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The Dynamics of Overqualification: Canada's Underemployed University Graduates

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The Dynamics of Overqualification: Canada's Underemployed University Graduates

Chris Li, Ginette Gervais and Aurélie Duval,
Income Statistics Division

Summary

You're a guy with a master's degree from a prestigious university, but all you can get is a job driving a taxi.

You're an immigrant woman who graduated from an overseas university, and you've had to settle for selling clothes in a department store.

You're not alone. Thousands of people in Canada are in the position of having a job for which they are overqualified and sometimes getting the low pay and frustrations that go along with it.

This study, which examines the phenomenon of overqualification, used data from Statistics Canada's Survey of Labour and Income Dynamics (SLID) to profile the individuals who are most susceptible.

It found that nearly one out of every five people in the workforce who had a university education had worked in a job that required at most high school education at some point during 2001.

On one hand, younger workers were more likely to be overqualified, as were immigrants and people who had studied commerce as well as arts and humanities in school. Across industries, overqualified people were most likely to work in the retail/wholesale sector.

On the other hand, the higher the university certification, the less likely workers were to experience a job requiring at most high school education. Others who were less susceptible included unionized workers, those working on a full-time basis and people who had studied sciences and health in school.

Overqualification is an important issue for employees, employers and policy makers. On a personal level, it has a psychological dimension. Underemployed university grads often experience the frustration of lower earnings and job dissatisfaction. It could be a personal choice for some to work in a lower skilled job because of better career opportunities, higher family responsibilities, or to improve the quality of life such as being less stressed. For the nation as a whole, however, it represents an underutilization of human capital.

For the purpose of this study, an overqualified worker was defined as someone who held a university degree and had worked between 1993 and 2001 in an occupation that required at most a high school education for at least one month. The definition of overqualification was inspired by the definition used in a recent published article "Immigrants: Settling for less".¹ The present study created a longitudinal concept by taking into account the length of time people experienced

1. See Diane Galarneau and René Morissette, "Immigrants: Settling for less?," *Perspectives on Labour and Income*, Vol.16, No. 3, Autumn 2004, Statistics Canada, Catalogue no. 75-001-XPE, see <http://www.statcan.ca/english/studies/75-001/archive/e-pdf/e-0431.pdf>.

overqualification, which could not be done using Census data. The ever overqualified workers were then further split into seldom, chronically and always overqualified.

This study uses data from two separate panels of 30,000 adults surveyed for SLID. The first panel spanned six years from 1993 to 1998; the second panel spanned six years from 1996 to 2001. Data from the first year of follow-up from the first panel was combined with data from first year of follow-up from the second panel. Data from the second year of follow-up from the first panel was combined with data from second year of follow-up from the second panel. The two panels were combined this way for each year of follow-up. Consequently, the study will refer throughout to a "six-year" period of follow-up.

Increase in overqualified workers

Using data from the National Occupational Classification (NOC), it is possible to estimate skill levels required to work in more than 500 occupations. Codes assigned to the NOC can be used to associate both the education level usually required in the labour market and some criteria covering experience, specific training and responsibility related to health and safety, as in the case of police officers and nurses.

The number of university-educated workers² who were overqualified for their job was nearly one-third higher in 2001 than in 1993.

An estimated 331,100 workers had experienced this situation at some point in 2001, up from 251,600 in 1993.

Proportionally, however, due to an increase in the stock of workers with university degrees between 1993 and 2001, their share of all university-educated people in the workforce remained virtually unchanged. These people accounted for about one-fifth (19%) of the all university-educated people in the workforce in 2001, up marginally from 18% in 1993.

The rest of this study exploits the longitudinal nature of the SLID to estimate the persistence of overqualification among workers with university degrees. It examines only the group who had strong attachment to the labour market, that is, they worked for more than 4.5 years³ of the six-year period and at least one month in an occupation that required at most a high school education.

For this group, the study shows that the percentage of workers overqualified is much higher than the 18% or 19% in 1993 and 2001 respectively. The percentage of people strongly attached to the labour market with a university degree and who worked at least one month between 1993 and 2001 in an occupation that required at most a high school education was 30%.

2. For all results shown in this analysis, managers were excluded, given the great diversity of their experience and education level.

3. Includes both part-time and full-time workers.

Definitions

The **overqualified worker** is someone strongly attached to the labour market and who held a university degree and had worked at least one month between 1993 and 2001 in an occupation that required at most a high school education. For those that held more than one occupation in a month, the characteristics of their main occupation was selected for the analysis.

The **Occupational classification and skill levels** origins from the Essential Skills Research Project (ESRP), by Human Resource and Skills Development Canada (HRSDC) which made it possible to estimate the skill level of each occupation by using the National Occupational Classification (NOC), which comprises more than 500 occupations. To the assigned codes of the NOC, the ESRP associated both the education level usually required in the labour market and some criteria covering experience, specific training and responsibility related to health and safety (as in the case of police officers and nurses). The skill levels were: some university; a college or diploma, certificate, or apprenticeship training; and no more than a high school diploma.

