

Trading places: Men and women in non-traditional occupations, 1971-86

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Since the rise of the women's movement in the 1960s, the traditional economic activity of men and women has been significantly reshaped. Canadian women now participate in the labour market in greater numbers, for longer periods of time, with better educational credentials, and in a wider range of jobs than ever before. In a less dramatic fashion, men's economic activity has also been affected by this wave of social change.

For observers concerned with economic equality between the sexes, the entrance of women and men into "non-traditional" occupations is one trend of particular interest. Such a crossover is significant because it seems to promise to erode traditional employment patterns, in which men have dominated well-paid employment and women have clustered into poor-paying jobs. It is these patterns of "occupational sex segregation" that underlie much of the economic disparity experienced by women in terms of pay, promotion prospects and job security ([Krahn and Lowe](#), 1987: 129-130; [Boulet and Lavallée](#), 1984: 14).

Precisely how the sex composition of traditional occupations has been refashioned is a question that sparks much debate. ⁽¹⁾ This study explores the extent to which occupational crossover occurred between 1971 and 1986 and how this has influenced disparities between the sexes. Using Census of Population data from 1971 and 1986, ⁽²⁾ it traces the changing contours of women's and men's work activity, paying specific attention to non-traditional occupations that experienced the greatest increase in minority sex representation, whether women entering "men's fields" or vice versa. In particular, the following questions are addressed:

- How has the representation of women and men in non-traditional occupations changed? Have patterns of change differed for women and men?
- Which non-traditional occupations experienced the greatest influx of the minority sex?
- What are the characteristics (age, education, marital status) of workers in non-traditional occupations compared to those of the average female or male worker?
- Does the work status and income of the minority sex differ from that of the dominant sex in non-

traditional occupations?

Defining non-traditional occupations

To answer these questions, we must define non-traditional occupations. Past research has taken two different approaches ([Boulet and Lavallée](#), 1984: 71-73). The first approach has defined an occupation as "non-traditional" if one sex comprises less than 50% of workers in an occupation. This cut-off is fixed regardless of the percentage distribution of the sexes within the labour force as a whole.

This study uses the second method, which considers the distribution of the sexes within each occupation in relation to their distribution in the total labour force. Using this definition, an occupation is non-traditional for the sex whose representation in that particular occupation falls below its representation in the labour force. Thus, for example, if 30% of workers in all occupations are female, an occupation composed of 10% women would be deemed non-traditional for women while another occupation comprising 40% would be traditional. This definition can be numerically expressed as a "coefficient of representation". ⁽⁵⁾ A coefficient below 1.00 indicates that a sex is under-represented and that the occupation is non-traditional for it; a coefficient above 1.00 indicates the reverse. In the example given above, the occupation with 40% women would have a ratio of 1.33, denoting its traditional status; conversely, the occupation with 10.0% women and a coefficient of 0.33 would be deemed non-traditional for women but traditional for men.

Labour market trends, 1971-86

As a prelude to examining the entrance of males and females into non-traditional jobs, it is useful to consider the performance of the Canadian labour market over the period. Overall, 1971 through to 1986 witnessed significant change both in aggregate employment levels and in the characteristics of the labour force. The experienced labour force grew 48.2%, from 8.6 million in 1971 to 12.8 million in 1986. The bulk of this expansion occurred in the first ten years, with growth slowing considerably in the 1981-86 period.



Chart A Labour Force participation rates, 1971 and 1986

Sources: 1971 and 1986 Censuses of Canada

Contributing in large part to the rate of this growth between 1971-86 was the marked increase in women's entrance into the labour market. Female participation rates rose from 39.9% in 1971 to 55.4% in 1986, while those for men remained constant (76.4% and 77.0% respectively). The jump in women's

participation was especially notable for specific age groups; in particular, rates for women aged 25-44 increased by about two-thirds. Rates for men, on the other hand, remained almost static with the exception of a 12% rise among youths aged 15-19 and a dramatic fall among older workers aged 55 and over.

