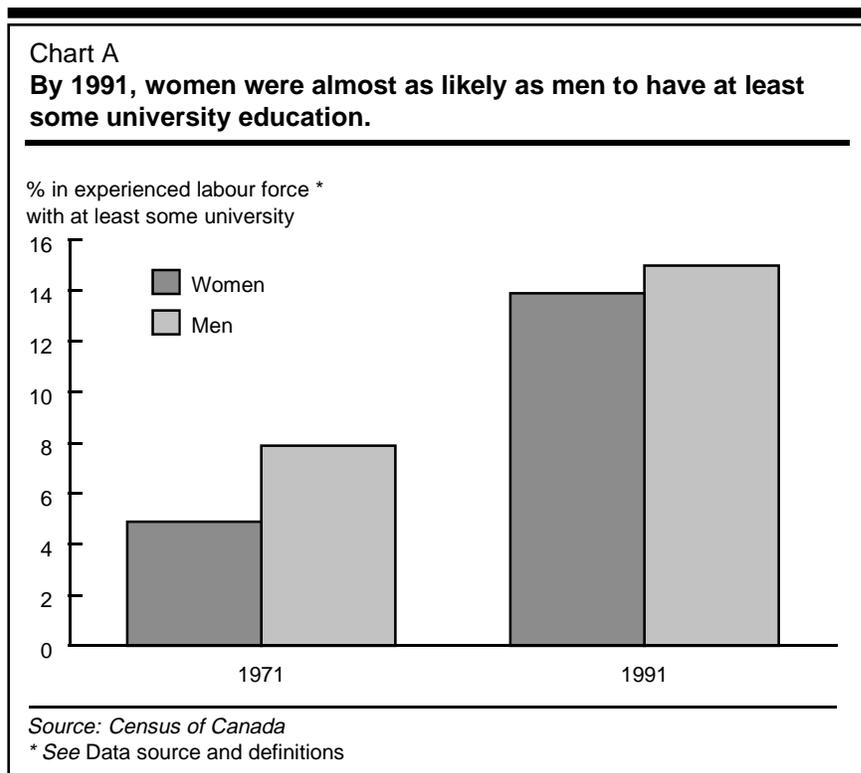
Higher educational attainment

The educational attainment of women in the labour force continued to rise between 1986 and 1991. By 1991, over 40% of female workers had some postsecondary education, and nearly 14% had at least some university (Chart A). As well, women were obtaining a growing share of university degrees in non-traditional areas such as commerce, law, biological sciences, agriculture, dentistry, medicine and veterinary medicine. In community colleges, women accounted for increasing proportions of diplomas granted in business, natural resources, engineering and transportation (Bellamy and Guppy, 1991; Stout, 1992).

Nonetheless, women's rising labour force participation and accreditation in male-dominated fields did not necessarily translate into employment in non-traditional occupations.

Defining non-traditional occupations

To define non-traditional occupations and measure change within them, the proportion of women in an occupation is compared with their share of the experienced labour force. In this article, an occupation is considered non-traditional if women's representation in it during a particular year was below the proportion of women in the experienced labour force that same year (that is 34.3% in 1971, 42.8%



in 1986, and 44.9% in 1991). For example, if women accounted for 10% of the experienced labour force in a particular occupation in 1991, it would be labelled non-traditional in 1991; conversely, an occupation with 46% female repre-

sentation would be considered traditional. Changes between 1986 and 1991 within occupations defined as non-traditional in 1971 are examined in this study.

Traditional and non-traditional occupations can be identified using

Why use this measure?

For analyzing change in women's occupations, the coefficient of representation has two advantages. First, it was used to identify non-traditional occupations for women in 1971. Since women then made up 34.3% of the experienced labour force, it was impossible for them to be equally represented (50%) across all occupations. A cut-off of 34.3% rather than 50% was a better reflection of their situation within occupations.²

Second, and more important, from 1986 to 1991 the proportion of women in the experienced labour force rose from 42.8% to 44.9%. Given such dynamics, a simple comparison of change in the sex composition of individual occupations

confuses two distinct processes: change associated with women's rising participation in the labour force, and change associated with a pure shift into or out of an occupation. A comparison of coefficients isolates the real shift by taking into account the effect of the change in the sex composition of the experienced labour force (Noyelle, 1987).