The **Work period** is the total number of months worked at a paid job during the panel. The total number of months worked can range from 0 months to 72 months (or 0 to 6 years), but only people who have worked for more than 54 months (or 4.5 years) were included in this analysis.

The **percentage of time** a worker is overqualified during their work term is the total number of months being overqualified divided by the total number of months worked at all jobs during the panel.

The **never overqualified** population represents workers who held a university degree and have never worked in an occupation that required at most a high school education.

The **ever overqualified** population represents workers who held a university degree and have worked at least one month in an occupation that required at most a high school education.

The **ever overqualified** population was further divided into three groups:

The **seldom overqualified** population represents workers who held a university degree and have worked in an occupation that required at most a high school education for less than 50% of their work period.

The **chronically overqualified** population represents workers who held a university degree and have worked in an occupation that required at most a high school education between 50% and 99% of their work period.

The **always overqualified** population represents workers who held a university degree and have worked in an occupation that required at most a high school education for 100% of their work period.

Small sized firms are firms with less than 20 employees. **Medium-sized firms** are firms with 20 to 499 employees. **Large firms** are firms with more than 500 employees.

Always overqualified: account for one-third of overqualification

A significant proportion of university-educated workers had worked in a job for which they were overqualified during their entire work period.

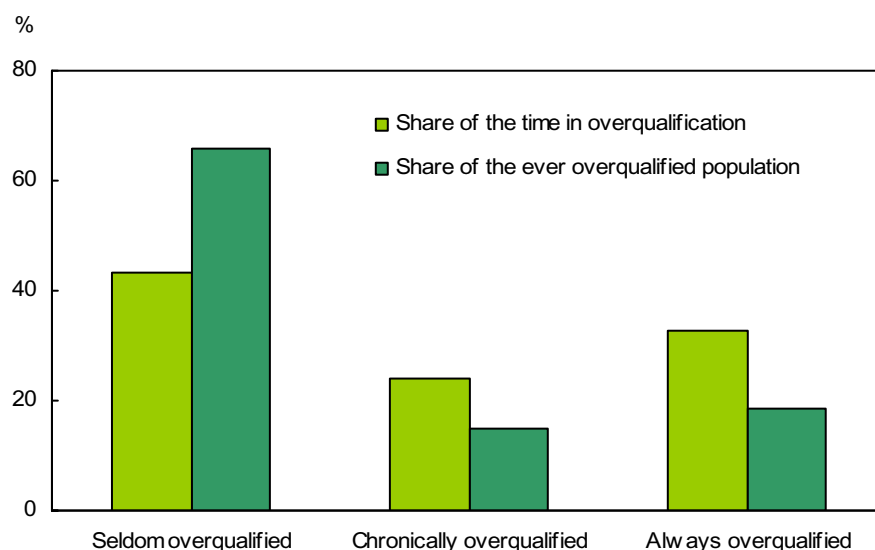
The study also found that a small group of people who were overqualified for most of their time in the labour force were also responsible for a disproportionate share of time spent in overqualification.

Those who were overqualified for 100% of their work period accounted for 20% of the ever overqualified workers. However, they accumulated more than 11 million months of overqualification.

During this six-year period, people with a university degree who worked at some point in a job that required at most a high school education had accumulated a total of 34 million months of overqualification.

In other words, those who were always overqualified accounted for just one-fifth of all overqualified workers but for one-third of the total period of overqualification accumulated by all individuals during the study period.

The seldom overqualified accounted for a disproportionately lower share of time spent in overqualification



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

In comparison, the study examined the group of respondents who held a university degree and who seldom worked in a lower-skilled occupation, that is, for less than 50% of their work period.

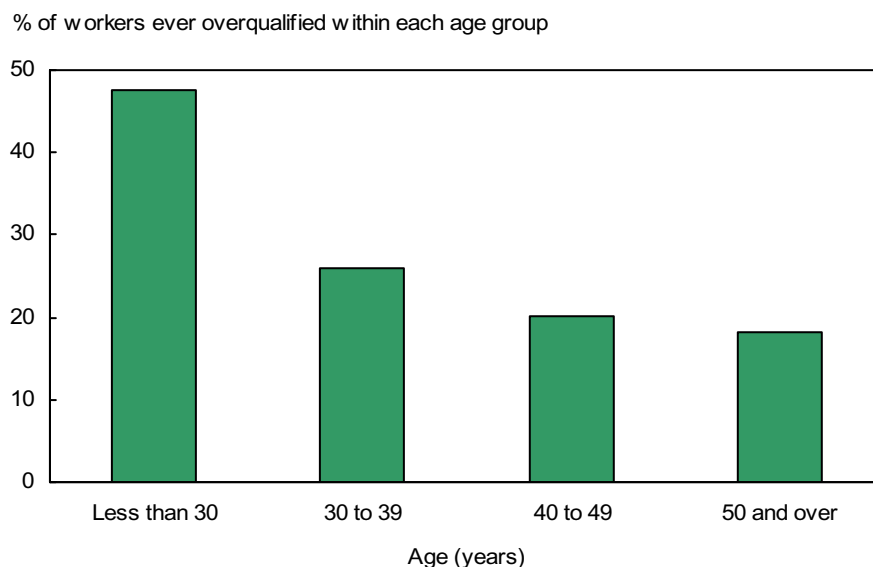
This group accounted for 66% of the overqualified workers. But they accumulated only 43% of the total time spent in overqualification, about 15 million months.