Taken together, these related trends of overall employment growth and increased female labour force participation markedly transformed the experienced labour force. The number of male workers increased 29.1%, while the number of female workers surged 84.6%. At the same time, the proportion of women in the experienced labour force grew from 34.3% to 42.8%.

Educational trends, 1971-86

During the period 1971-86, traditional educational choices were also undergoing a transformation. Both men and women became better educated overall, but women in particular made great strides. Between 1970-71 and 1984-85, the number of degrees awarded to women leapt by 80% compared to a modest 6% increase for men ([Guppy et al.](#), 1987: 175-77). The effect was of course felt in the labour market, where 11.7% of women had some kind of university education in 1986, more than double the proportion in 1971.

Not only did women achieve higher levels of educational attainment over the 1971-86 period ([Table 1](#)), they also widened their horizons by pursuing a more diversified range of subjects. Education data for degrees granted to women in the academic years 1970-71 and 1984-85 show particularly strong growth in such non-traditional fields as engineering, veterinary medicine, commerce, dentistry, law and agriculture.



Chart B Proportion of men and women in the experienced labour force

Sources: 1971 and 1986 Censuses of Canada



Table 1 Education levels of experienced labour force, 1971 and 1986

Sources: 1971 and 1986 Censuses of Canada

Occupational changes, 1971-1986

In the light of the extensive changes that took place in both the Canadian labour market and educational institutions in the 1971-86 period, what were the consequences for the distribution of women and men within the occupational structure? By classifying each of the 484 detailed occupations of the 1971 Census as non-traditional and traditional, as identified by the coefficients of representation, a crude sketch of changes that occurred during this period can be constructed. ⁽⁶⁾ In 1971, 85.7% of women were employed in 131 of the 484 occupations; in other words, over four-fifths of women worked in roughly one-quarter of the types of jobs available to Canadian workers. Furthermore, two-thirds of these 131 traditional occupations fell into the five basic job categories of clerical, machining, services, processing and health. The 353 occupations dominated by men were much more diversified, running the full range of the occupational structure and employing 80.1% of the male work force.

Despite the transformation in women's education and labour market activity, the data for 1971 and 1986 show that there was remarkable stability in the number of traditional and non-traditional occupations for women and men. Where change did occur was, for the most part, within non-traditional occupations for females. The number of occupations that had a very low proportion of women (coefficients of .00-.24) dropped from 224 in 1971 to 162 in 1986, with female representation rising high enough to push these 62 occupations into the other three categories.



Chart C **Bachelor and first professional degrees attained by women as a proportion of total**

Sources: Women and Education: A Canadian Perspective



Table 2 **Number of occupations* and proportion of experienced labour force by sex and coefficients of representation, 1971 and 1986**

Sources: 1971 and 1986 Censuses of Canada

* Occupations that are non-traditional according to the definitions established for this study are included in the column labelled "Intermediate" to provide a complete picture of occupational changes in the period.

In direct contrast to women, men recorded little advancement into those occupations in which they were most under-represented. In fact, where increases occurred, they were offset by decreased representation within other occupations; in 1986, 16 additional occupations had coefficients in the .50-.74 range, but 14

fewer had coefficients between .75-.99. Overall, these findings are consistent with observations made elsewhere that declines in occupational sex segregation are primarily the result of women's, not men's, entrance into non-traditional occupations ([Fox and Fox, 1987](#)).

Entrance into non-traditional occupations

Beyond simply tracing aggregate trends in the occupational structure, it is illuminating to explore the occupational crossover that did occur and to consider its implications for the economic prospects of women and men. The analysis now focuses on the non-traditional occupations for women and men that experienced the greatest shift in minority sex representation between 1971 and 1986. Such analysis allows us to pinpoint the detailed occupations that experienced notable growth and to profile the types of workers in occupations that were non-traditional for their sex.