Change in the representation of women in non-traditional occupations between 1986 and 1991 is expressed as the difference between the coefficients derived for the two years (1991 minus 1986). This is a straightforward measure of the movement toward greater (or lesser) representation of women.³

Table 2
Distribution of occupations and experienced female labour force*

	Coefficient of representation					
	Highly non-traditional		Intermediate		Traditional	1.00+
	0.00-0.24	0.25-0.49	0.50-0.74	0.75-0.99		
	Number of occupations **					
1971	484	224	68	31	30	131
1986	484	162	88	49	53	132
1991	484	150	93	51	58	132
	% of experienced female labour force					
1971	100	3	6	2	4	86
1986	100	2	5	5	10	79
1991	100	2	5	5	10	78

Source: Census of Canada
 * See Data source and definitions
 ** See note 5

non-traditional,” while occupations with coefficients from 0.50 to 0.99 are labelled “intermediate.”⁴

Slower movement into non-traditional occupations

On an annual basis, the coefficients of representation for each of the 484 detailed occupations examined⁵ show far less change between 1986 and 1991 than between 1971 and 1986 (Table 2). From 1971 to 1986, the number of highly non-traditional occupations for women dropped from 292 to 250 (an average decline of 2.8 per year). By 1991, the number had fallen by only 7 more (1.4 per year), to 243. While women’s presence in many

a “coefficient of representation.” (See *Why use this measure?*) If the proportion of women in an occupation in a specified year matches the proportion of women in the experienced labour force that same year, the coefficient will be exactly 1.00. A coefficient less than 1.00 shows that women are under-represented and that the occupation is non-traditional; a coefficient above 1.00 indicates the reverse. In the examples cited above, the occupation that is 10% female would have a coefficient of 0.22 (10 divided by 44.9), denoting a non-traditional status, while the occupation that is 46% female would show a coefficient of 1.02 (46 divided by 44.9), a value in the traditional sphere.

The range of the coefficient of representation for non-traditional occupations is wide: from 0.00 to 0.99. However, because occupations with coefficients approaching 0.99 have a sex composition closely reflecting that of the experienced labour force, they should not be considered “non-traditional” in the usual sense. Since this article examines uncommon career choices for women, occupations with a coefficient less than 0.50 have been defined as “highly

Table 3
Highly non-traditional occupations* with greatest shifts in female representation**

	Coefficient of representation		
	1986	1991	Difference
Optometrists	0.76	0.99	0.23
Services management occupations	0.63	0.85	0.22
Financial management occupations	0.75	0.96	0.22
Osteopaths and chiropractors	0.38	0.57	0.19
Farm management occupations	0.43	0.61	0.18
Farmers	0.22	0.40	0.18
Purchasing management occupations	0.41	0.59	0.18
Inspectors and regulatory officers, non-government	0.44	0.61	0.17
Members of legislative bodies	0.60	0.77	0.16
Government administrators	0.66	0.81	0.15
Architects	0.25	0.39	0.14
Insurance salesmen and agents ***	0.86	1.01	0.14
Lawyers and notaries	0.51	0.65	0.14
Supervisors in other occupations in architecture and engineering †	0.22	0.36	0.14
Dispensing opticians	1.12	1.25	0.13
Newsboys ††	0.39	0.52	0.13
Commercial travellers	0.37	0.50	0.12
Economists	0.65	0.77	0.12
Management occupations in natural sciences and engineering	0.20	0.32	0.12
Purchasing officers and buyers (except wholesale and retail trade)	0.70	0.82	0.12
Inspectors and regulatory officers, government	0.48	0.60	0.12
Supervisors in sales occupations, services †††	0.68	0.80	0.12

Source: Census of Canada

* Coefficient of representation less than 0.50 in 1971; excludes occupations with fewer than 1,000 females in the experienced labour force in 1991 and all occupations “not elsewhere classified”

** Occupations are ranked by size of difference

*** Renamed “Insurance sales occupations” in the more recent 1980 Standard Occupational Classification (SOC)

† Occupations concerned with surveying, draughting and engineering technology

†† Renamed “Newspaper carriers and vendors” in the 1980 SOC

††† Includes insurance, securities, real estate, advertising and other services

other highly non-traditional fields increased, it was not enough to push these occupations into the intermediate or traditional categories. In fact, the number of traditional occupations remained static over the two decades studied.

The proportion of women in traditionally female occupations fell from 86% in 1971 to 79% in 1986. This percentage had improved only marginally by 1991 with over three-quarters of female workers (78%) still concentrated in over one-quarter (132 out of 484) of all occupations.

Occupations with greatest influx of women

Despite the slow pace of change, between 1986 and 1991 women's presence increased in a number of non-traditional occupations. To identify those highly non-traditional occupations that experienced the greatest influx of women, differences between the 1986 and 1991 coefficients of representation were ranked – the larger the difference, the greater the change.⁶ Ten of twenty-two occupations singled out were in management and administration, seven were in professional categories, and four were in sales (Table 3).⁷ The greatest increases in female representation over the five-year period were found among optometrists, occupations related to services management and financial management, and osteopaths and chiropractors.

