Intergenerational Aspects of Education and Literacy Skills Acquisition

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1 Introduction[1]

As part of the socialization process, that is the process of integrating and contributing to society, are the education and the skills one acquires to function in society. Educational attainment and literacy skills are important determinants of one's position in society and contribute to the national economy by allowing a greater participation in the labour force.[2] Getting an education, in the broadest sense, is the result of many interactive forces or influences. Among these, the family and the education system carry a considerable weight. In this paper, we will try to assess the role of the family[3], focussing on the following questions:

- How does the process of rising levels of educational attainment differ from an intergenerational perspective ?
- Does the family's intellectual capital tend to reproduce itself, thus making it difficult for the educational system to provide equal opportunities for all ? Has the pattern of educational mobility changed over time ?
- Are literacy skills associated with educational attainment and do they play a role in educational mobility and in getting access to training opportunities ?
- Does the labour market experience of parents affect their ability to pass on intellectual capital to their children ?
- Do literacy skills enhance occupational opportunities ?
- Do educational investment strategies of parents in support of their children's education differ according to their level of education ?

Should there be a "natural" association between parents' and children's educational attainment, this would imply that there is room for government intervention. Indeed, one of the goals of the government is to establish policies and programs to provide equal opportunities to children in order to compensate for the handicap of coming from deprived economic, social and cultural backgrounds. From a public policy perspective, an education policy is a powerful instrument to influence human capital formation. But other streams of public policies have also to be considered as they may play an important role, particularly from an equity perspective. Examples of such policies are health and welfare policies, such as social transfers to assist young parents with limited or no income to obtain a higher education, support for adequate day care facilities, career counselling and labour market orientation.[4] Inherent to such policies is the recognition that, in today's society, there is a link between low education and poverty.

This paper addresses the above questions in five sections: in the next section (section 2), we present a context for the analysis to be carried out in this paper, providing both a simple conceptual framework and a few relevant characteristics of the population under study. In section 3, we review the major parameters

1 We are indebted to René Morissette for his technical assistance, and to Jac-André Boulet and Emile Allie for their comments while doing the research in preparation of this document.

2 See details regarding this relationship in Statistics Canada et al. (1996).

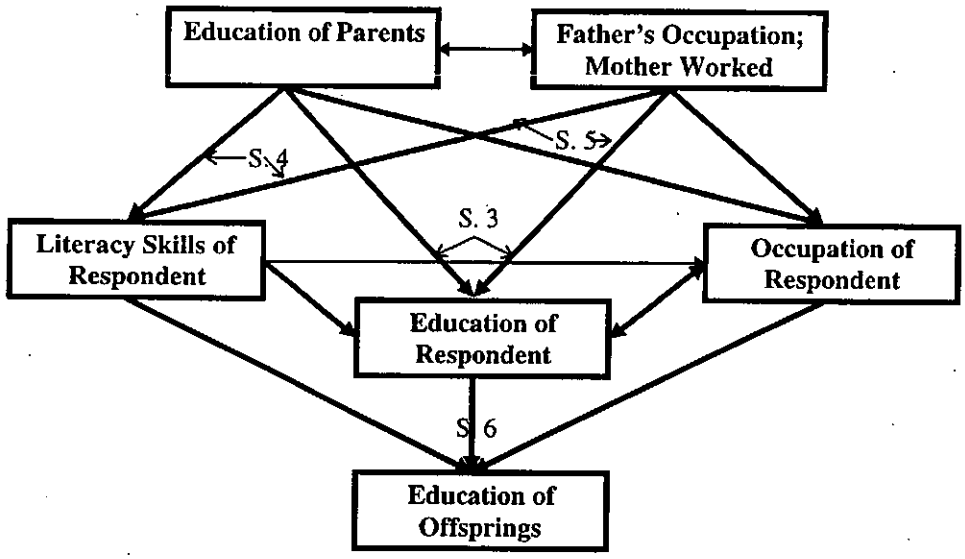
3 We acknowledge, however, that major social upheavals have occurred over the last few decades, particularly as it relates to changing family and social structures. Parent-child relationships may have given way to a variety of adult-child relationships within a "family" environment, but this, by and large, should not be sufficient to modify the conclusions of this paper.

4 See Hirshhorn (1990).

of the educational mobility from different perspectives, while in section 4, we examine how literacy skills complements educational attainment. In section 5, we examine whether the labour market experience of parents further enhance their ability to transmit intellectual capital to their children and thus serve as a signalling device for the labour market situation of children. Finally, in section 6, we examine if educational investment strategies of parents in support of their children's educational attainment differ according to their educational attainment.

Schematically, Figure 1.1 represents what this paper is intended to deal with.

Figure 1.1: Variable Interrelationships



The above diagram shows the relations between the main variables we examine in the various sections of this paper.

2 Context for the Analysis

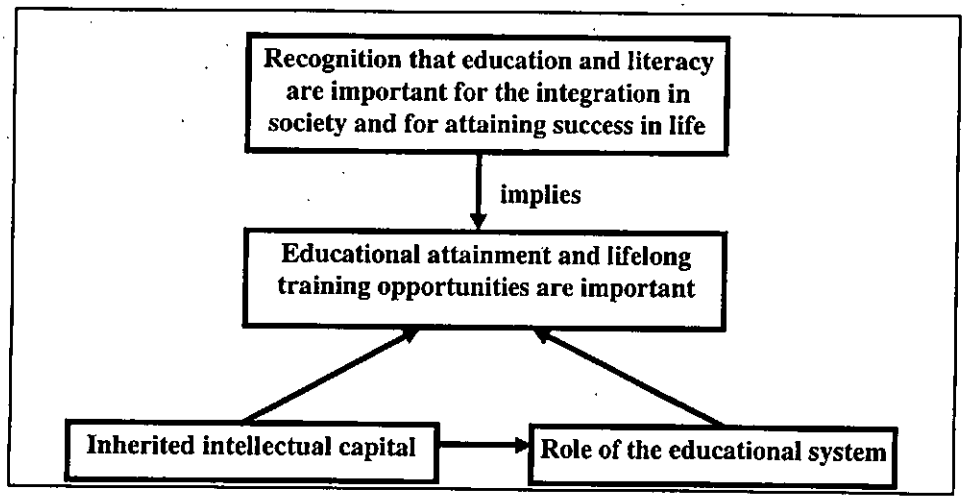
The purpose of this study is to relate survey respondents' educational attainment, literacy abilities and labour market characteristics to their parents' attributes, such as educational level of the father and of the mother, whether or not the mother worked, and the father's occupation. The study is enhanced by classifying respondents by age group, thus allowing for the possibility of analysing the relationships between the respondents and their parents over more than one generation.

The analysis is carried out with data using the International Adult Literacy Survey (IALS) for Canada[5]. A representative sample of 5660 individuals were asked a detailed questionnaire in 1994. The survey was generally designed to meet the following selected objectives:

- *"to shed light on the relationship between performance, educational attainment, labour market participation and employment for those individuals found to be able to read but not able to do so very well";*
- *"to compare and contrast the literacy skill profiles for economically important subpopulations across countries and language groups".*[6]

In this paper, a simplified model of education is suggested as shown in Figure 2.1. It posits that education and literacy are of prime importance in determining how well people integrate to various facets of society and who are most likely to have successful working lives. This model also suggests that not only is educational attainment important, but also that access to training opportunities to upgrade skills and knowledge is readily available throughout a lifetime.

Figure 2.1: Simplified Model of Education



The model also posits that educational attainment is largely achieved through the working of the education system and by inherited intellectual capital that resides in the family environment. Intellectual capital acquired at home through the interaction of family members plays an important role. This interaction affects directly one's educational performance through a more or less supportive environment for learning. Intellectual capital, forged in the family environment through the generations, also has an

5 Further work will involve comparing the Canadian results as developed in this paper with those of other countries (the United States, Germany and Sweden). This prime reason for using IALS in the present analysis is that it is the only database that makes such international comparisons possible. See OECD/Statistics Canada (1995).

6 Statistics Canada and al. (1996), p. 10.

indirect influence on educational attainment as it may make a substantial difference in the way one goes through schooling and adult life. Children may not be starting school on an equal footing. An efficient education system would thus be one which would allow children of parents with low levels of education to surpass their parents' education over time.

Much of this paper deals with the relationship between one's educational attainment (and some of the associated labour market benefits) and the inherited intellectual capital (here represented by the educational attainment of respondents' mothers and fathers, and occupational status of fathers). Different educational strategies, such as those of deliberately building on accumulating greater intellectual capital for their children, are then analyzed. As we are concerned about the last level of education attained by the respondents, those still in school were left out of the analysis.[7]

This paper also examines the extent to which the socio-educational background can be used to predict educational and occupational attainments. Is the generation gap diminishing over time or, to put it another way, are social characteristics of individuals changing over time? This requires that we compare two age groups and examine their respective characteristics. In that respect, most of the analysis carried throughout this paper will make use of three types of intergenerational links:

- the ***immediate relationship*** between the respondent's education, literacy and occupational prestige and parents socio-educational status;
- the ***behavioural differences*** between the 26-35 and the 46-55 years of age in terms of their own status and the relationship to their parent's socio-educational characteristics; and
- the ***offspring relationship***, showing differentiated educational strategies adopted by parents of school-age children.