All non-traditional occupations are ranked by subtracting the 1971 coefficient of representation from the 1986 coefficient. The difference between the coefficients is a measure of the amount of change in distribution by sex in that occupation during that period: the larger the difference, the greater the change.

This technique yields 21 non-traditional occupations for women and ten for men in which changes were noteworthy. We see that of the 21 occupations for women, six fell into the managerial area and five into sales and service ([Table 3](#)). The remainder were fairly dispersed among the 484 categories and ranged from professional occupations such as lawyers, veterinarians, optometrists and dispensing opticians, to technical and skilled jobs such as typesetters and compositors, telegraph operators, and bus drivers. Overall, the changes in these 21 occupations were striking as all had ceased to be non-traditional by 1986, having coefficients of more than 0.50; in fact, bartending and dispensing optician became traditional during this period (over 1.00).



Table 3 Non-traditional occupations with greatest shift in female representation between 1971 and 1986; work status and median income in 1985

Sources: 1971 and 1986 Censuses of Canada

For men, growth was recorded in several occupations most stereotypically associated with women: clerical, teaching, and certain types of manufacturing. Only six of the ten types of jobs analyzed ceased to be non-traditional ([Table 4](#)).



Table 4 **Non-traditional occupations with greatest shift in male representation between 1971 and 1986; work status and median income in 1985**

Sources: 1971 and 1986 Censuses of Canada

Characteristics of workers in selected non-traditional occupations

What were the characteristics of female and male workers in these selected non-traditional occupations? Comparing these people with the average worker in the experienced labour force provides valuable insight into the characteristics of non-traditional workers. However, as the workers in the selected non-traditional occupations may not be entirely representative of non-traditional workers as a whole, we compare them to this group as well.

We can see that the proportion of women within the 25-34 age group was much higher in the 21 non-traditional occupations for women than in the experienced labour force as a whole ([Table 5](#)). These women were also much more likely to possess a university degree than the average female worker. There were only slight differences in the marital status of women in non-traditional and traditional occupations. Overall, the differences between women in the 21 selected non-traditional and all non-traditional occupations were not great, although women in the 21 tended to be younger and better educated.



Table 5 **Education and demographic characteristics of non-traditional workers and experienced labour force, 1986**

Source: 1986 Census of Canada

Among men in the ten selected non-traditional occupations, there was a tendency to be older than the average male worker; half fell within the 35-54 age group. These men were also over three times more likely to possess a degree, principally because half of them were teachers and 88.0% of these teachers were university graduates.

Income and work status of workers in non-traditional occupations

Because it has long been maintained that occupational sex segregation underlies much of the economic disparity between the sexes, it is reasonable to ask, what were the economic benefits for women and men in non-traditional occupations? Some answers with respect to full-time work status and income (7) can be provided, although they can only be considered tentative because we do not control for factors that are crucial determinants of employment income (for example, age, specific educational credentials, length of work experience).

Women in the non-traditional occupations were much more likely to work full-time, full-year than the average female worker; exceptions to this were bartenders, weighers and bus drivers. However, women were still less likely to work full-time than their male counterparts, regardless of occupation. The difference is particularly apparent in the case of bus drivers, where 13% of the women, compared to more than half of the men, worked full-time, full-year.

Many of these non-traditional occupations provided women with a much higher median income than the \$18,845 earned by the average female worker (Table 3). Again, there were exceptions to this. What is noticeable, however, is that in all non-traditional occupations women earned less than men. In many occupations, such as optometrists, securities salesmen/traders, and lawyers, the earnings differentials were substantial.

The proportion of men working full-time, full-year in all non-traditional occupations is lower than that for the average male worker. But no really clear pattern of work status emerges for men in the selected non-traditional occupations (Table 4). Nevertheless, their median employment income was lower than the \$28,209 earned by the average male worker, with the exception of elementary and kindergarten teachers (\$37,713). Yet despite these jobs having traditionally been women's, men's earnings were higher in all the occupations for which full-time, full-year median incomes were calculated.