Seven occupations graduated from the highly non-traditional to the intermediate category: osteopaths and chiropractors, farm management, purchasing management, non-government inspectors and regulatory officers, "newsboys,"⁸ commercial travellers, and government inspectors and regulatory officers. Only one occupation (insurance "salesmen" and agents⁹) moved into the traditional category (dispensing opticians having already become traditional during

the 1971 to 1986 period). Four occupations – management in the natural sciences and engineering, supervision in architecture and engineering, architects, and farmers – remained highly non-traditional, with coefficients below 0.50.

Are these women different?

Women entering non-traditional fields are often assumed to be younger and better educated than the average female worker. However, the diversity of the 22 highly non-traditional occupations with the greatest influx of women suggests that the characteristics of such women are varied. In fact, women in the highly non-traditional occupations tended to be slightly older, and while they were more likely than the average female worker to have a university degree, the difference in the proportions with a postsecondary diploma was minor.

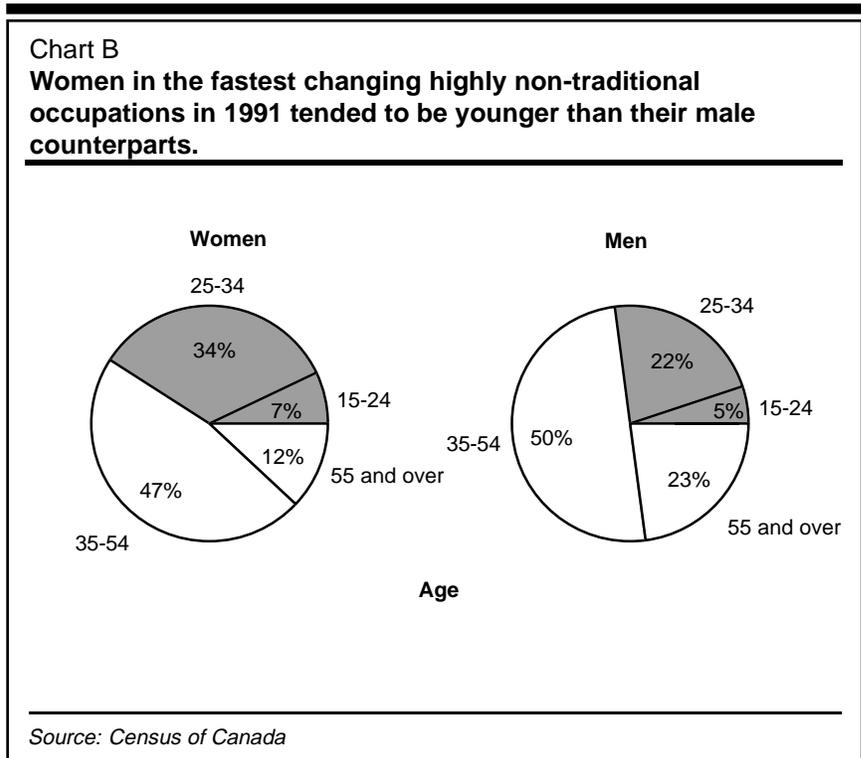
On the other hand, women in the fastest changing highly non-traditional occupations tended to be

much younger than their male counterparts (Chart B). Forty-one percent of these women were under 35 compared with only 27% of the men. Some educational differences were also evident. Although a smaller share of women than men had a university degree (22% versus 26%), women were more likely to have a postsecondary diploma (39% versus 31%).

They work more hours ...

With only two exceptions (newsboys, and osteopaths and chiropractors), full-year full-time employment was more common among women in the fastest changing highly non-traditional occupations than among female workers generally. Over two-thirds of women in these occupations worked full year full time, compared with less than half of all female workers.

However, women were less likely than their male counterparts to work full year full time. Differ-



ences were most pronounced for osteopaths and chiropractors (with 43% of women working a full schedule compared with 68% of men), farm management occupations (54% and 71%, respectively), dispensing opticians (57% and 73%), and commercial travellers (61% and 77%). Nevertheless, differences were minor in some occupations. For example, 74% of women and 75% of men employed as insurance salesmen and agents worked full year full time, as did 19% of women and 20% of men employed as newsboys.

... and have greater employment income

There is a widespread belief that women in non-traditional occupations have better economic prospects than most working women. Indeed, 18 of the 22 fastest-changing highly non-traditional occupations (Table 4) generated full-year full-time median employment incomes above those of female workers overall (ranging from \$25,500 for osteopaths and chiropractors to \$41,700 for lawyers and notaries). The median figure for all highly non-traditional occupations was \$29,600, compared with \$24,500 for all women working a full schedule.