Older workers: higher chances of remaining overqualified the entire period

Younger workers were more likely to work in a position for which they were overqualified. However, older workers had higher chances of remaining overqualified during the entire work period, once they were in an overqualified situation.

Among young people under the age of 30 at the beginning of the six-year follow-up, almost one-half (48%) experienced overqualification at some time during the study period. This was three times higher than the proportion of 18% among older workers aged 50 and over.

Overqualification falls with age



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

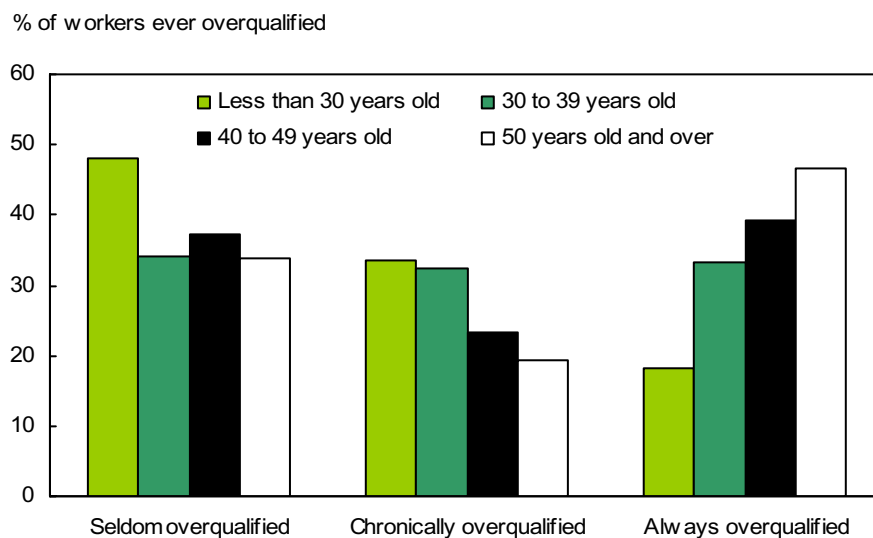
Another Statistics Canada study, "I still feel overqualified for my job," supported this finding.⁴ The article quoted data from the 2000 General Social Survey showing that 33% of young workers aged 20 to 29 felt overqualified, compared with 23% of their counterparts aged 30 to 64.

However, longitudinal data from SLID takes the analysis one step further. Once workers were in a situation in which they were overqualified, the older workers showed a tendency to stay there. In other words, the incidence of being overqualified 100% of the time increased with age.

Among older workers who had been overqualified at least some point during the six-year period, almost one-half (47%) were in the situation all of the time. However, among their younger counterparts, only 18% were overqualified all of the time.

4. See Susan Crompton, "I still feel overqualified for my job," *Canadian Social Trends*, No. 67, Winter 2002, Statistics Canada, Catalogue no. 11-008-XIE.

Older workers more likely to remain always overqualified than younger workers



Note: Bars of the same colour sum to 100.

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Labour market researchers have at least two theories to explain this situation for young workers. The first, known as the career mobility theory, predicts that workers may temporarily work in jobs that provide them with skills to be used later in a different, higher-level job.

Therefore, it might be optimal to spend a limited period of time in a job in which the worker appears to be overqualified. Overqualification may substitute surplus education for other forms of human capital young workers may lack, such as work experience or training.

The second theory, known as the matching theory, holds that young workers are still inexperienced in finding the right job. Because of imperfect information, it results in a bad match between the firm and the employee.

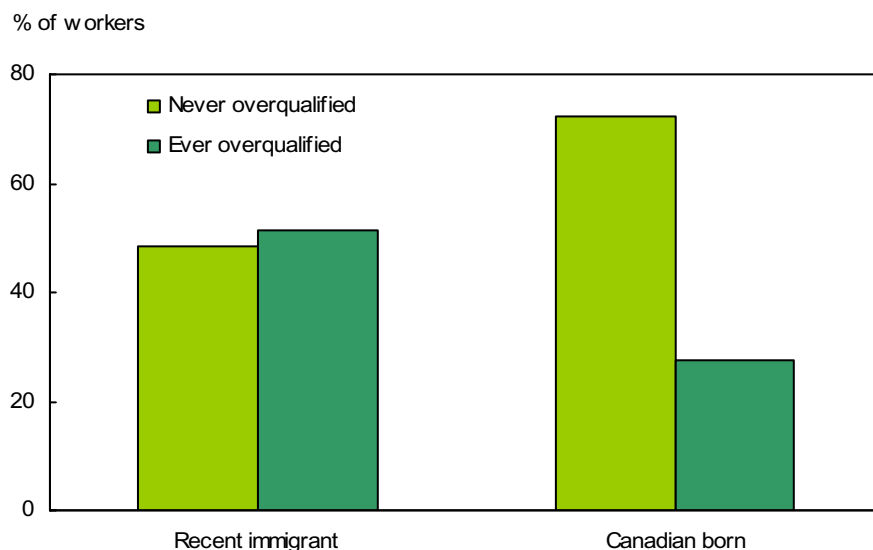
More than half of recent immigrants were overqualified

