

## Article

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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0<sup>s</sup> value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- <sup>p</sup> preliminary
- <sup>r</sup> revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published

# Intergenerational education mobility: University completion in relation to parents' education level

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## Introduction

In Canada, as in other parts of the world, there is a strong correlation between the education of parents and that of their children.<sup>1</sup> Young adults with at least one parent who completed a university degree are themselves much more likely to graduate from university. Studies have even shown that parents' education level had an even greater impact than their income level on the probability of young people pursuing and completing university.<sup>2</sup> There is a similar, though less clear-cut, association for college or trade school education: children whose parents pursued such studies are more likely to do so themselves.

The correlation between parents' and children's education level is attributable to a number of factors. First, from a financial perspective, future parents with more education also have higher incomes. Well-educated people tend to form unions with partners who have similar educational profiles,<sup>3</sup> which further contributes to family income and assets. Those financial resources make it easier for parents to put

money aside and help their children pay for postsecondary education. This financial advantage is even more apparent for families in which the woman is more educated. When these women have children, they have fewer on average (and therefore are able to allocate more financial resources to each one, from early childhood to postsecondary education).

To reduce the disparity in education opportunities based on social background, governments and various foundations provide financial assistance to young people with the aptitude for university studies, but who are from lower income families. Despite such assistance programs, young people from disadvantaged areas, where fewer parents went to college or university, remain less likely to attend university and earn a degree.<sup>4</sup> In fact, a number of recent Canadian studies have shown that financial constraints (tuition fees or lack of financial support) only partly account for the low university participation rate of young people from lower income families.<sup>5</sup> Cultural factors associated with parents' education play an even more important role in this regard.

For example, according to some researchers, better-educated parents provide their children with an environment that is more conducive to their cognitive development from birth, and becomes apparent in various ways, including higher high school grades.<sup>6</sup> Moreover, it has been shown that children's high school reading skills and the amount of effort they put into their education—two key factors associated with postsecondary enrolment and success—are greater among children whose parents are well-educated.<sup>7</sup> In addition, parents who are university graduates have higher educational aspirations for their children and are more likely to transmit them to their children. For example, according to a recent study of postsecondary students from lower income families, those whose parents held a university degree were much more likely to have always known that they wanted to continue their studies after high school (about 50%, compared with 31% for those whose parents had only a high school diploma).<sup>8</sup>

These findings have many policy implications. A number of experts

maintain that while measures whose sole purpose is to financially assist young people from lower income families in pursuing and completing postsecondary studies are important, they are not sufficient to equalize opportunities.<sup>9</sup> They should be combined with policies that provide children of less well-educated parents with resources that they may not have and which are associated with academic success and pursuit of postsecondary education (greater access to cultural activities and materials, demonstration of positive values and attitudes concerning the utility of education, etc.). In short, while the causes of inequality of educational opportunities are multiple and complex, one fact remains: there is a gap in the likelihood of graduating from

university between children whose parents hold a university degree and other children. But is that gap shrinking?

Over the last few decades, the proportion of young adults who hold a university degree has increased substantially. But how has the correlation between parents' and children's education changed? Has university completion among young adults, especially women, grown at the same pace among young people whose parents are less well-educated?

The object of this article is to determine whether intergenerational mobility in university completion has been increasing in recent years. In other words, it explores whether people whose parents did not graduate from university are themselves more likely to have

finished university than was the case about 25 years ago, and whether the gap between them and those whose parents completed university has narrowed over time.

To address that question, data from 12 cycles of the General Social Survey from 1986 to 2009 were used. The analysis covers Canadian-born people between the ages of 25 and 39 (for more details concerning methodology and concepts, see "What you should know about this study"). For people born outside Canada, intergenerational education mobility may be affected by different factors, probably associated with the social, cultural and economic characteristics of their country of origin. Other studies have focused on the education mobility of immigrants' children.<sup>10</sup>

## What you should know about this study

The General Social Survey (GSS), conducted annually since 1985, has two main objectives: 1) gather data on social trends in order to monitor changes in the living conditions and well-being of Canadians over time, and 2) provide information on specific social policy issues of current or emerging interest. The present study addresses those two objectives. To track changes in the relationship between parents' and children's education, data from 12 different years were used: 1986, 1994, 1995, 1999, 2000, 2001, 2003, 2004, 2005, 2006, 2008 and 2009. Those are the years in which the GSS collected information on the education level of respondents' parents. To facilitate interpretation of the tables, data are shown for only 6 GSS cycles. However, the logistic regression model includes the data from all 12 cycles.