Conclusion

Over the period 1971 to 1986, occupational crossover occurred largely because women entered occupations non-traditional for their sex. Men, on the other hand, moved into non-traditional occupations at a slower rate. Both women and men in non-traditional occupations were slightly older and better educated than the average female or male worker. There were no significant differences in marital status.

In the non-traditional occupations identified as having the greatest influx of the minority sex, women tended to move into managerial, professional, and sales/service occupations. This was largely consistent with their changing educational patterns between 1971 and 1986. Men gravitated towards teaching, service, clerical and manufacturing occupations.

Comparing the full-time, full-year work status and income of workers in non-traditional occupations, it is evident that women earned higher incomes than the average female worker but less than men in the same occupation. Conversely, men generally earned more than women in the same field, but less than the

average male worker. This, more than anything, may explain the slow movement of men into non-traditional jobs.

Why use this measure?

For purposes of this study, the coefficient approach has two distinct advantages. First, we define non-traditional occupations in 1971, when women comprised only 34.3% of the experienced labour force. ⁽³⁾ Given this level of representation, it is impossible for women to be equally represented (that is, 50%) across all occupations. A cut-off of 34.3%, rather than 50.0%, more accurately reflects their situation. Second, and more important, we are interested in tracing growth in non-traditional occupations over a period when the proportion of women in the experienced labour force rose from 34.3% to 42.8%. Given such dynamics, a simple comparison of change in the sex composition of individual occupations confuses two distinct processes: (1) change associated with a change in each sex's rate of participation in the experienced labour force; and (2) change associated with a pure shift of each sex either into or out of an occupation. A comparison of coefficients isolates the actual shift of the under-represented sex into non-traditional occupations by taking into account the effect of the change in the sex composition of the experienced labour force ([Noyelle, 1987: 375](#)).

Despite the usefulness of this coefficient, it should be noted that its range for non-traditional occupations is wide - 0.00-0.99. This means that, as the coefficient moves towards 0.99, it includes occupations whose sex composition closely reflects that of the total occupational structure and which are not non-traditional in the usual sense of the word. Given that we are interested in a range of occupations that were uncommon career choices for women or men in 1971, we focus specifically on occupations with a coefficient value of less than 0.50. An occupation is therefore defined as non-traditional for the sex whose representation in that occupation is less than half its total representation in the experienced labour force.

Change in the representation of the sexes in non-traditional occupations between 1971 and 1986 is expressed as the difference between the coefficients derived for the two years (that is, 1986 minus 1971). This provides a straightforward measure of the movement toward greater (or lesser) representation of the minority sex in non-traditional occupations. ⁽⁴⁾

Notes

Note 1

See [Siltanen](#) (1990) for a recent critique of research on occupational sex segregation

Note 2

Data used in this study are based on the 1971 Occupational Classification Manual and the 1971 labour force definition.

Note 3

The experienced labour force comprises persons who were working at the time of the Census or, if not working, had last worked during the Census year or the previous year and were on temporary lay-off or looking for work.

Note 4

Despite its advantages over other statistical measures, the "difference" does not perfectly capture the change occurring in such dynamic situations. (See [Blackburn and Marsh](#), forthcoming.)

Note 5

The coefficient of representation is the percentage of females (or males) in occupation i divided by the percentage of females (or males) in all occupations; that is, pfi/PF (or pmi/PM).

Note 6

There are 486 detailed occupations in the 1971 census classification (OCM, 1971). In this analysis, four separate occupational groups have been collapsed into two, thus yielding a total of 484 occupations.

Note 7

All income and work status figures are for full-time, full-year workers (49-52 weeks).