The study showed that recent immigrants—those in Canada for 10 years or less—had a higher incidence of overqualification than their Canadian-born counterparts. In addition, their period of overqualification lasted longer.

Much of this problem may have to do with recognition of their foreign educational credentials and their workplace experience.

More than one-half (52%) of recent immigrants with a university degree worked in a job requiring only high school education at some point during the six-year period. This was almost twice the proportion of 28% among their Canadian-born counterparts.

One in two recent immigrants experienced overqualification



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

When other factors such as individual and workplace characteristics were taken into account the study found that recent immigrants were not only twice as likely to experience overqualification. They were also twice as likely to stay overqualified 100% of the time.⁵

Among the overqualified workers, recent immigrants had a 72% chance of being overqualified all of the time, compared with 36% for Canadian-born, when the other factors were taken into account.

Another Statistics Canada study using the census data showed similar findings.⁶ Recent immigrants were twice as likely to be in jobs requiring low education as their Canadian-born counterparts. It pointed to factors such as institutional and language barriers; difficulties related to recognition of foreign credentials and experience; and a variety of incidental factors such as discrimination encountered by some immigrants.

In addition, data from the 2003 Longitudinal Survey of Immigrants to Canada showed that even after two years of living in Canada, the most serious problem or difficulty for prime working-age immigrants in finding employment was their lack of experience in the Canadian workforce.⁷ Many also reported that their most serious problem was difficulty in getting acceptance or recognition for their foreign professional credentials or educational qualifications, such as diplomas or degrees obtained in their homeland.

5. See technical details about logistic regression in the Sample and method section. These results are statistically significant at least at the 90% significance level. Regression results are available at the end of this document.

6. See Diane Galarneau and René Morissette, "Immigrants: Settling for less?," *Perspectives on Labour and Income*, Vol.16, No. 3, Autumn 2004, Statistics Canada, Catalogue no. 75-001-XPE, see <http://www.statcan.ca/english/studies/75-001/archive/e-pdf/e-0431.pdf>.

7. See Tina Chui and Kelly Tran, "Longitudinal Survey of Immigrants to Canada: Progress and Challenges of New Immigrants in the Workforce", October 2005, Statistics Canada, Catalogue no. 89-615-XWE, see <http://www.statcan.ca/english/freepub/89-615-XIE/89-615-XIE2005001.htm>.

High educational level: less overqualified and less always overqualified

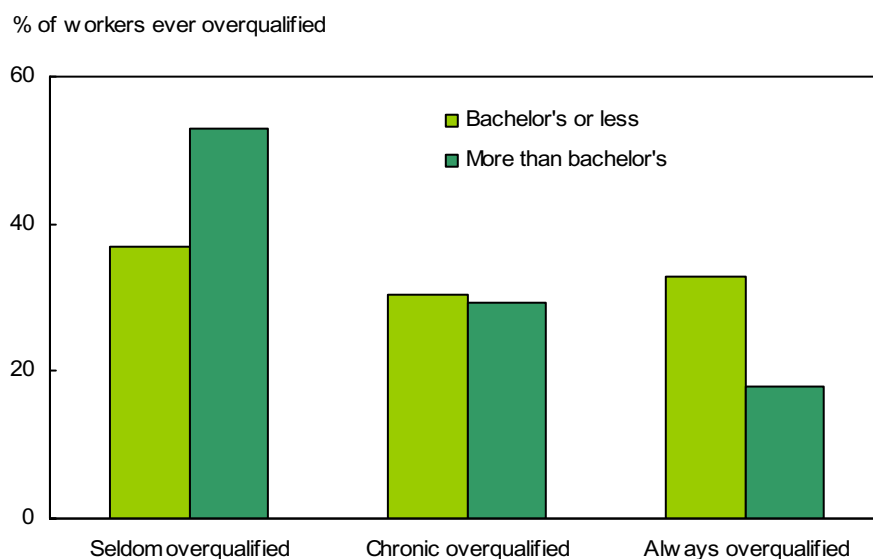
The higher the university certification, the less likely workers were to experience overqualification and to remain always overqualified.

Empirical analysis showed that workers with a bachelor's degree or less had a 30% chance to be overqualified, compared with a 19% chance for people with a master's degree or a doctorate, when other factors were taken into account.⁸

Among workers with a bachelor's degree or less, one-third experienced overqualification during their work period. Moreover, these people were almost evenly distributed across the entire spectrum, from those seldom overqualified to those always overqualified.