The 25-to-39 age group is covered. Most people have usually completed their education by the age of 25. To increase the sample size, the 25-to-34 age group, which is used in many studies, was expanded to include people up to the age of 39. The sample size varied from cycle to cycle, ranging from a low of 3,007 respondents in 1994 to a high of 6,371 in 1999. In 2009, the most recent year covered, the sample consisted of 3,508 respondents, representing 5.4 million Canadian-born people from 25 to 39 years of age.

The questions used to measure parents' and respondents' education did not change from 1994 to 2009 (respondents were asked to provide their highest level of education and the highest level of education for their mother and father). In 1986, a slightly different set of questions was used to gather information about respondents' education. Nevertheless, there was no difficulty separating those who held a university degree from those who did not.

### Logistic regression

Logistic regression analysis was used to determine the extent to which the education of respondents and their parents had changed over time. Data from the 12 cycles were stored in a single database, with a total of 55,700 observations.

In the logistic regression model, cycle is a continuous variable with a value between the maximum of 23 for 2009 and the minimum of 0 for 1986. For example, cycle's value is 22 for 2008, 20 for 2006, 19 for 2005, and so on. Creating a variable for interaction between cycle and the variable for the parent's education makes it possible to determine whether the correlation between the parent's education and the probability of holding a university degree became weaker during the period.

Three models were used: one for all persons aged 25 to 39, one for women in that age group and another for men.

**The proportion of university graduates in the 25-to-39 age group more than doubled from 1986 to 2009**

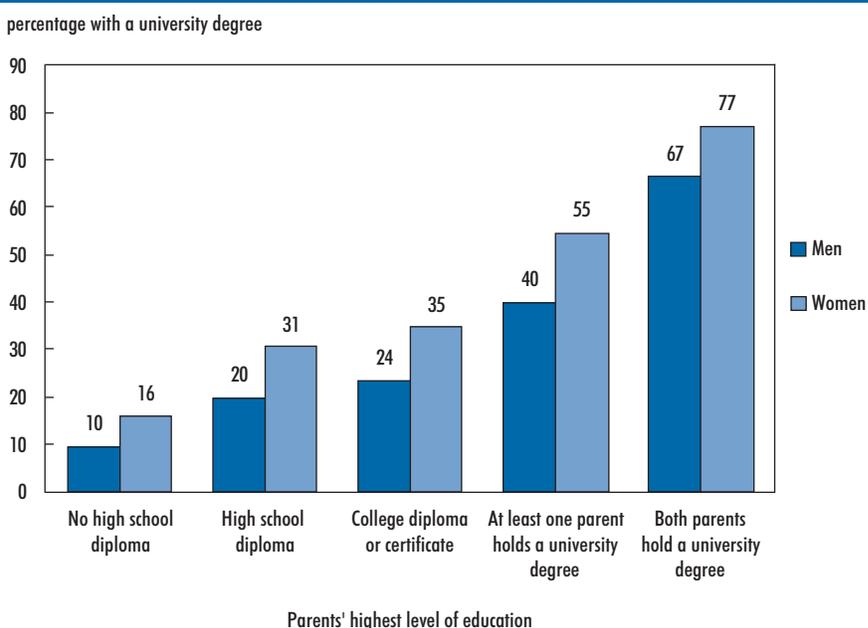
Apart from the increased participation of women in the labour market, one of the major transformations in the last quarter-century is the sharp increase in the number of university graduates in the population. Specifically, in 1986, just under 15% of Canadian-born people between 25 and 39 held a university degree; by 2009, the proportion had more than doubled to 31% (Table 1).