The selection of the age brackets used for comparisons are based upon the following: the choice of the 26-35 age bracket is used because people from this cohort are at the beginning of their careers and most have completed initial education. The 46-55 age cohort represents a cohort that are on average 20 years older than 26-35 age cohort and are still in the labour market. This cohort also represents an age group intermediate between the younger generation and their parents. The age difference between the two groups (cohorts) should be sufficient to distinguish one generation from another. The older cohort went through the education system in the late 1940s and the 1950s, while the younger one was in formal education in the 1970s and the 1980s. In the IALS database, some 986 individuals were in the 26-35 years cohort, representing a population of about 4.9 million, and 652 individuals of the 46-55 cohort, for a population of about 3.2 million.

Another important distinction made throughout this paper is along gender line. Given that women have entered the labour market massively, particularly over the last 20-30 years, we hypothesize that the intergenerational relationships may be different for the two genders.

Mobility analyses are very demanding on data. Here, sample size limitations have forced us to consider in the presentation four levels (secondary not completed, secondary, post-secondary non-university, university) for the respondents, and three for their parents (secondary not completed, secondary, post-secondary).

Finally, throughout this paper, when mention of literacy is made, we refer to document literacy. Document literacy relates to the ability of using information from documents such as payroll forms, job applications, maps, bus schedules and graphs. This type of literacy measure can be interpreted as

[7] A total of 303 individuals (or 5.3 % of the sample) were left out of the analysis as they reported being still in school. Of these 295 individuals were between the ages of 16 to 25 (or 96% of the total population of people still in school), 5 in the 26-35 year bracket (3.5%) and 3 in the 36-45 year old bracket (0.5%).

comprising elements of both types of other literacy measures: prose literacy (the ability to use information such as editorials, poems, fiction and news bulletins) and quantitative literacy (the ability to perform arithmetic functions of various sorts).

Figures 2.2 to 2.5 present some of the major characteristics of the groups that we will study. Figure 2.2 shows that the younger generation (26-35 years old) has attained higher levels of education than has the older one (46-55 years old) and that the major difference resides in the proportion of people graduating from high school and from non-university post-secondary education institutions. This phenomenon is largely explained by the fact that there has been a major expansion of the college system throughout the country over the last twenty years. University attainment is, by comparison, only marginally higher.

Figure 2.2: Percentage of Individuals, by Level of Educational Attainment

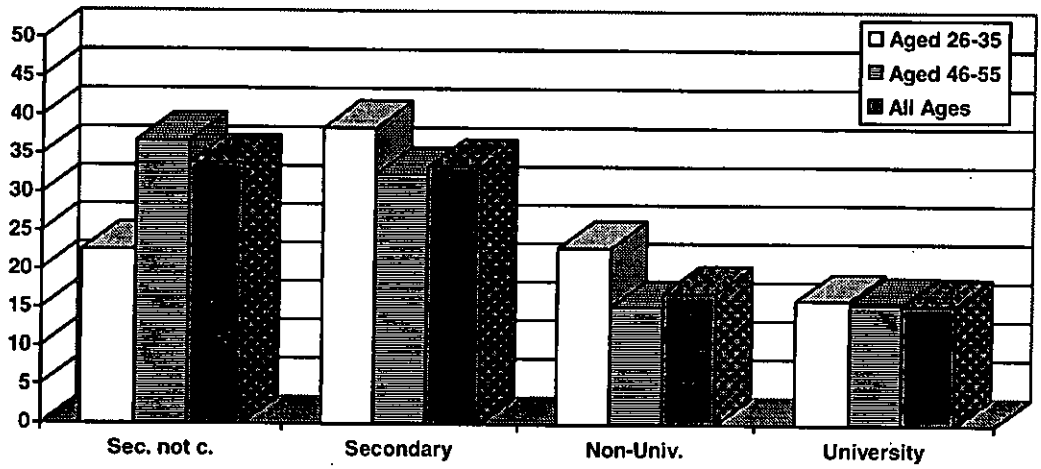


Figure 2.3 shows that some 62 % of the younger generation perform at literacy skill level 3 or higher, as compared to 46 % for the older generation. The fact that there are a number of young people with relatively higher literacy skills is only a moderate consolation given that the proportion with weak literacy skills remains high, which in itself is at odds with the changing demands of the economy. The lower performance of the older generation in this respect may be attributed to either the older generation having low skills at a young age (and still having low skills), or the depreciation of skills over time.

Figure 2.3: Percentage of Individuals, by Document Literacy Levels

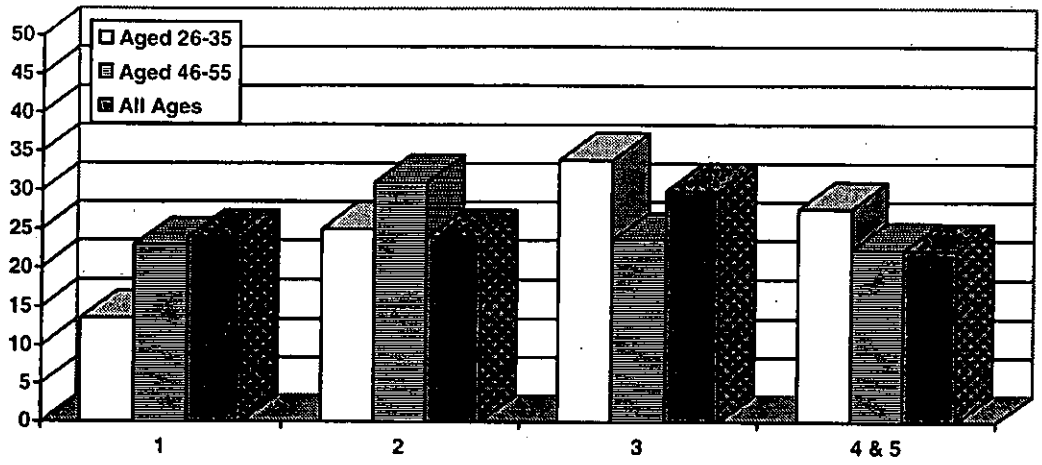
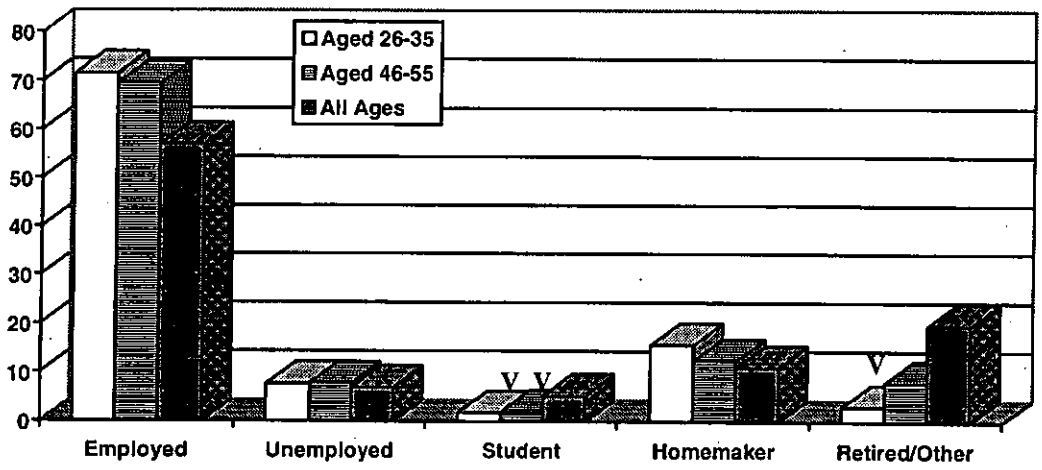


Figure 2.4 shows only marginal differences between the two generations in terms of labour market status. This is expected since we have chosen two generations whose members are most likely heavily involved in labour market activities, ie. either employed or looking for work.