However, many women have only recently entered non-traditional occupations, and thus have less work experience and seniority than many of the men in these occupations; as a result, one would expect women to have somewhat lower median incomes, although there could be other reasons for such differences as well (Coish and Hale, 1995).¹⁰ In fact, the data show that the median incomes of women working full year full time were consistently below those of their male counterparts. The median income ratio (women's income as a proportion of men's) was lowest (44%) for optometrists, and osteopaths and chiropractors,¹¹ and highest (88%) for government

inspectors and regulatory officers. However, the overall income ratio for women in the 22 highly non-traditional fields studied was 80%, well above that for female workers in all occupations combined (70%).

Summary

The presence of women in non-traditional occupations continued to increase in the late 1980s, although the pace of change slowed considerably from that of the previous 15

years. The occupations with the greatest influx of women between 1986 and 1991 were in management and administration, professional categories and sales. Women in the fastest changing highly non-traditional occupations tended to be older, better educated, and better remunerated than other female workers. Yet, when compared with their male counterparts, they tended to be younger, less likely to have a university degree, and less well paid. Nonetheless, the gap

**Table 4
Median employment income of full-year full-time female workers in highly non-traditional occupations, * 1990 ****

	Median employment income	
	\$	As % of male median
All occupations	24,500	70
Highly non-traditional occupations with greatest shifts in female representation	29,600	80
Lawyers and notaries	41,700	63
Management occupations in natural sciences and engineering	40,000	65
Government administrators	38,200	75
Economists	37,300	75
Inspectors and regulatory officers, government	35,800	88
Members of legislative bodies	34,500	75
Financial management occupations	33,900	65
Architects	32,700	73
Supervisors in other occupations in architecture and engineering ***	32,400	73
Optometrists	30,700	44
Purchasing officers and buyers (except wholesale and retail trade)	30,600	79
Commercial travellers	30,300	79
Supervisors in sales occupations, services †	30,200	68
Purchasing management occupations	29,700	74
Inspectors and regulatory officers, non-government	28,900	73
Services management occupations	26,300	65
Insurance salesmen and agents ††	25,600	70
Osteopaths and chiropractors	25,500	44
Dispensing opticians	21,700	68
Newsboys †††	15,100	63
Farm management occupations	13,000	66
Farmers	8,800	69

Source: Census of Canada

* Coefficient of representation less than 0.50 in 1971; excludes occupations with fewer than 1,000 females in the experienced labour force in 1991 and all occupations "not elsewhere classified"

** Includes only those full-year full-time workers who were in the experienced labour force at the time of the 1991 Census; occupations are ranked by size of median income

*** Occupations concerned with surveying, draughting and engineering technology

† Includes insurance, securities, real estate, advertising and other services

†† Renamed "Insurance sales occupations" in the 1980 SOC

††† Renamed "Newspaper carriers and vendors" in the 1980 SOC

between women's and men's median incomes in all highly non-traditional fields combined was narrower than that between female and male workers overall, suggesting that such occupations remain an important avenue for women wishing to improve their economic prospects. □

■ Notes

1 Occupations are based on the 1971 *Occupational Classification Manual* (OCM).

2 An alternative approach is to label an occupation "non-traditional" if one sex accounts for less than 50% of the workers in that occupation (Boulet and Lavallée, 1984). This cut-off is fixed regardless of the percentage distribution of the sexes within the labour force as a whole.

3 Despite its advantages over other statistical measures, the difference does not perfectly capture the change occurring in such dynamic situations (Blackburn and Marsh, 1991).

4 For a listing of all occupations found in the highly non-traditional, intermediate and traditional categories, as well as their respective coefficients of representation, contact Jeannine Usalcas at (613) 951-6889, or fax (613) 951-4179.

5 There are 486 detailed occupations in the 1971 OCM. In this analysis, 4 of these occupations have been collapsed into 2, yielding a total of 484 occupations.

6 The ranking excludes occupations with fewer than 1,000 women in the experienced labour force in 1991, as well as miscellaneous occupations "not elsewhere classified."

7 Although the study was originally intended to focus on the top 20 fastest changing occupations, the same amount of change was observed among several occupations at the cut-off point.

8 This occupation was renamed "newspaper carriers and vendors" in the more recent 1980 *Standard Occupational Classification* (SOC), Catalogue 12-565E.

9 This occupation was renamed "insurance sales occupations" in the more recent 1980 SOC.

10 It is not possible with census data to control for factors that are crucial determinants of employment income, such as specific educational credentials and work experience.

11 Between 1986 and 1991, the number of female optometrists in the experienced labour force increased 82% (from 810 to 1,475), while the number of female osteopaths and chiropractors more than doubled (from 470 to 1,035). The substantial influx of new entrants into these occupations would have exerted a considerable downward pressure on median employment incomes.

Although this may be a plausible explanation for the large wage gap, it does not hold in all cases. For instance, the increase in the number of female architects was greater than that of female optometrists (from 810 to 1,900) but the median employment income ratio was 73%.

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