In comparison, one out of five workers with more than a bachelor's degree experienced overqualification.

Workers with more than a bachelor's degree over-represented by seldom overqualification



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Holders of a bachelor degree were twice as likely to remain overqualified 100% of the time as people with higher degrees, holding other personal and workplace characteristics constant.⁹

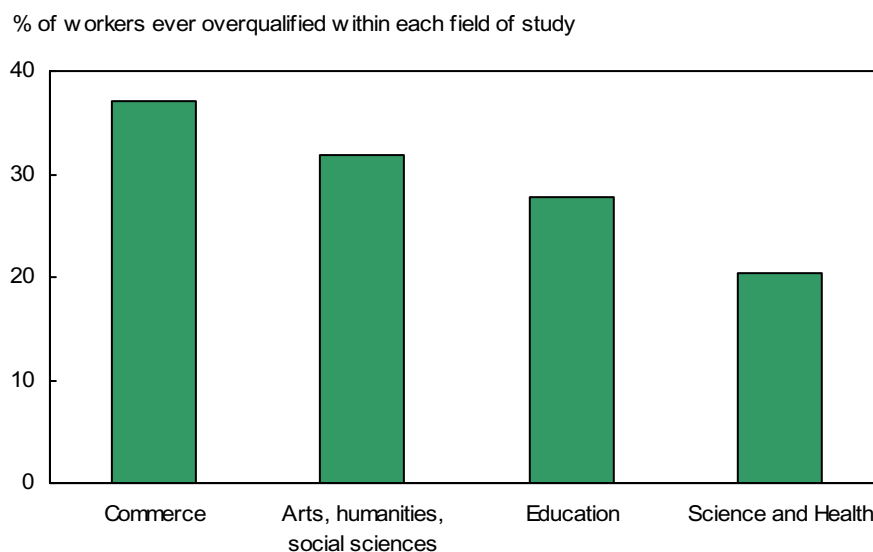
Overqualification also varied greatly depending on the type of studies that were completed. For example, the incidence was lower among workers who had studied science and health.

8. See technical details about logistic regression in the Sample and method section. These results are statistically significant at least at the 90% significance level. Regression results are available at the end of this document.

9. Ibid

Approximately 20% of workers who had studied science or health were overqualified at some point in their career, similar to findings from a previous study.¹⁰ This was significantly lower compared to the 37% of those who had studied commerce and who were overqualified at some point, as were 32% of those who had studied arts, humanities or social sciences.

Overqualification lower among those who completed science or health studies



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Analysis showed, however, that there were no significant differences among the different fields of study in terms on the probability of being 100% overqualified.

No gender and regional differences in overqualification

According to this study, there was no statistically significant difference between the proportion of men and women who were strongly attached to the labour market and who had ever experienced overqualification at some point during the study period. Another recent Statistics Canada study supports these findings and showed results leading to the same conclusions.¹¹

About 31% of men who had a university degree occupied a job that required at most a high school diploma, compared with 26% of women.

10. See Marc Frenette, "The overqualified Canadian graduate: the role of the academic program in the incidence, persistence, and economic returns to overqualification," *Economics of Education Review*, Vol. 23, 2004.

11. Ibid.

Furthermore, the study found no significant apparent differences of overqualification rates regionally in Canada even after controlling for other personal and workplace characteristics.

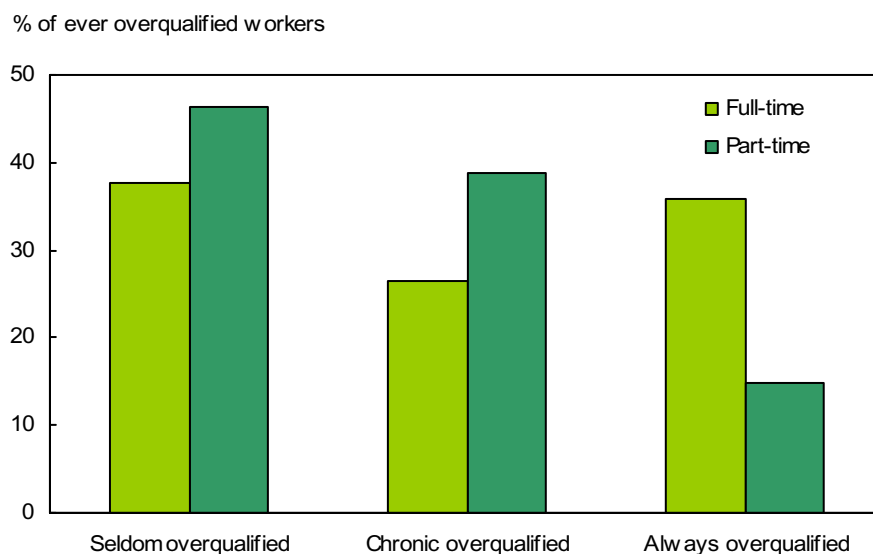
In the west—British Columbia, Alberta, Saskatchewan and Manitoba—30% of workers experienced overqualification at some point. In central Canada – Ontario and Quebec – about 28% were in this situation, and in the Atlantic provinces—Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick—the proportion was 25%.