Figure 2.4: Percentage of Individuals, by Labour Force Status



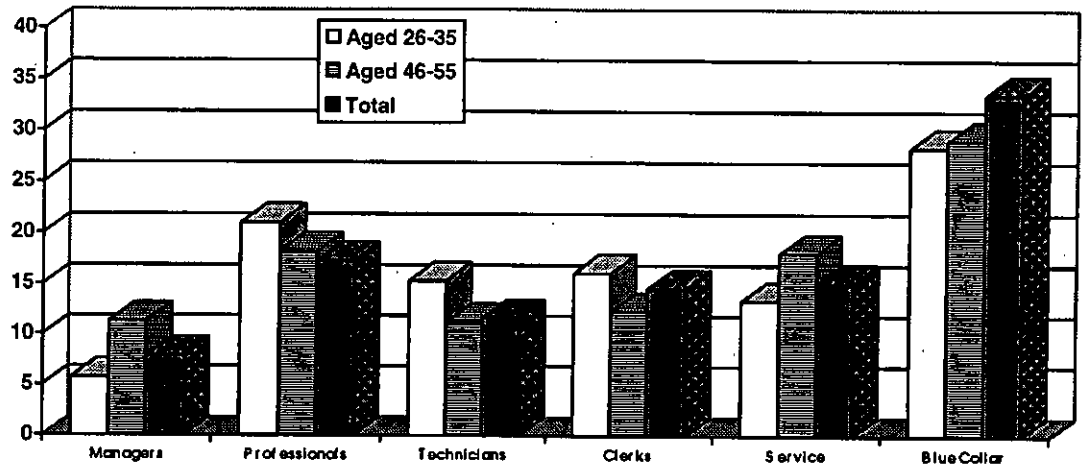
V indicates that, because of the high level of variability of the data, the percentages calculated for that column may be inexact.

Figure 2.5 shows the distribution by occupation of all the labour force participants and for the two age cohorts. There are proportionately more people from the older generation in the managerial occupations, whereas there is a greater proportion of people from the younger generation in professional and technician occupations. This reflects the fact that managerial occupations require experience that most young people do not yet have. It also reflects the fact that the rising level of education allows young people to enter the workforce in highly skilled occupations in larger numbers.

Clerical occupations remain an entry level occupation for many young people. It is also interesting to note the importance of the blue collar occupations (which includes craft and trade workers, skilled agricultural and fishery workers, plant and machine operators and assemblers, armed forces and elementary

occupations) among young workers; this is not what one would suspect is happening in a context of a relative decline of manufacturing jobs and the rapid growth of the service economy.

Figure 2.5: Percentage of Individuals, by Occupation and Age of Respondents



3 Educational Mobility

Referring to the framework of the model just outlined, we posit that one of the factors determining how much education one receives relates to the level of education their parents acquired. A highly supportive learning environment at home (here essentially proxied by the level of educational attainment of the parents and the occupation of the father) is likely to be reflected into higher educational attainment of the children. The supportive environment will be manifested not only through a financial capacity to support children's higher education, but also through day-to-day interactions of higher "intellectual quality" between parents and children. This relationship between the educational attainment of parents and children can be examined in a variety of ways. In this section, we will develop the necessary information to answer three of the questions raised above:

- How does the process of rising levels of educational attainment differ from an intergenerational perspective ?
- Does the family's intellectual capital tend to reproduce itself, making it difficult for the educational system to provide equal opportunities for all ?
- Has the pattern of educational mobility changed over time ?

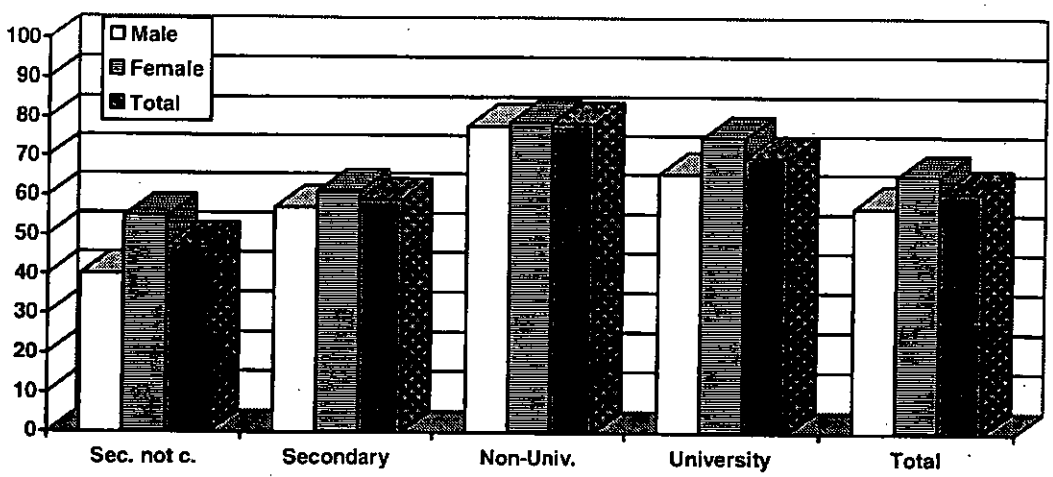
3.1 Level of Educational Attainment of Respondents

Figures 3.1, 3.2, 3.3, 3.4 and 3.5 measure the proportion of individuals in a given level of education who acquired more education than their father and their mother, respectively, or than their parent with the higher level of education. This is often referred to as ***upward educational mobility***.[8] This percentage is given for both genders and for two age cohorts.[9]

[8] ***Upward educational mobility*** is commonly defined as the percentage of the people in a given category obtaining a higher level of education than their parents. Although data are presented with some aggregation of the levels of education, mobility rates were calculated with the original disaggregation available in the database.

[9] Sample size does not allow reliable estimates in a cross-classification of gender and age cohort.

Figure 3.1: Percentage of Individuals Having Acquired a Higher Education than Their Father[10], by Level of Educational Attainment and Sex of Respondent



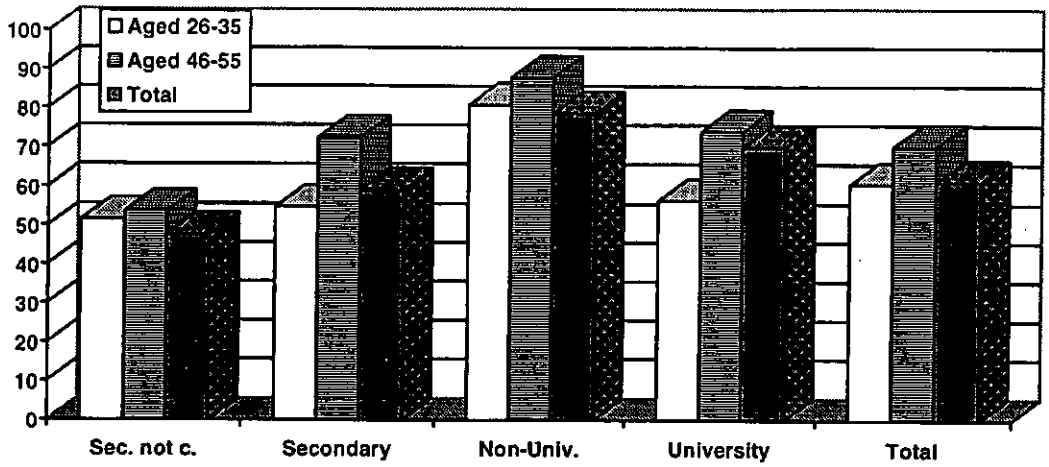
Globally, results show a definite movement towards upward mobility: all levels of education taken together, 61% of respondents have achieved higher levels of education than their father. Some 57% of male respondents and 65% of female respondents attained higher levels than their fathers. In contrast, only 13% of males and 11% of females obtained less education than their fathers.[11]

As one would expect the higher the level of education of the individual, the more likely is the individual to obtain a higher level of education than the father (Figure 3.1). The imperfect pattern — the observation that respondents with a university degree do not have a higher level of upward mobility than respondents with a non-university post-secondary education — is essentially due to the fact that non-university post-secondary education is a level of education far less common among fathers who received their education in periods where this level, intermediate in status between secondary school graduation and university, did not exist with the extent we know it today.

[10] The percentages used in this graph as well as the next three includes only those individuals having responded knowing their own education and that of their parents. This implies that 17.1% of male respondents and 14.5% of female respondents are not included in the analysis. See Appendix Table A-1 for the distribution of respondents not knowing their parents education and not stating their own or their parents' level of education. Educational categories 4 (Completed secondary, vocational and technical) and 5 (Completed secondary, general and academic) of variable C5RCD (Mother's education) and of variable C11RCD (Father's education) were combined into one category so that it can be compared with category 4 (Completed secondary) of variable A8RCD (Respondent's education).

[11] Our results in this section are close to those of a similar analysis done with the Statistics Canada's Survey of Labour and Income Dynamics (Fournier et al., 1995)

Figure 3.2: Percentage of Individuals Having Acquired a Higher Education than Their Father, by Level of Educational Attainment and Age of Respondent



As shown in Figure 3.2 above, individuals from the older age group (46-55 years of age) generally are more likely to surpass their father's education than those in the younger age cohort (26-35 years of age), with the same general pattern by education level of respondents as seen previously. This may reflect the fact that as the general level of education in the population gradually increases, it becomes more difficult to surpass one's parents education, even in a context where the education systems becomes more and more accessible.[12]

The significantly higher than average percentage of men having acquired a non-university (or community college) level of education and having obtained a higher level of education than their fathers reflect the fact that a large number of community colleges have sprung over the last 20 years. Indeed, the data compiled using the IALS Survey and shown in Table 3.1 demonstrates that there has been both a recent increase of this level of education (at the college level) and a reduction in the potential for upward mobility. Upward educational mobility is curtailed somewhat by the concomitant growth of university education.