References

- Blackburn, R.M. and C. Marsh. "Education and Social Class: Revisiting the 1944 Education Act with Fixed Marginals," *British Journal of Sociology*. London, G.B., forthcoming.
- Boulet, J.-A. and L. Lavallée. *The Changing Economic Status of Women*. Ottawa: Economic Council of Canada, 1984.
- Fox, B.J. and J. Fox. "Occupational Gender Segregation of the Canadian Labour Force, 1931-1981," *Canadian Review of Sociology and Anthropology*, Vol. 24, No. 3. Toronto, 1987, pp. 374-397.
- Guppy, N., D. Balson and S. Vellutini. "Women and Higher Education in Canadian Society,"

Women and Education: A Canadian Perspective. Calgary, Detseliq Enterprises, 1987, pp. 171-192.

- Krahn, H.J. and G.S. Lowe. *Work, Industry and Canadian Society*. Edmonton, University of Alberta, 1987.
- Labour Canada. *Women in the Labour Force, 1986-87*. Ottawa, 1987.
- Noyelle, T.J. "The New Technology and the New Economy: Some Implications for Equal Employment Opportunity," *Computer Chips and Paper Chips*, Vol. 2. Washington, D.C., 1987, pp. 373-394.
- Organisation for Economic Co-operation and Development. *The Integration of Women into the Economy*. Paris, 1985.
- Siltanen, J.L. "Social Change and the Measurement of Occupational Segregation by Sex: An Assessment of the Sex Ratio Index," *Work, Employment and Society*, Vol. 4, No. 1. London, G.B., March 1990.
- Statistics Canada. *Education in Canada: A Statistical Review for 1987-88*, Cat. 81-229. Ottawa, 1989.
- Statistics Canada. *Labour Force Activity*, Cat. 93-111. Ottawa, 1986.
- Statistics Canada. *Occupational Trends, 1961-1986*, Cat. 93-151. Ottawa, November 1988.

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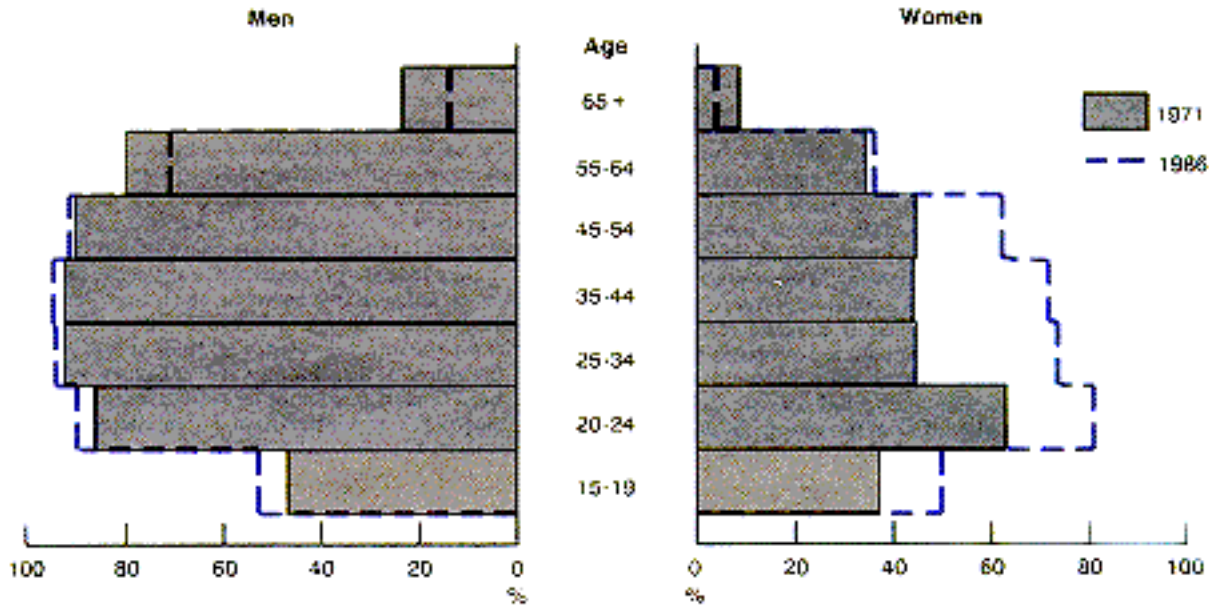
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Perspectives on Labour and Income, Summer 1990, Vol. 2, No. 2 (Statistics Canada, Catalogue 75-001E). This is the sixth of six articles in the issue.