The increase was much larger for women than men. In 1986, men were slightly more likely than women to hold a university degree (16% and 13% respectively for Canadian-born people between 25 and 39). In 2009, however, the reverse was true: 37% of women in this age group held a university degree, compared with 27% of men (Table 1).

In 2009, the probability of holding a university degree was much higher for people with at least one parent who held a university degree (56%) than for people with neither parent holding a university degree (23%) (Table 1). The gap was even greater between people whose parents both held a university degree and those whose parents both held only a high school diploma. For men the respective proportions of university graduates were 67% versus 20%. (Chart 1).

When just one parent held a university degree, whether it was the father or the mother, there was an impact on the result for boys (the father holding a degree was more strongly correlated with their university completion). Among boys whose father held a university degree but whose mother did not, 46% were university graduates. In contrast, only 33% of boys whose mother held a university degree but whose father did not were university graduates. Among girls, whether the father or mother held a university degree was not much of a factor in their university completion (data not shown).

**Chart 1 Among women aged 25 to 39 whose two parents graduated from university, 77% held a university degree in 2009**



Source: Statistics Canada, General Social Survey, 2009.

It is known that the number of young adults whose parents hold a university degree is growing. The proportion of people between 25 and 39 whose parents held a university degree rose steadily from 8% in 1986 to 26% in 2009. Are people whose parents were not university graduates more likely to hold a degree than they were in the past?

**Young adults with less well-educated parents were more likely to be university graduates in 2009 than in 1986**

For people whose parents did not graduate from university, the probability of holding a degree nearly doubled from 1986 to 2009, from 12% to 23% (Table 1). For people with at least one parent who graduated from university, the proportion also increased, but not as dramatically, from 45% in 1986 to 56% in 2009 (1.25 times higher). Clearly, when the percentage at the beginning of the period is low, as is the case here for people whose parents do not hold a

university degree, a sharp increase is more likely than when the initial proportion is higher (as is the case for children of university graduates).

The percentage-point difference in the proportion of graduates by their parents' education remained unchanged from 1986 to 2009 (about 30 percentage points). However, the relative difference declined. In 1986, the probability of earning a university degree was about four times higher for people whose parents were university graduates than for those whose parents were not (45% versus 12%, a ratio of 3.8). In 2009, the ratio was smaller, with 56% of the children of university graduates holding a degree, compared with 23% for others (2.4 times more likely).<sup>11</sup>

To confirm that the disparity in intergenerational education mobility has diminished over time, a logistic regression model was developed. The model is designed to test this hypothesis while controlling for factors affecting university completion that have changed over

**Table 1 Percentage of people aged 25 to 39 who hold a university degree, 1986-2009**

	Canadian-born persons aged 25 to 39					
	1986†	1994	2000	2003	2006	2009
	<b>percentage with a university degree</b>					
<b>Total</b>	<b>14.7</b>	<b>20.5*</b>	<b>23.1*</b>	<b>26.4*</b>	<b>30.5*</b>	<b>31.4*</b>
<b>Parents' education</b>						
No university degree or don't know	12.0	17.0*	17.2*	20.1*	22.8*	23.0*
At least one university degree	44.7	49.3	51.1	52.1	54.7*	55.8*
<b>Sex</b>						
Men	16.2	19.9*	22.3*	24.2*	27.6*	26.6*
Women	13.3	21.2*	23.9*	28.6*	33.4*	36.5*
<b>Parents' education and sex</b>						
<b>No university degree or don't know</b>						
Men	13.7	15.7	16.0	17.4*	20.4*	18.1*
Women	10.3	18.3*	18.3*	22.7*	25.3*	28.0*
<b>At least one university degree</b>						
Men	42.5	52.4	49.3	50.6	50.2	50.1
Women	47.1	46.0	53.4	53.6	59.3*	62.0*
<b>Parents' country of birth</b>						
Canada	13.6	19.1*	21.2*	23.5*	27.7*	28.9*
At least one foreign-born parent	20.6	26.7	31.0*	36.4*	40.1*	40.2*
<b>Region of birth<sup>1</sup></b>						
Atlantic	..	17.1	23.2*	23.2*	24.0*	29.3*
Quebec	..	20.7	22.7	26.4*	31.8*	30.4*
Ontario	..	22.4	24.9	29.0*	31.7*	33.7*
Prairies	..	19.2	21.8	24.7*	28.5*	29.6*
British Columbia	..	18.9	19.6	23.4	32.4*	31.3*
<b>Mother tongue</b>						
English	15.8	20.8*	23.6*	26.7*	29.3*	31.6*
French	11.5	18.1*	21.3*	24.3*	30.4*	29.0*
Other	24.2	30.9	26.9	32.2	42.3*	44.5*