Full-time workers: less likely to experience overqualification, but more likely to stay overqualified

Overqualification was more frequent among part-time workers. About 42% of part-time workers (those working less than 30 hours per week) experienced overqualification compared to only one-quarter of full-time workers. However, proportionally, full-time workers were more than twice as likely to stay overqualified 100% of the time compared to their part-time counterparts.

This may be because full-time overqualified workers may have been more attached to their job and less willing to leave because of higher opportunity costs.

Full-time workers at least twice as likely to remain always overqualified



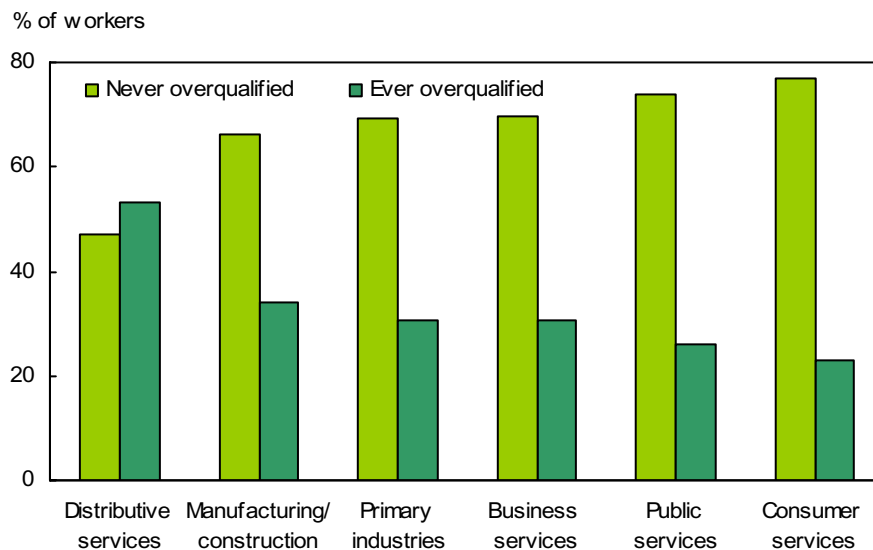
Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Across industries, overqualified Canadian workers were mostly in the distributive trades sector, either retail or wholesale. One out of two workers in the distributive sector experienced overqualification during the study period.

In the other sectors, the overqualification rate ranged from 23% in the consumer services sector to 34% in the manufacturing and construction sectors.

Again, the analysis showed that there were no significant differences among different industrial sectors in terms of the probability of being overqualified 100% of the time, once personal and workplace characteristics were taken into account.

One out of two workers in distributive services sector experienced overqualification

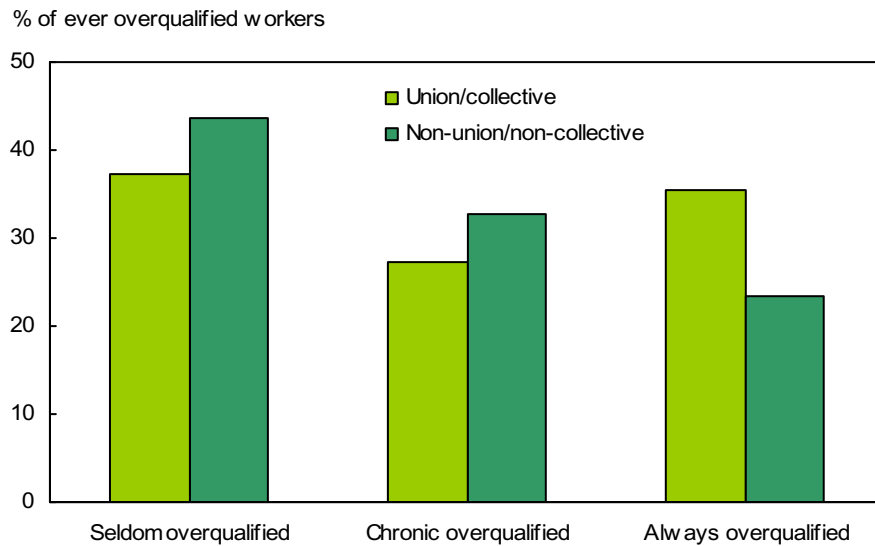


Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Workers who were part of a union or collective agreement were less likely to be overqualified than their counterparts.

Less than one-quarter of unionized workers experienced overqualification compared with 38% of non-unionized employees. However, unionized workers had a much higher chance of remaining overqualified for 100% of the time than their non-unionized counterparts.