Labour force participation rates, 1971 and 1986

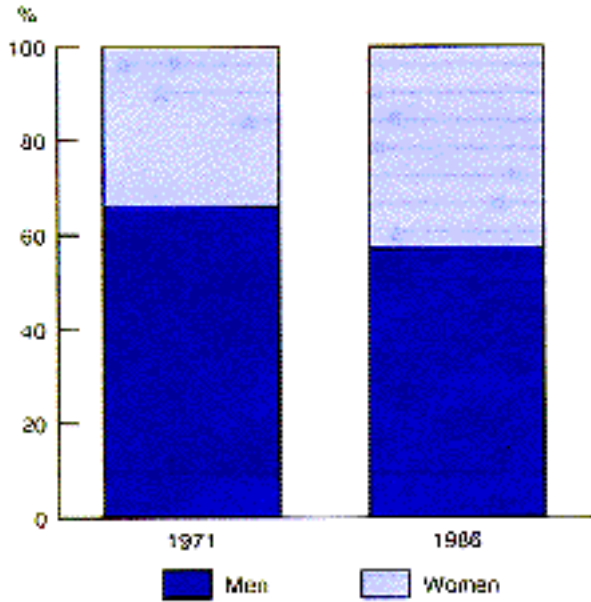
The participation rate for all women rose from 40% to 55% while the rate for men remained nearly constant.



Sources: 1971 and 1986 Censuses of Canada

Proportion of men and women in the experienced labour force

The experienced labour force grew from 8.6 to 12.8 million, with the number of women surging 85%.



Sources: 1971 and 1986 Censuses of Canada

Table 1

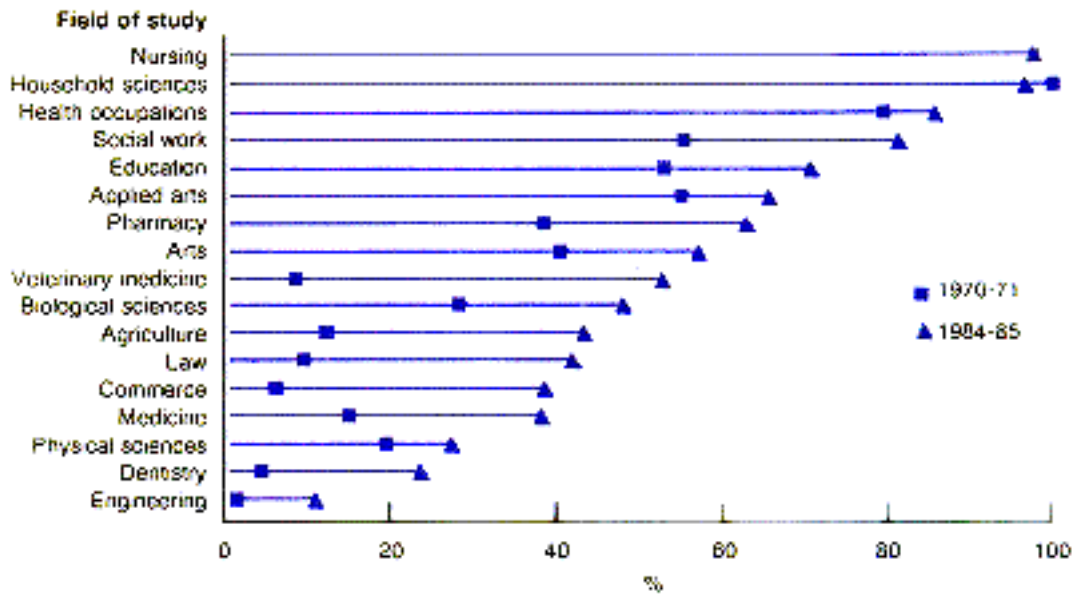
Education levels of experienced labour force, 1971 and 1986