Table 3.1: Proportion of People with Non-University Post-Secondary and University Education

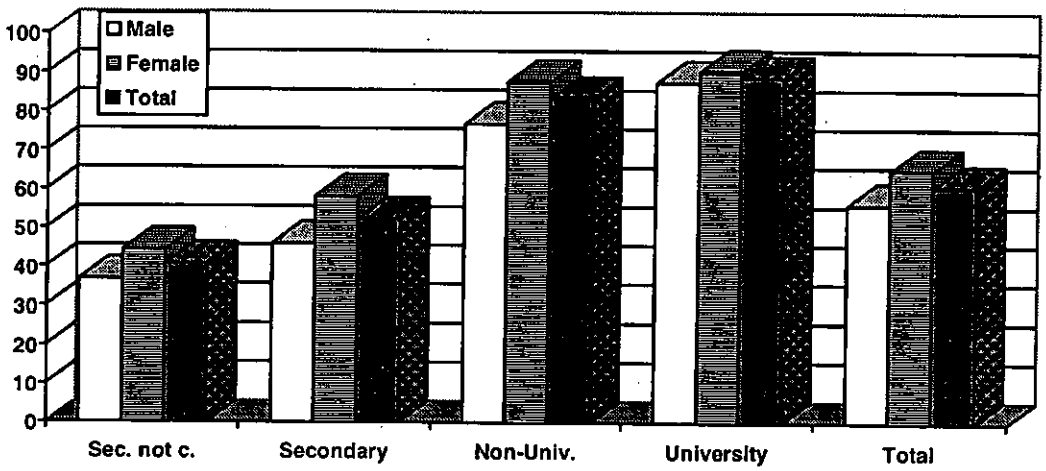
	Proportion with non-university post-secondary education	Proportion with university education
Fathers of older cohort	4.7%	4.6%
Fathers of younger cohort	7.4%	11.2%
Older cohort	17.0%	17.9%
Younger cohort	24.2%	17.0%

Thus far, we have examined the relationship between the educational attainment of the respondents and that of the father. A similar relationship exists between the respondents and their mothers, as shown in Figure 3.3 below. Some 56% of men and 61% of women have a higher level of educational attainment than their mothers. The magnitudes of upward mobility are very similar to those observed between the respondents and their fathers. The fact that we observe a slightly higher upward mobility for university graduates, compared with those with non-university education, reflects the fact that mothers are relatively

[12] Mathematically-speaking, as the proportion of university educated individuals increases, the basis for upward mobility in the next generation shrinks by as much.

more represented in the non-university level of education than fathers, while being relatively less among university graduates.

Figure 3.3: Percentage of Individuals Having Acquired a Higher Education than Their Mother, by Level of Educational Attainment and Sex of Respondent



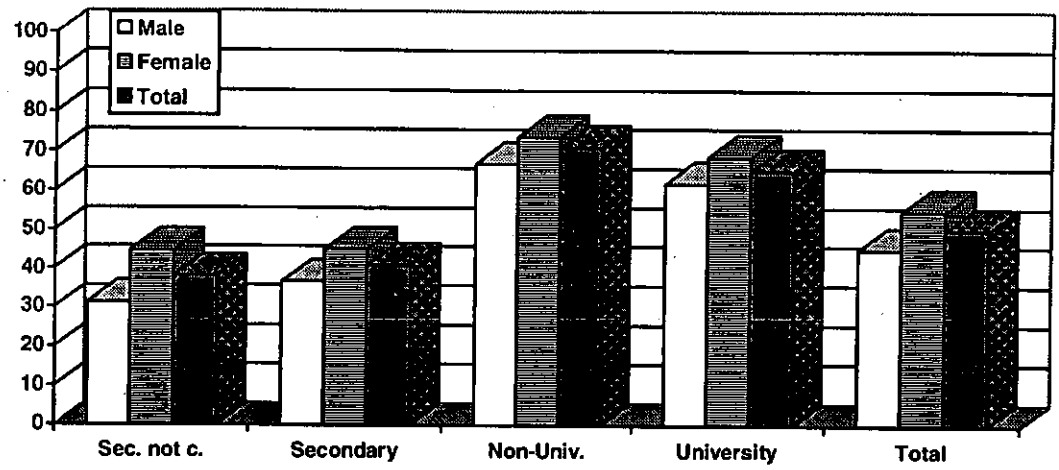
For individuals having attained a university level of education, 89% have a higher education than their mothers. From Figure 3.1, 70% have a higher level of education than their fathers'. This indicates that fathers of individuals having that level of schooling have a significantly higher level of education than the mothers of these individuals. At the lower level of education, the opposite occurs. For instance, among high school graduates, 59% have a higher level than their fathers, whereas 52% have a higher level than their mothers.

So far we have examined upward educational mobility with respect to fathers and mothers taken separately. We contend, however, that individuals are influenced more by the parent that has attained a higher level of education than by any one of the parents.[13] Figure 3.4 shows that 50% of individuals (45% of men and 55% of women) have a higher level of education than the parent with the highest level of education. This percentage is naturally lower than the percentage obtained when examining upward mobility between respondents and each of parents separately (about 61% in each case).

[13] Separate Spearman rank correlations between education of the respondent (male, female, younger cohort, older cohort) and the education of their father and their mother, respectively, do not show significant differences, although they are all significant.

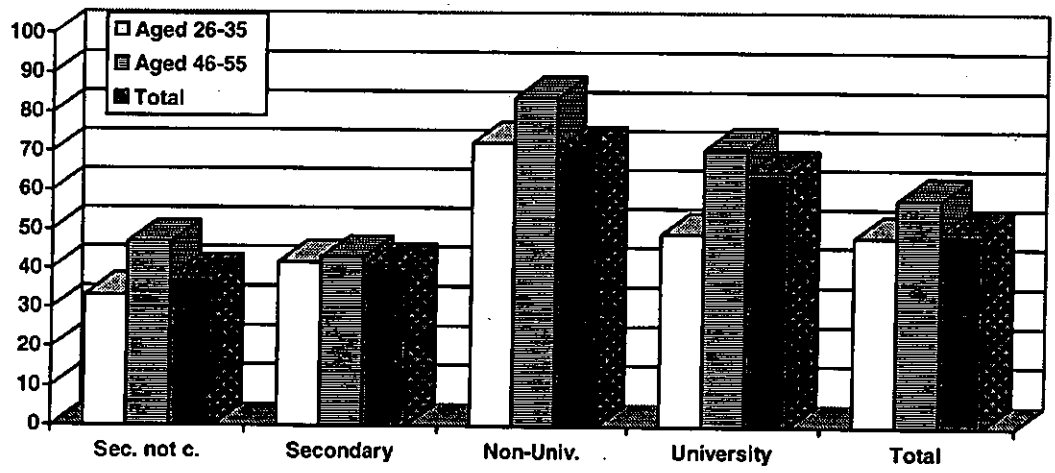
	Male	Female	Aged 26-35	Aged 46-55	Total
Education Father	0.427	0.450	0.376	0.455	0.440
Education Mother	0.434	0.455	0.338	0.520	0.445

Figure 3.4: Percentage of Individuals Having Acquired a Higher Education than the Parent with the Highest Level of Education, by Level of Educational Attainment and Sex of Respondent



Applying the same approach to the data by cohort, Figure 3.5 below indicates that 58% of the older generation of individuals outpaced their parents' level of education, whereas 48% of the younger generation did likewise. This indicates that the difference in the level of education between the individuals of the older generation and their parents is greater than the difference between the younger generation and their parents. The parents of the new generation of individuals are simply more educated than those of the older generation. The differences are most apparent at the higher levels of education of the respondents and for individuals who did not complete high school.