† reference group

\* statistically significant difference from reference group at  $p < 0.05$

1. For region of birth, the reference group is 1994.

Source: Statistics Canada, General Social Survey, 1986, 1994, 2000, 2003, 2006 and 2009.

time (in particular, the gender effect and the widespread increase in the proportion of people with a university degree). Since people whose parents were not born in Canada are more likely to hold a university degree (Table 1), the model also controls for the parents' place of birth and the respondent's age.

The results of the analysis confirm that the relative difference in university completion between people whose parents are university graduates and people whose parents are not university graduates shrank somewhat from 1986 to 2009

(Table A.1). Factors that may have contributed to the slight decline in disparity are complex and probably numerous (a culture change regarding the value of university education, loan and scholarship programs, etc.); identifying those factors is impossible with the available data and is beyond the scope of this study. Moreover, despite the modest decrease in disparity, there remains an appreciable difference between the two groups, and a person whose parents hold a university degree is much more likely than others to complete university.

### **Among women whose parents do not hold a university degree, the proportion of those who are university graduates nearly tripled from 1986 to 2009**

The increase in the percentage of university graduates among people whose parents did not attend university is largely attributable to women. In 1986, only 10% of women whose parents were not university graduates held a degree. By 2009, that proportion had jumped to 28%, almost triple. The gain for men was much more modest, with the corresponding proportion rising from 14% in 1986 to 18% in 2009 (Table 1).

These results show that the decline in the disparity in university completion is mainly attributable to women. Among men in 1986, the probability of completing university was 3.1 times higher for those whose parents held a university degree than for those whose parents did not hold a degree ( $42.5\% / 13.7\% = 3.1$ ) (Table 1). In 2009, the ratio was only slightly lower at 2.8.

The situation was very different for women. In 1986, the probability of holding a university degree was 4.6 times higher for women whose parents were university graduates than for women whose parents were less-educated. By 2009, the difference between the two groups had narrowed appreciably, and the ratio between the two proportions was just 2.2 ( $62\% / 28\% = 2.2$ ) (Table 1). This finding is confirmed in Table A.1. For women, the correlation between having parents with a university degree and holding a university degree is declining with time. For men, the corresponding result is not statistically significant.

### Parents' education has less of an impact for second-generation immigrants than for the Canadian-born

Previous studies have shown that the children of immigrants (second generation) were proportionately more likely to complete university than children born in Canada.<sup>12</sup> The results of this study are consistent with those findings. In 2009, 40% of people aged 25 to 39 with at least one parent born outside Canada were university graduates, compared with 29% of those whose parents were both born in Canada. This difference is also evident with regard to language, as those whose mother tongue was neither English nor French were more likely to hold a university degree than others.

The results of this study also indicate that for people with at least one parent born outside Canada, social background has less of an impact on the probability of

completing university (compared with people whose parents were born in Canada). These findings are consistent with the results of other studies on the subject.<sup>13</sup>

For example, in 2009, among people with at least one parent born outside Canada, the respective proportions of people who held a university degree were 30% for those whose parents were not university graduates and 62% for those with at least one parent who held a degree. In other words, the proportion was twice as high for people with parents who graduated from university. However, for people with two Canadian-born parents, the relative difference between those whose parents were university graduates and others was even greater (53% and 21% respectively, a proportion 2.5 times higher). The statistical model confirms these results (Table A.1). In short, having parents who graduated from university makes one more likely to be a university graduate, but the effect is smaller for second-generation immigrants.