Level of schooling	Females		Males	
	1971	1986	1971	1986
Less than Grade 9	20.1	7.7	29.6	12.2
Grade 9 - 13	49.9	41.5	43.4	39.8
Some postsecondary	25.0	39.1	19.2	34.5
Some university	4.9	11.7	7.9	13.4

Sources: 1971 and 1986 Censuses of Canada

Bachelor and first professional degrees attained by women as a proportion of total

In almost every discipline, women's share of all degrees granted increased sharply, e.g., from 38% to 62% in pharmacy.



Source: Women and Education: A Canadian Perspective

Table 2

Number of occupations* and proportion of experienced labour force by sex and coefficients of representation, 1971 and 1986

	Coefficients of representation				
	Non-traditional		Intermediate		Traditional
	.0-.24	.25-.49	.50-.74	.75-.99	1.00 +
1971					
Females:					
Number of occupations	224	68	31	30	131
% of female labour force	2.8	5.6	2	3.9	85.7
Males:					
Number of occupations	16	35	25	55	353
% of male labour force	0.9	4	6	8.9	80.1
1986					
Females:					
Number of occupations	162	88	49	53	132
% of female labour force	2.4	4.7	4.6	9.7	78.7
Males:					
Number of occupations	16	34	41	41	352
% of male labour force	1.2	4.8	3.1	12.5	78.4

Sources: 1971 and 1986 Censuses of Canada

** Occupations that are non-traditional according to the definitions established for this study are included in the column labelled "Intermediate" to provide a complete picture of occupational changes in the period.*

Table 3

**Non-traditional occupations with greatest shift in female representation between 1971 and 1986;
work status and median income in 1985**

Occupation	Experienced labour force		Coefficients of representation			Work status		Median employment income*	
	1971	1986	1971 CoF (1)	1986 CoF (2)	Difference 1971-1986 (2)-(1)	% female, full- time, full- year	% male, full- time, full- year	Female income (\$)	Female as % of male income
All occupations	2,961,210	5,466,515				41.8	58.3	18,845	66.8
Total non-traditional	221,630	374,165				53.6	61.2	21,146	71.2
Bartenders	1,900	24,050	.42	1.33	.90	29.3	37.5	9,856	70.1
Veterinarians	75	1,435	.13	.81	.68	49.4	78.2	25,333	66.4
Dispensing opticians	230	1,935	.48	1.12	.63	50.0	75.3	17,823	73.4
Advertising salesmen	565	4,325	.37	.99	.62	56.1	67.1	22,500	75.0
Optometrists	90	810	.18	.76	.57	54.7	60.6	33,250	61.2
Typesetters and compositors	1,625	6,170	.37	.93	.56	51.5	75.4	18,293	70.4
Telegraph operators	185	455	.33	.87	.55	65.0	74.9	23,285	80.0
Personnel and industrial relations management	445	11,190	.32	.84	.52	73.3	84.0	28,047	69.2
Financial management occupations	630	19,285	.24	.75	.51	79.8	90.8	26,188	64.2
Insurance salesmen and agents	4,155	21,610	.36	.86	.50	71.5	74.1	19,539	64.7