Figure 3.5: Percentage of Individuals Having Acquired a Higher Education than the Parent with the Highest Level of Education, by Level of Educational Attainment and Age of Respondent



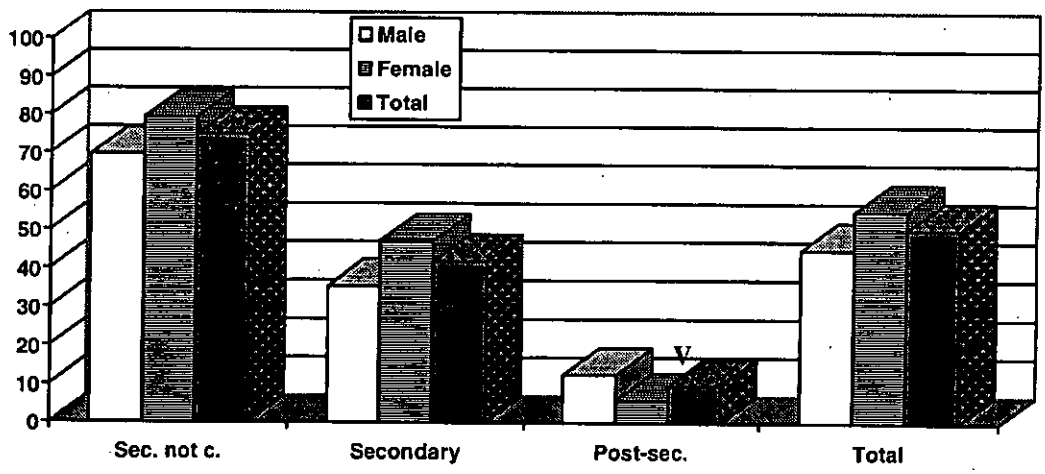
3.2 Level of Educational Attainment of Parents

Thus far, we have observed the relationships between parents and children's educational attainment by level of education of the survey respondent. Now, do we observe a similar upward mobility by level of education of the parents ? A complementary approach would be to look at how the parents' education

influenced their children's academic accomplishments by levels of education attained by the parents and what is the likelihood that these children experience an upward educational mobility. This is the approach we adopt for the next four figures.

As shown in Figure 3.6, the probability of having a higher level of education decreases with the level of education of the parents. Women are slightly more likely than men to outperform their parents in terms of educational attainment, except for the case when at least one of the parents has a post-secondary education. In such a case, men (13%) have twice as much of a chance in outpacing their parent's education than women (6%).

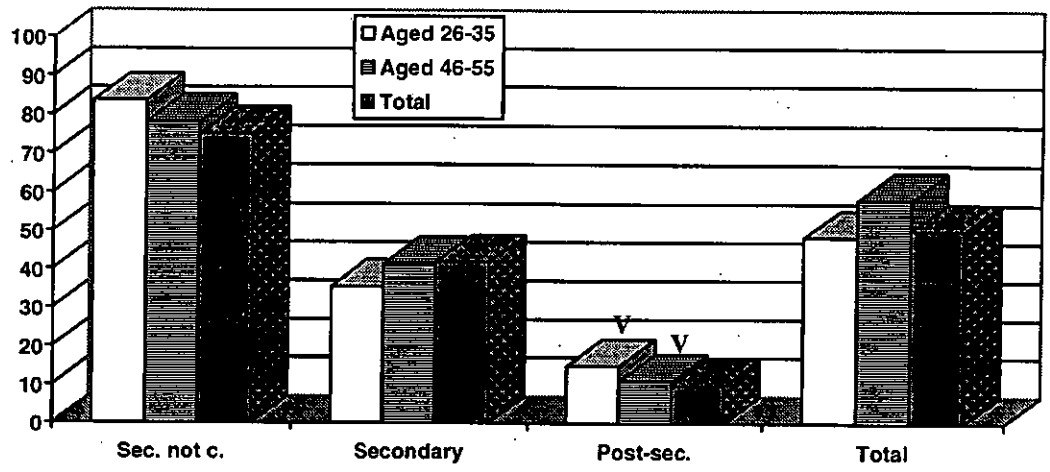
Figure 3.6: Percentage of Individuals Having Acquired a Higher Education than the Parent with the Highest Level of Education, by Level of Educational Attainment *of the Parents* and Sex of Respondent



V indicates that, because of the high level of variability of the data, the percentages calculated for that column may be inexact.

The intergenerational differences are also pronounced. Figure 3.7 shows that the educational level of the population increases as times goes by. Indeed, some 78% of the individuals aged 46-55 years outpaced their parents' education when their parents attained less than high school education, whereas 84% of the 26-35 year olds did the same. This shows that the number of people with low levels of education used as a denominator for such calculations is shrinking. At the other end of the spectrum, that is at the post-secondary level of education of the parents, 11% of the older generation have a higher level of education than their parents, whereas 15% of the younger generation do likewise. This supports the idea that over time more people acquire a university education.

Figure 3.7: Percentage of Individuals Having Acquired a Higher Education than the Parent with the Highest Level of Education, by Level of Educational Attainment *of the Parents* and Age of Respondent



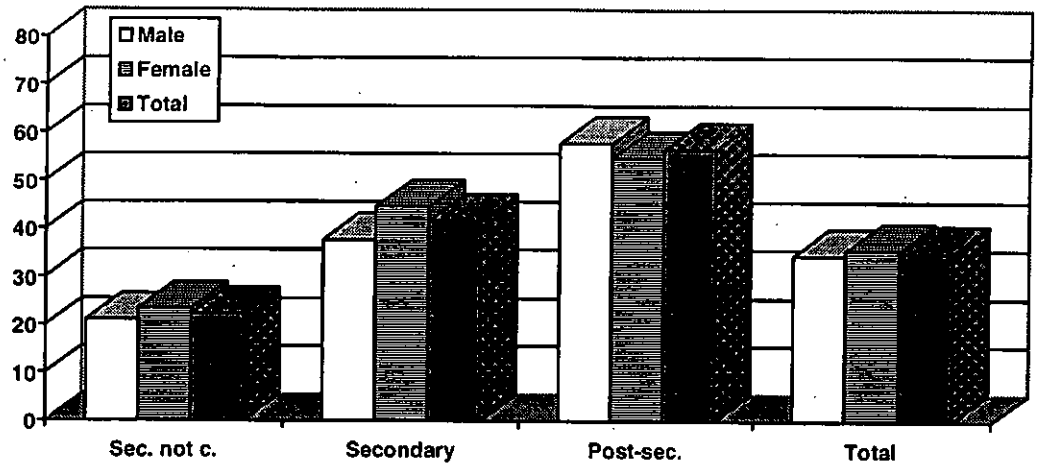
V indicates that, because of the high level of variability of the data, the percentages calculated for that column may be inexact.

While the above shows the positive side of education mobility, the magnitude of downward mobility among children whose parents acquired a post-secondary level of education, but obtained a lower level of education than their parents is still relatively high. Although the data for such affirmations are not statistically significant, intuitively the results are credible. Indeed, some 33% of individuals of the older age group and 14% of the younger generation whose parents acquired a post-secondary level of education, and obtained a lower level of education than their parents.

3.3 Probability of Attaining Higher Education

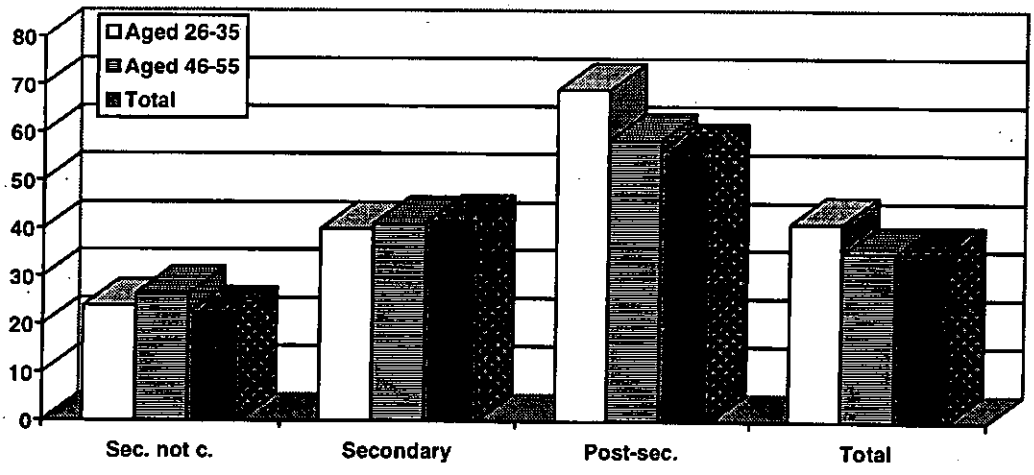
The next figures (Figure 3.9 ~~and 3.10~~8 and 3.9) examines the probability of obtaining at least a post-secondary type of education by level of educational attainment of the parents. They show that, as expected, the higher the level of education of the parents, the higher the probability of obtaining at least a post-secondary school degree. Indeed, people who have parents having completed either at least a post-secondary degree have 2.5 times the chance of obtaining at least a post-secondary degree than those whose parents have not completed their primary school. The situation is somewhat more favourable for men (2.8 times) than for women (2.3 times). The magnitude of these results may reflect the fact that there is still in Canada a strong contingent of people having parents with little or no formal education.

Figure 3.8: Probability of Attaining at Least a Post-Secondary Level of Education, by Level of Educational Attainment of the Parents and Sex of Respondent



A similar set of probabilities exists between the two age groups. The figure below shows that the younger generation have close to three times the chance of obtaining at least a post-secondary education if their parents also had at least a post-secondary degree as opposed to parents having not completed high school. For the older generation, this proportion is about 2 to 1. Despite the dramatic expansion of the post-secondary (community college) sector and the avowed objectives of policy makers of making the educational system more accessible, the data seems to indicate that the education system has failed to provide for equal educational opportunities for men and women.