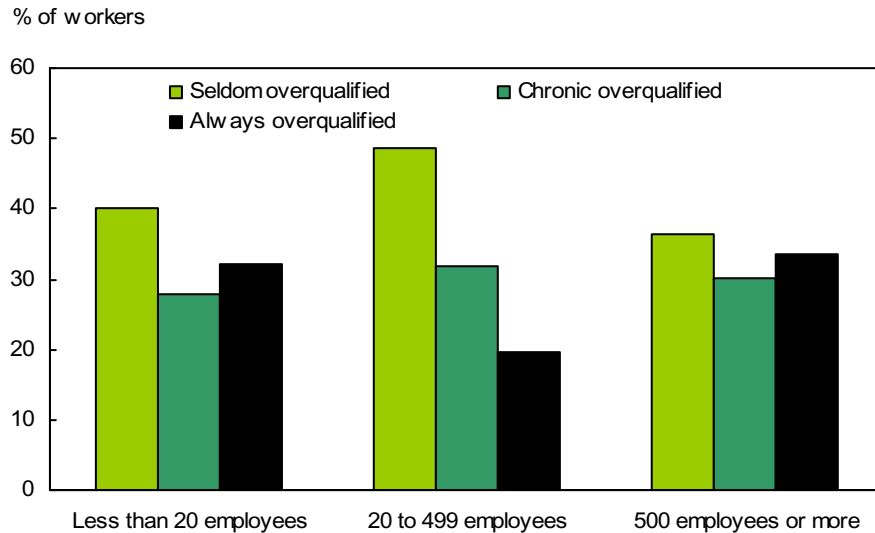
Members of a union or collective agreement were less likely to experience overqualification, but more likely to remain always overqualified



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Overqualification also varied with the size of the enterprise. About 25% of workers employed in larger firms, those with 500 employees or more, were overqualified at some point during the study period, compared with about 30% in small and medium-sized firms. However, the probability of employees working in small firms remaining overqualified 100% of the time was twice that of medium-sized firms.

Medium sized firms have lower incidence of always overqualified workers



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Sample and methods

The Survey of Labour and Income Dynamics (SLID), 1993 to 2001, was used for this analysis. It is both a longitudinal and a cross-sectional survey of individuals and their households. SLID uses the Labour Force Survey (LFS) as a sample frame. Each person (roughly 30,000 adults) in SLID is interviewed for up to six years. The first panel started in 1993 with a subsequent new panel introduced every three years – the second panel started in 1996, third panel in 1999 and fourth panel in 2002. Since the panels span a period of six years, there are always two panels overlapping each other for a period of three years.

Using the longitudinal aspect of the SLID data, estimates derived for reference years 1993 to 2001 use information from the first two panels. For more information regarding SLID, visit www.statcan.ca, or contact Client Services (613) 951-7355 (email: income@statcan.ca).

The sample was restricted to persons with at least a university degree, diploma or certificate at the beginning of the panel and who were never a manager throughout the entire panel. Further restriction excluded all retirees—those aged 55 and over with pension income during any year of the panel. To allow for a more detailed analysis of the characteristics of workers experiencing overqualification, the sample was further split into two groups—those that worked 4.5 years or less and those that worked more than 4.5 years. The sample size was 781 and 3,065 records respectively. The 4.5 year cut-off was empirically determined. The majority of the sample worked more than 4.5 years. Those that worked 4.5 years or less were considered to have a weak attachment to the labour force and those that worked more than 4.5 years have a strong attachment to the labour force. Most of the results in this analysis are for those who had a strong attachment to the labour force.

For a more focused investigation, a logistic regression was modeled on the group that has a strong attachment to the labour market in order to examine the determinants of overqualification of Canadians with a university degree and in an occupation that only requires a high school diploma. Logistic regression estimates the probability that a particular outcome—in this study, being overqualified—will occur as a function of several explanatory variables. The association between each explanatory variable and the probability of being overqualified is examined while holding all other variables constant.

In choosing variables to highlight in the descriptive analysis, two regressions models were analysed, using SUDAAN software and employing 1,000 bootstrap weights designed for use with the SLID longitudinal data. Each model measured the effects of the following variables on the dependent variable: panel; sex; immigration status; age group; region of residence; educational attainment; field of study; work schedule (part-time/full-time); industry; union status; and firm size. Where applicable, the value of the variable at the start of the six-year panel was used; for example educational attainment reflects the respondent's highest level of education in the first year. In effect, the regressions measure the sole influence of each variable while controlling for the effects of the others.

The models were as follows: a logistic regression measuring the relative odds of being ever overqualified as opposed to never overqualified given one's status (as defined by the listed variables); a logistic regression measuring the relative odds of being in the seldom overqualified population, as opposed to the always overqualified population, given one's status.

All results presented in the text are statistically significant at least at the 90% level of significance. Regression results are available at the end of this document.