### The level of intergenerational mobility is proportionally similar in the United States and Canada

The latest data from the U.S. General Social Survey show differences in intergenerational education mobility that are very similar to those observed in Canada. For the period from 2006 to 2008, 56% of U.S.-born Americans aged 25 to 39 whose parents were university graduates held a degree themselves; that is the same proportion observed in Canada in 2009.<sup>14</sup> The picture was also similar for Americans whose parents did not complete university studies, with about one-quarter of them holding a university degree.

On the other hand, a study has shown that household income played a more important role in the pursuit of a university education in the United States than in Canada. Specifically, it indicated that the pursuit of a university education

was less prevalent among lower income students and members of visible minorities in the United States than among their counterparts in Canada.<sup>15</sup> Other data show a stronger correlation in the United States than in Canada between parental income and students' high school grades.<sup>16</sup>

### Summary

In the last 25 years, there has been a substantial increase in the number of young adults completing university. Just 50 years ago, only the elite, with some exceptions, could aspire to a university education. Disparities in university completion by family background have declined slightly in the last quarter-century. In 1986, only 12% of Canadian-born people aged 25 to 39 whose parents did not complete university held a degree. By 2009, the proportion had almost doubled, and nearly one-quarter (23%) of the people in such a situation were university graduates. Because of this increase, the relative difference between them and people whose parents held a university degree diminished between 1986 and 2009. Yet the disparities have certainly not vanished. Even today, people whose parents are university graduates are much more likely to pursue a university education than other people.

The data show clear differences between men and women. Today, women aged 25 to 39 are more likely than men in the same age group to hold a university degree. The increase was particularly dramatic among women whose parents did not attend university: in 2009, 28% of women held a degree compared with just 18% of men in the same situation. Thus, women have played a significant role in narrowing the overall gap between people whose parents are university graduates and other people.



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1. Organisation for Economic Co-Operation and Development. 2010. "A family affair: Intergenerational social mobility across OECD Countries." *Economic Policy Reforms: Going for Growth*. Part II. Chapter 5. p. 3-20.
2. Finnie, Ross, Richard E. Mueller, Arthur Sweetman and Alex Usher. 2010. "New Perspectives on Access to Postsecondary Education." *Education Matters: Insights on Education, Learning and Training in Canada*. Vol. 7. Statistics Canada Catalogue no. 81-004-X.
3. Martin, Laetitia and Feng Hou. 2010. "Sharing their lives: Women, marital trends and education." *Canadian Social Trends*. No. 90. Statistics Canada Catalogue no. 11-008-X.
4. Some researchers have suggested that one factor that might help explain the persistent gap in access to higher education by family background is the fact that despite the availability of financial assistance, young people from lower income families have to deal with greater financial difficulties during and after their studies (mainly because their parents are unable to give them money or pay for their education directly, and because they accumulate more debt). In their view, the solution is scholarships, not loans, for young students from lower income families. For more details, see Carmichael, Lorne and Ross Finnie. 2008. "Family income, access to post-secondary education and student grants: Why equal access requires more than loans." *Who Goes? What Matters? Accessing and Persisting in Post-Secondary Education in Canada*. R. Finnie, R.E. Mueller, A. Sweetman and A. Usher (eds.). Queen's Policy Studies Series. Montréal and Kingston. McGill-Queen's University Press. p. 347-368.
5. Finnie, R., R.E. Mueller, A. Sweetman and A. Usher. 2008. *Who Goes? What Matters? Accessing and Persisting in Post-Secondary Education in Canada*. Queen's Policy Studies Series. Montréal and Kingston. McGill-Queen's University Press.  
  