Figure 3.9: Probability of Attaining at Least a Post-Secondary Level of Education, by Level of Educational Attainment of the Parents and Age of Respondent



Although the data is not statistically significant, we observe that the younger age group has close to 13 times more of a chance of attaining a university level of education if their parents attained at least a post-secondary level of schooling as opposed to those having not completed high school. This ratio is close to 3 to 1 for the older generation. The difference in these two figures stem from the fact that the probability of attaining university for the younger age cohort if the parents have not completed high school is extremely low. This reveals that the development of the post-secondary non-university (community

college) sector to provide access to children of parents with a wide range of educational attainment and particularly for those whose parents' education stopped before — often much before — the completion of high school is important. However, as mentioned earlier, this may not be sufficient to reduce the relative disadvantage that these children of the younger cohort experience in comparison to those of the older generation.

3.4 Regression Analysis

Up till now, we have used mobility tables to describe educational mobility between two generations. We can now turn our attention to the identification of some influences on the schooling experience of the respondents. To do so, we use an ordinary least square regression approach that gives us the number of years of formal education completed by the respondent in relation with a number of relevant factors. What we want to obtain from this analysis is a measure of the influence of various factors in a controlled environment.

The variables included are gender, as men's and women's propensity to attain certain levels of education may be different, age to capture the cohort effect, education of the parents (high school not completed - EDPARPRI; high school - EDPARSEC; post-secondary - EDPARPSC) to capture its influence while controlling for other factors. We also include a measure of the occupation of the father as a proxy for the influence that the parents' labour market experience may have on children's educational attainment, beyond the direct effect of their own level of education (more will be said about this in Section 5).

Occupation is represented by a variable (SESFATH) where each occupation receives a score that measures its relative socio-economic status.[14] This allows us to alleviate the reliability problem derived from high sampling variability in some occupations and to have a synthetic, recognized measure of the "importance" of an occupation relative to the others.

The variable *'mother worked'* (MOTHWORK) is included to measure if an attachment of the mother with the labour market had any influence on educational attainment. We also suspect that a part of educational attainment can be explained by whether the individual was born in a specific region of Canada or abroad, and live in a rural setting, given that accessibility to further education may be hampered by distance and isolation of smaller communities.

Table 3.2 presents the results of the regressions run for the whole population and, separately for the two age cohorts.

[14] The calculation of the socio-economic scores are based on Blishen and al. (1987). We adopted the scores given by Blishen and al. to 4-digit occupations in the Canadian Classification and Dictionary of Occupations (CCDO). We transposed the classification into the Standard Occupational Classification 1980 (SOC) and weighted the scores with the labour force by SOC 1980 occupations in the 1991 Census of Population to arrive at socio-economic scores for the 2-digit level of occupations (21 occupations). This gave us the following scores: Managerial, Administrative - 56.78; Natural Science - 61.78; Social Science - 56.30; Religion - 50.48; Teaching - 61.61; Medicine - 55.65; Artistic - 43.62; Clerical - 37.97; Sales - 36.55; Service - 29.35; Farming - 27.16; Fishing - 25.22; Forestry - 30.04; Mining - 42.08; Processing - 34.25; Machining - 41.17; Fabricating - 37.94; Construction - 37.75; Transportation - 36.56; Materials Handling - 31.25; Other Crafts - 43.04; and, Not Stated - 29.94.

Table 3.2: Incidence of Various Factors on Number of Years of Education, for Total Population, 26-35 and 46-55 Year Age Groups

	Total Population[a]	26-35 Years[b]	46-55 Years[b]
Years of Education (base)	12.74	12.23	12.78
MALE	0.11	0.27	0.52
FEMALE	-	-	-
AGE16	-0.37**		
AGE26	0.16		
AGE36	-		
AGE46	0.002		
AGE56	-1.72*		
EDPARPRI	-1.69*	-1.03*	-1.17*
EDPARSEC	-	-	-
EDPARPSC	0.75*	1.47*	0.44
SESFATH	0.09*	0.06*	0.13*
MOTHWORK	1.11*	1.10*	-0.42
MOTHNOTWK	-	-	-
RURAL	-0.54*	-0.35	-0.33
URBAN	-	-	-
OTHER	-0.05	-0.33	1.22*
ATLANTIC	-0.66*	0.24	-1.55*
QUEBEC	-1.13*	-0.10	-2.11*
ONTARIO	-	-	-
WEST	-0.42*	-0.43	-0.06
Adj. R-square	*0.2929*	*0.207*	*0.3627*
F	*138.58*	*25.095*	*33.157*
Observations	*4650*	*924*	*566*

[a] The base is the average number of years of education for women, 36-45 years of age, whose parent with higher education had completed secondary school, whose father had an average SES (37.00), whose mother did not work, living in an urban area, and born in Ontario.
[b] The base is the average number of years of education for women, whose parent with higher education had completed secondary school, whose father had an average SES (38.58 for the aged 26-35 and 35.98 for the aged 46-55), whose mother did not work, living in an urban area, and born in Ontario.
* significant at 99% level.
** significant at 95% level.

Some of the most relevant results are the following:

- Although the explanatory power of these regressions is limited (values of the R-squares), they are statistically significant, and we can be reasonably confident about the robustness of patterns identified by significant parameters;

- it confirms previous findings in this paper that there is no significant difference between genders in terms of distribution of the population by educational attainment;

- there is little difference between the age groups, except for the two ends of the age spectrum; individuals 16 to 25 years of age have a third of a school year less education than those aged 36-45; since full-time students at the time of the survey are not included in the population, this possibly indicates the influence of the drop-out phenomenon; however, we know from other sources, such as the School Leavers Survey and the School Leavers Follow-up Survey, that a significant proportion goes back to school and graduate in their early 20s;

- education of the parents makes a difference: individuals whose parents have not completed secondary school have on average one and a half year of education less than those whose parents graduated from high school; and individuals whose parents obtained a post-secondary diploma or degree have three-quarter of a year more education;

- when comparing the two generations, we observe that there may be a case for polarization of educational opportunities as those individuals of the younger age cohort whose parents have not completed their high school have about the same parameter estimate than the older generation, whereas those whose parents obtained a post-secondary education is significantly better for the younger age cohort;

- one obtains significantly higher educational achievements if the mother worked (about one year of additional education); this did not seem to affect significantly schooling of the older cohort;

- living in an urban setting allows better access to higher educational institutions and eases the road to higher educational attainment (this is, however, not significant for the two cohorts);

- province of birth — and likely the province where most of the education is received — does seem to make a difference: in Quebec, individuals have about one year less of education than in Ontario, while the difference is about two-thirds of a year less in the Atlantic provinces and close to half-a-year less in the West.

- Being born abroad does not influence years of schooling away from the Ontario average, but when we compare the two cohorts, a complementary picture emerges: the gaps just identified were much larger, especially for Quebec and the Atlantic provinces, among the older cohort, and have practically disappeared among the younger one.

- Immigrants among the older generation seemed to have a significant education advantage over Canadian-born, but this also seems to have evaporated over time.

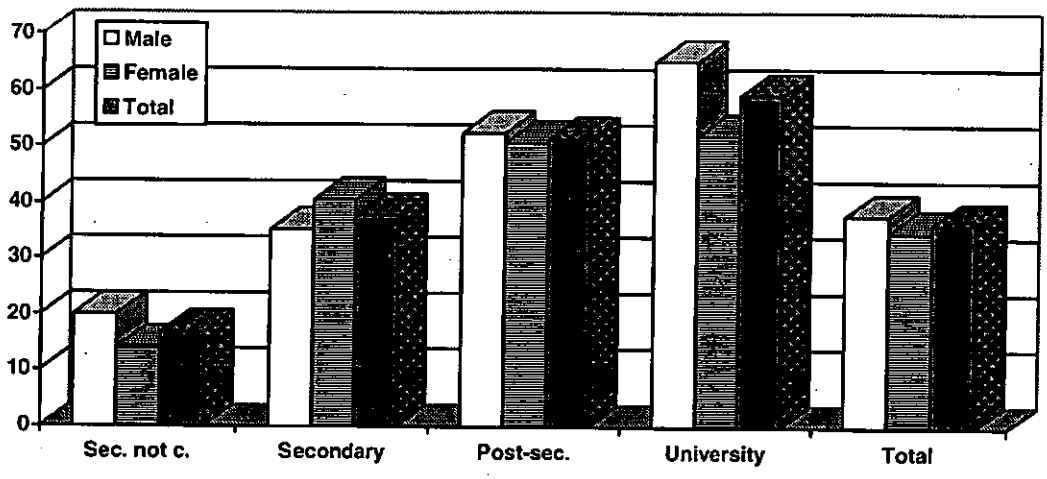
3.5 Opportunities for Further Training

As we know from other studies drawing from different sources of data, there is a strong link between getting further training opportunities in adult working life and the level of educational attainment.[15] This is an important issue to test with the IALS database as the benefits of further training may enhance one's intellectual capital to pass on to the next generation.