Cross-sectional counts and percentages of overqualified workers among university degree holders in 1993 and 2001

Distribution of overqualified workers	1993		2001	
	Count	Percent	Count	Percent
Total	251,575	17.5	331,074	19.0
Sex				
Male	98,941	13.3	141,186	17.1
Female	152,634	22.1	189,888	20.8
Age group				
Less than 30 years old	82,514	27.0	110,769	28.9
30 to 39 years old	106,890	20.4	98,134	17.4
40 to 49 years old	36,816	8.9	83,939	17.2
50 years old and older	25,356	13.2	38,232	12.5
Immigrant status				
Recent immigrants (10 years or less)	32,321	53.7	39,702	34.4
Established immigrants	30,595	14.2	43,244	18.5
Canadian born	185,979	16.4	245,283	17.8
Region				
East	21,087	19.7	25,405	21.8
Central	147,296	16.3	207,496	18.2
West	83,193	19.7	98,173	20.3
Educational attainment				
Bachelor or less	246,008	18.4	289,147	20.9
More than bachelor	4,164	4.5	40,851	11.9
Field of study				
Education	39,741	19.1	40,568	14.5
Arts, humanities and social sciences	65,314	22.6	116,801	25.6
Commerce	53,721	30.4	67,991	23.9
Sciences and Health	1,027	29.8	81,872	15.5
Work schedule				
Full-time	193,257	15.7	259,534	18.0
Part-time	57,498	30.3	59,094	26.8
Industry				
Primary, manufacturing and construction	43,071	26.7	61,281	29.2
Distributives services	43,057	39.4	69,437	52.1
Business services	77,885	24.0	77,638	17.8
Consumer services	66,629	10.0	89,622	11.8
Public services	20,934	12.6	27,999	16.7
Union or collective agreement				
Yes	66,019	10.5	101,372	13.7
No	164,335	22.5	216,428	23.9
Firm size				
Less than 20 employees	73,181	30.6	53,375	21.7
20 to 499 employees	53,305	12.4	87,114	17.3
500 employees or more	120,036	16.1	172,505	18.7

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Logistic regression results for the never versus ever overqualified workers

	Coefficient	Probability (%)
Sex		
Male	-0.19	23.55
Female [†]	0.00	27.14
Age group		
Less than 30 years old [†]	0.00*	40.68
30 to 39 years old	-0.81*	23.38
40 to 49 years old	-1.00*	20.15
50 years old and older	-1.06*	19.20
Immigrant status		
Recent immigrants (10 yrs or less)	1.25*	52.44
Established immigrants	0.00	24.01
Canadian born [†]	0.00	24.01
Region		
East	-0.08	23.29
Central [†]	0.00	24.75
West	0.11	26.85
Educational attainment		
Bachelor or less [†]	0.00	28.80
More than bachelor	-0.57*	18.62
Field of study		
Education	0.62*	27.46
Arts, humanities and social science	0.76*	30.34
Commerce	0.84*	32.05
Sciences and Health [†]	0.00	16.92
Work schedule		
Full time	-0.65*	22.95
Part time [†]	0.00	36.33
Industry		
Primary, manufacturing and construction	0.44	29.11
Distributive services	1.16*	45.76
Business services	0.44**	29.11
Consumer services [†]	0.00	20.91
Public services	0.32	26.70
Union or collective agreement		
Yes	-0.39*	24.22
No [†]	0.00	32.05
Firm size		
Less than 20 employees [†]	0.00	29.91
20 to 499 employees	-0.30	24.02
500 employees or more	-0.47*	21.05
Panel		
Panel 1 [†]	0.00	22.84
Panel 2	0.26**	27.74

* significant at a 95% level of confidence

** significant at a 90% level of confidence

† Reference category

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.

Logistic regression results for the seldom versus always overqualified

	Coefficient	Probability (%)
Sex		
Male	-0.36	34.82
Female [†]	0.00	43.36
Age groups		
Less than 30 years old [†]	0.00	24.65
30 to 39 years old	1.16*	51.06
40 to 49 years old	0.85	43.35
50 years old and older	1.44**	57.99
Immigrant status		
Recent immigrants (10 years or less)	1.51*	72.14
Established immigrants	0.06	37.79
Canadian born [†]	0.00	36.39
Region		
East	-0.01	40.73
Central [†]	0.00	40.97
West	-0.23	35.54
Educational attainment		
Bachelor or less [†]	0.00	44.82
More than bachelor	-1.07**	21.79
Field of study		
Education	-0.81	24.38
Arts, humanities and social sciences	0.11	44.72
Commerce	-0.02	41.53
Science and Health [†]	0.00	42.02
Work schedule		
Full time	1.08*	46.52
Part time [†]	0.00	22.80
Industry		
Primary, manufacturing and construction	0.26	42.53
Distributive services	0.24	42.04
Business services	0.53	49.22
Consumer services [†]	0.00	36.33
Public services	-0.90	18.83
Union or collective agreement		
Yes	1.05*	57.03
No [†]	0.00	31.71
Firm Size		
Less than 20 employees [†]	0.00	49.36
20 to 499 employees	-1.11**	24.31
500 employees or more	-0.42	39.04
Panel		
Panel 1 [†]	0.00	40.70
Panel 2	-0.11	38.08

* significant at a 95% level of confidence

** significant at a 90% level of confidence

† Reference category

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1993 to 2001.