Business services salesmen	275	1,830	.33	.81	.48	63.7	75.2	24,615	80.5
Accountants, auditors, other financial officers	15,655	74,595	.44	.92	.47	67.6	81.3	24,304	68.7
Purchase officers and buyers except wholesale/retail trade	1,010	5,255	.25	.70	.45	75.0	81.7	22,250	71.2
Supervisors: sales occupations, services	2,005	8,370	.24	.69	.45	72.6	81.2	22,901	65.3
Production clerks	2,145	5,780	.49	.94	.45	62.0	73.0	20,183	73.8
Sales and advertising management occupations	465	21,185	.11	.54	.44	68.5	86.4	21,627	55.9
Weighers	660	1,695	.47	.88	.41	17.3	41.3	17,500	67.5
Bus drivers	3,045	16,125	.28	.69	.41	13.2	53.9	14,750	50.3
Salesmen and traders, securities	665	3,440	.25	.63	.38	66.7	72.6	20,677	50.7
Lawyers and notaries	785	9,135	.14	.51	.37	64.8	82.0	30,822	62.6
Services management occupations	185	4,025	.27	.64	.37	62.1	78.5	22,595	69.6

Sources: 1971 and 1986 Censuses of Canada

** Full-time, full-year employment only (49-52 weeks worked).*

Table 4

**Non-traditional occupations with greatest shift in male representation between 1971 and 1986;
work status and median income in 1985**

Occupation	Experienced labour force		Coefficients of representation			Work status		Median employment income*	
	1971	1986	1971 CoF (1)	1986 CoF (2)	Difference 1971-1986 (2)-(1)	% male, full-time, full-year	% female, full-time, full-year	Male income (\$)	Female as % of male income
All occupations	5,665,720	7,316,990				58.3	41.8	28,209	66.8
Total non-traditional	259,995	423,190				53.3	42.0	24,093	77.0
Textile winding and reeling occupations	660	860	.41	.71	.30	55.1	48.0	20,388	75.3
Office machine operators	4,350	3,320	.32	.55	.24	64.7	51.3	20,558	85.3
Electronic equipment fabricating and assembling occupations	2,485	5,740	.42	.66	.23	60.9	59.5	22,187	79.7
Supervisors: occupations in lodging and other accommodations	4,785	13,635	.45	.64	.20	61.7	45.7	19,090	76.7
Bookbinders and related occupations	2,165	3,195	.48	.61	.13	54.9	42.7	24,694	64.2
Dancers and choreographers	70	340	.29	.40	.11	28.2	16.1	--	--
Chambermaids and housemen	595	2,560	.07	.15	.09	39.9	22.9	13,999	85.1

Elementary and kindergarten teachers	25,900	36,830	.27	.34	.07	81.7	58.0	37,713	80.7
Technicians in library, museum, and archival sciences	450	965	.48	.54	.06	62.4	50.8	23,250	97.4
Telephone operators	1,305	2,120	.06	.12	.06	49.3	44.9	25,151	76.6

Sources: 1971 and 1986 Censuses of Canada

** Full-time, full-year employment only (49 -52 weeks worked).*

Table 5

Education and demographic characteristics of non-traditional workers and experienced labour force, 1986

	Female			Male		
	Top 21 non- traditional	All non- traditional	Experienced labour force	Top 10 non- traditional	All non- traditional	Experienced labour force
	%					
Age						
15 - 24	11.9	17.5	23.6	11.3	28.6	19.8
25 - 34	42.3	36.1	29.9	26.6	28.4	28.5
35 - 54	39.6	38.3	37.6	51.4	33.2	38.9
55 +	6.1	8.1	9.0	10.7	9.7	12.8
Education						
Less than Grade 9	2.6	7.3	7.6	5.8	6.1	11.6
Grade 9 - 13	17.7	22.2	22.9	12.6	17.6	23.8
High school	17.2	15.2	16.3	6.9	12.4	12.2
Trade certificate	2.8	2.3	2.5	2.1	2.3	4.4
Some university/community college	40.8	36.1	39.1	22.7	40.5	34.5
University degree	18.8	16.8	11.7	49.8	21.1	13.4
Marital status						
Married	64.1	63.1	61.4	70.6	53.3	66.1
Single	22.8	25.1	27.7	23.2	41.5	28.1
Separated, divorced, widowed	13.1	11.7	10.9	6.2	5.2	5.8

Source: 1986 Census of Canada