By and large, data represented in Figures 3.10 and 3.11 confirm the results obtained from other surveys. Women have a slightly lower participation rate in adult training, whereas other sources have shown no significant difference between the genders (Figure 3.10). With IALS, the difference in favour of men is even large at two levels of education, that is for those with the least education (those with less than a high school diploma) and for those with the highest level (those with a university education). At the high school level of education, there are proportionately more women than men having participated in adult education and training. This reflects, to a large part, the type of jobs held by women with these educational backgrounds.

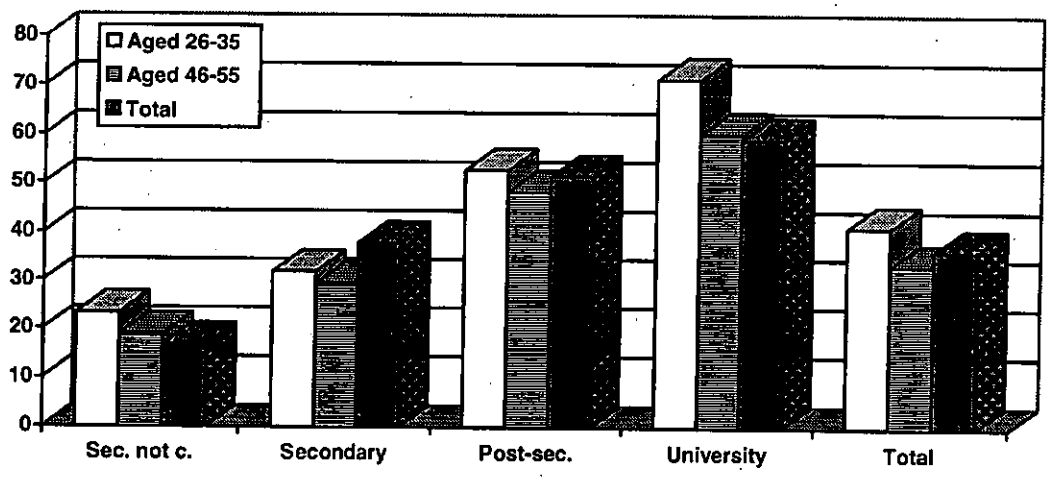
15 See for example Canadian Labour Market and Productivity Centre (1993) and de Broucker (1997).

Figure 3.10: Percentage of Individuals Having Participated in Adult Education and Training, by Level of Educational Attainment and Sex of Respondent



The participation in adult training by age groups is in conformity with previous findings (Figure 3.11). The take-up rate for the older generation is lower than for the younger generation, consistently for all levels of education. It confirms that training opportunities benefit most adults in mid-career (35 to 45 years of age), whereas both younger and older adults have slightly lower levels of participation in training.

Figure 3.11: Percentage of Individuals Having Participated in Adult Education and Training, by Level of Educational Attainment and Age of Respondent



Given the opportunities for further education beyond formal initial education, someone with low educational attainment cannot expect major enhancement of their educational credentials later on in life.

3.6 Closing Remarks of the Section

From the information presented in this section, we are in a position to propose the following answers to our three questions:

- How does the process of rising levels of educational attainment differ from an intergenerational perspective ?

The average level of education in the population increases over time, as 50% of the respondents had attained a higher level of education than their parent. However, precisely because a growing share of the population attains the highest level considered here (university), the possibility of moving upward is progressively shrinking. This is the main reason why only 48% of the respondents in the younger cohort experienced upward educational mobility, while this was the case for 58% of people in the older cohort.

- Does the family's intellectual capital tend to reproduce itself, thus making it difficult for the educational system to provide equal opportunities for all ? Has the pattern of educational mobility changed over time ?

Yes, inherited intellectual capital makes a considerable difference in children's achievements. Slightly more than one third of respondents attained a post-secondary level of education, but this population was not equally distributed by the level of education of the parents. If 56% of those with parents with post-secondary education attained this level of education, this was the case for only 22% of those whose parents did not graduate from high school.

Over time, the polarization seems to have increased: those who have parents with post-secondary education are in a better position to go on to post-secondary education (their probability rises to 69%, whereas it is only 58.5% for the older cohort). For the same two cohorts, the fate of those with less educated parents remained unchanged. However, if one restricts the comparison to only those attaining a university education, the contrast is even more pronounced. This supports the fact that the role of colleges help improve access to post-secondary institutions, especially for those with minimal inherited intellectual capital. The school system does not appear to have provided equal opportunities to people of different educational backgrounds, at least in relative terms, over the past few decades.

4 Literacy Skills and Educational Attainment

Literacy skills provide another facet for explaining the relationship between the education of parents and that of children. It is also a factor likely to play a role in permitting access to further education opportunities in adulthood. If the first Canadian report on the data collected through IALS has outlined the correlation between educational attainment and literacy scores, it has also shown the existence of a wide range of scores associated with each level of education.

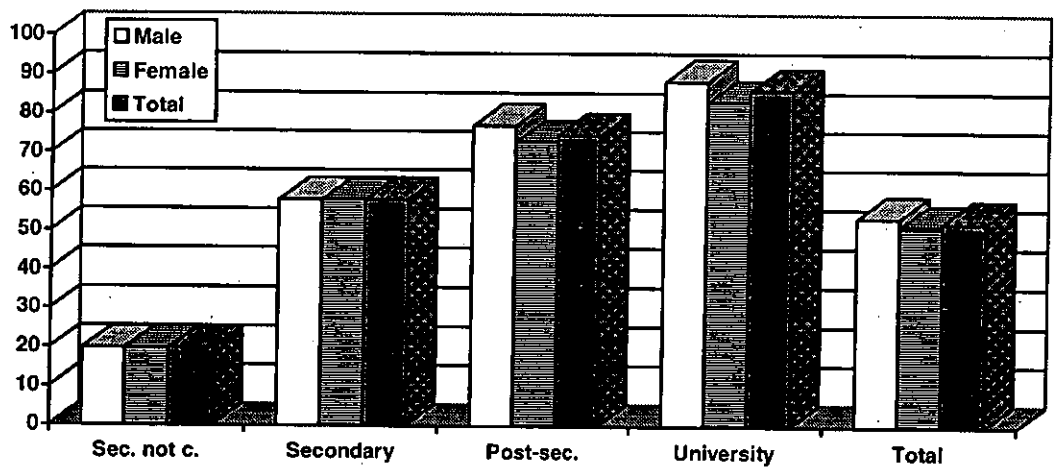
> *"... literacy's relationship to educational attainment is complex. While the association with education is strong, it also offers some surprising exceptions. For example, some adults have managed to attain a relatively high degree of literacy proficiency despite a low level of education. Conversely, there are some who have low literacy skills despite a high level of education."*[16]

In this section, we will gather the information necessary to answer the following question:

- Are literacy skills in line with educational attainment and do they play a role in upward educational mobility and in getting access to further training opportunities ?

Figure 4.1 below illustrates that, in general, the literacy level increases with the level of educational attainment. There does not seem to be any significant difference between men and women in this regard.

Figure 4.1: Percent Distribution of Respondents Having Higher Skills,[17] for Each Educational Attainment Level and Sex of Respondent



The fact that the skill levels are generally slightly lower for the older generation than the younger one, as shown in Figure 4.2 below, may be due either to a lower initial level of skills or to a depreciation of skills over time when these skills are not used regularly in day-to-day activities[18]. The generational differences are more apparent at both extremes of the education spectrum. The older generation having attained a

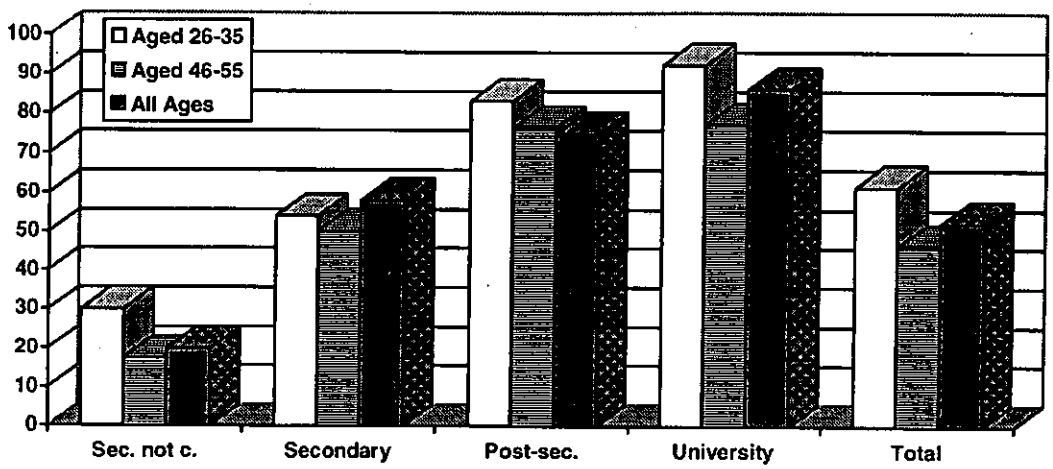
16 Statistics Canada (1996), p. 12. The correlation coefficient for document literacy skills and education was found to be 0.57. This implies that 43 percent of the variations in document literacy may be attributable to other factors than education. (p.24).