However, family financial resources are not inconsequential. See also Frenette, Marc. 2007. *Why Are Youth from Lower-income Families Less Likely to Attend University? Evidence from Academic Abilities, Parental Influences, and Financial Constraints*. Analytical Studies Branch Research Paper Series. Statistics Canada Catalogue no. 11F0019M – No. 295.
6. For example, see Finnie et al. 2010.
7. Finnie, Ross and Richard E. Mueller. 2008. "The backgrounds of Canadian youth and access to post-secondary education: New evidence from the Youth in Transition Survey." *Who Goes? What Matters? Accessing and Persisting in Post-Secondary Education in Canada*. R. Finnie, R.E. Mueller, A. Sweetman and A. Usher (eds.). Queen's Policy Studies Series. Montréal and Kingston. McGill-Queen's University Press. p. 79-107.
8. Finnie, Ross, Stephen Childs and Andrew Wismer. 2010. *When Did You Decide?* Version 02-24-10. A MESA Project L-SLIS Research Brief. Toronto, Ontario. Canadian Education Project.
9. For example, see Finnie, Ross, Marc Frenette, Richard E. Mueller and Arthur Sweetman. 2010. *Pursuing Higher Education in Canada: Economic, Social and Policy Dimensions*. Queen's Policy Studies Series. Montréal and Kingston. McGill-Queen's University Press.
10. For example, Abada, Teresa, Feng Hou and Bali Ram. 2008. *Group Differences in Educational Attainment Among the Children of Immigrants*. Analytical Studies Branch Research Paper Series. Statistics Canada Catalogue no. 11F0019M – No. 308.
11. Note that intergenerational mobility as measured by the difference in university graduation rates from one generation to the next does not reflect the possible inflation of some degrees to obtain similar jobs. There is certainly an increase in the proportion of graduates, but intergenerational mobility does not necessarily lead to more income. Moreover, the increase in intergenerational mobility may vary by field of study. It is, however, impossible to test this hypothesis with data from the General Social Survey.
12. Abada et al. 2008.
13. For example, Aydemir, Abdurrahman, Wen-Hoo Chen and Corak Miles. 2008. *Intergenerational Education Mobility Among the Children of Canadian Immigrants*. Analytical Studies Branch Research Paper Series. Statistics Canada Catalogue no. 11F0019M – No. 316.
14. Since the U.S. General Social Survey had a smaller sample than its Canadian counterpart, two data cycles were combined to produce these estimates. The required survey weights are provided with the U.S. General Social Survey's available data (see <http://www.norc.uchicago.edu/GSS+Website/>).
15. Frenette, Marc. 2005. "Is Post-Secondary Access More Equitable in Canada or the United States?" Analytical Studies Branch Research Paper Series. Statistics Canada Catalogue no. 11F0019M – No. 244.
16. Organisation for Economic Co-Operation and Development. 2010.

**Table A.1 Logistic regression of factors associated with the likelihood of holding a university degree for people aged 25 to 39**

	Total		Women		Men	
	coefficient	odds ratio	coefficient	odds ratio	coefficient	odds ratio
<b>Constant</b>	<b>-2.06*</b>	<b>0.13</b>	<b>-1.83*</b>	<b>0.16</b>	<b>-2.51*</b>	<b>0.08</b>
Cycle (continuous variable) <sup>1</sup>	0.02*	1.02	0.05*	1.05	0.02*	1.02
Respondent's age (continuous variable)	0.00	1.00	-0.01*	0.99	0.01*	1.01
<b>Parents' education</b>						
No university degree or don't know†	...	1.00	...	1.00	...	1.00
University degree	1.86*	6.40	1.95*	7.06	1.76*	5.83
University degree * cycle	-0.01*	0.99	-0.02*	0.98	-0.01	0.99
<b>Sex</b>						
Men†	...	1.00	...	...	...	...
Women	-0.19*	0.83	...	...	...	...
Women * cycle	0.03*	1.03	...	...	...	...
<b>Parents' country of birth</b>						
Canada†	...	1.00	...	1.00	...	1.00
At least one foreign-born parent	0.67*	1.95	0.59*	1.80	0.74*	2.10
<b>Interaction between parents' country of birth and parents' education</b>						
Parent born outside Canada * parent has a university degree	-0.42*	0.66	-0.48*	0.62	-0.36*	0.70
<b>Interaction between parents' country of birth and the cycle</b>						
Parent born outside Canada * cycle	0.00	1.00	0.00	1.00	-0.01	0.99

† reference group

\* statistically significant difference from reference group at  $p < 0.05$

1. For an explanation of the cycle variable, see "What you should know about this study."

Source: Statistics Canada, General Social Survey, 1986, 1994, 1995, 1999, 2000, 2001, 2003, 2004, 2005, 2006, 2008 and 2009.