17 Higher skills are defined by achieving levels 3, 4 and 5 in document literacy.

18 See Statistics Canada (1996), p. 37.

university level of education may be more removed from their studies and thus have less of a chance of making use of their skills.

Figure 4.2: Percent Distribution of Respondents Having Higher Skills, for Each Educational Attainment Level and Age of Respondent



One of the statement made earlier is that a number of people with high levels of education may have low levels of literacy skills and people with low levels of education may have high levels of skill acquisition. Figure 4.3 demonstrates that, on the whole, variations do exist; they are decreasing with higher levels of education. They are also somewhat higher for the older generation. This seems to confirm the loss of the skills by a number of individuals in that age bracket in an environment not prone to maintaining skill levels of individuals. The decline for the younger cohort is less pronounced than for the older generation. This suggests that, over time, the variations in literacy levels are likely to decrease as there is a general increase of educational attainment in the population through better educated young cohorts.

Figure 4.3: Variation in Document Literacy Level[19], by Educational Attainment and Age of Respondent

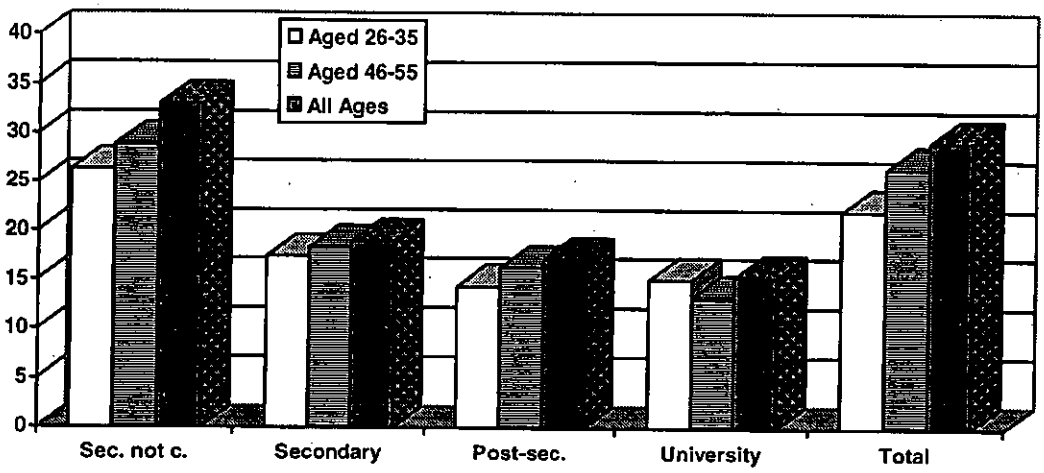
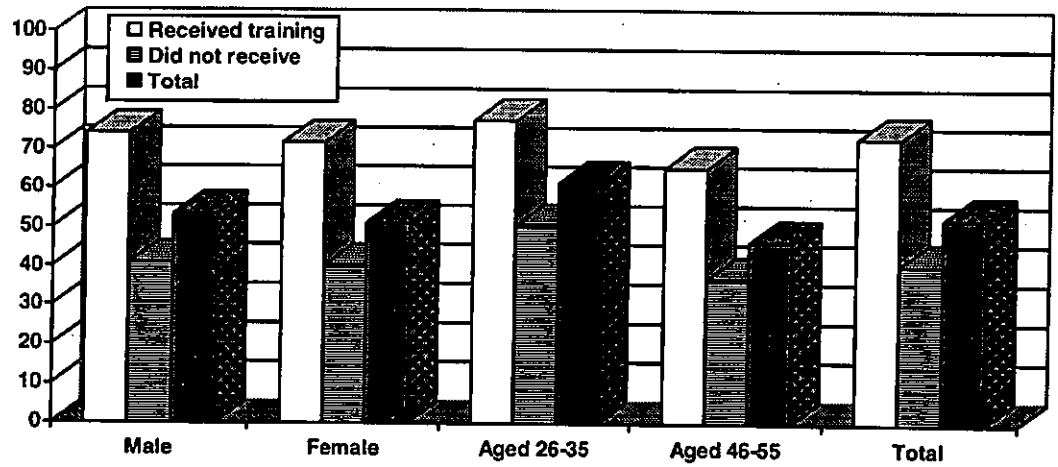


Figure 4.4 illustrates that individuals who participated in adult training are about 26% more likely to be at the highest level of literacy than those who did not participate. The difference between men and women in this respect is small (25% versus 27%) as well as the difference between the two generations (19%). This is a further confirmation that adult training, in the way labour markets work, is not — or rarely — an instrument that allows workers with limited initial education and skills to improve substantially their educational situation.

Figure 4.4: Percent Distribution of Respondents Having Higher Skills, for Individuals Who Received Training and Those Did Not, by Sex and by Age



Finally, we proceed as in the previous section by analyzing some of the determinants of literacy in a controlled environment, using an ordinary least square regression of the document literacy scores aginst a number of relevant factors. These are basically the same as in the analysis of the number of years of schooling, with the addition of this variable (number of years of schooling) which, we have just seen, is a

19 Variations are expressed by the value of the coefficient of variation (CV).

clearly important determinant of the literacy level. Table 4.1 below shows the incidence of these factors on the literacy scores obtained by the respondents.

Table 4.1: Incidence of Various Factors on Document Literacy Scores

	Total Population[a]	Population 26-35 Years[b]	Population 46-55 Years[b]
Literacy score (base)	121.21*	160.87*	129.37*
MALE	5.14*	-2.32	9.20**
FEMALE	-	-	-
AGE16	15.44*		
AGE26	13.46*		
AGE36	-		
AGE46	7.73*		
AGE56	-1.87		
YEARSCH	11.53*	11.23*	10.57*
EDPARPRI	-10.62*	-19.44*	-6.93
EDPARSEC	-	-	-
EDPARPSC	-7.17*	-7.18	-30.64*
SESFATH	0.46*	0.34***	0.01
MOTHWORK	15.54*	4.01	16.22*
MOTHNOTWK	-	-	-
RURAL	9.54*	1.50	4.37
URBAN	-	-	-
OTHER	-24.91*	-19.87*	-3.69
ATLANTIC	-1.57	-9.77	7.54
QUEBEC	2.32	-6.44	13.00***
ONTARIO	-	-	-
WEST	5.25*	-6.63	15.60**
Adj. R-square	*0.503*	*0.3808*	*0.3936*
F	*314.621*	*52.599*	*34.344*
Observations	*4650*	*924*	*566*

[a] The base is the average document literacy score for women, 36-45 years of age, with zero year of education, whose parent with higher education had completed secondary school, whose father had an average SES (37.00), whose mother did not work, living in an urban area, and born in Ontario.

[b] The base is the average document literacy score for women, with zero year of education, whose parent with higher education had completed secondary school, whose father had an average SES (38.58 for the aged 26-35 and 35.98 for the aged 46-55), whose mother did not work, living in an urban area, and born in Ontario.

* significant at 99% level.

** significant at 95% level.

*** significant at 90% level.

The above table confirms that, *other things being equal*, young people achieve higher literacy scores than the older generation. The education of the respondent has a highly significant effect on literacy acchievement, and this effect is slightly higher for the younger generation than for the older one.

The fact that we take into account explicitly the education of the respondent takes away most of the effect of the parent's education. The variable *mother worked* is positively associated with higher literacy scores. Little variations are shown by province. The pattern observed for individuals born abroad is interesting: in the total population, there is a clear literacy deficit among those born abroad compared with those born in Ontario. This deficit is not apparent in the older generation, but much more in the younger one.

With this information on the relationships between literacy skills and education, we come back to our initial question and propose an answer to the following question:

- Are literacy skills in line with educational attainment and do they play a role in upward educational mobility and in getting access to further training opportunities ?

Undoubtedly, literacy skills are linked to educational attainment. Generally speaking, the higher the educational attainment, the higher the average level of literacy. However, there is a fairly wide dispersion

of literacy skills around the average at all levels of education. Such variations tend to be wider for older cohorts. This strongly supports the notion that literacy skills may depreciate when such skills are not used in daily activities.

A relationship exists between literacy skills and educational mobility. Respondents who have attained higher levels of education than their parents have higher literacy scores than those with no or downward educational mobility. This relationship may be interpreted in two, probably complementary, ways. Either a solid background is necessary to move up on the education ladder, or the progression along the scale of educational attainment is "naturally" accompanied by progress along the literacy scale as well.

Literacy is a strong secondary determinant of access to further training opportunities: at any given level of education, individuals with higher literacy skills have also a higher probability of participating in adult education and training courses.

5 Labour Market Outcomes and Education

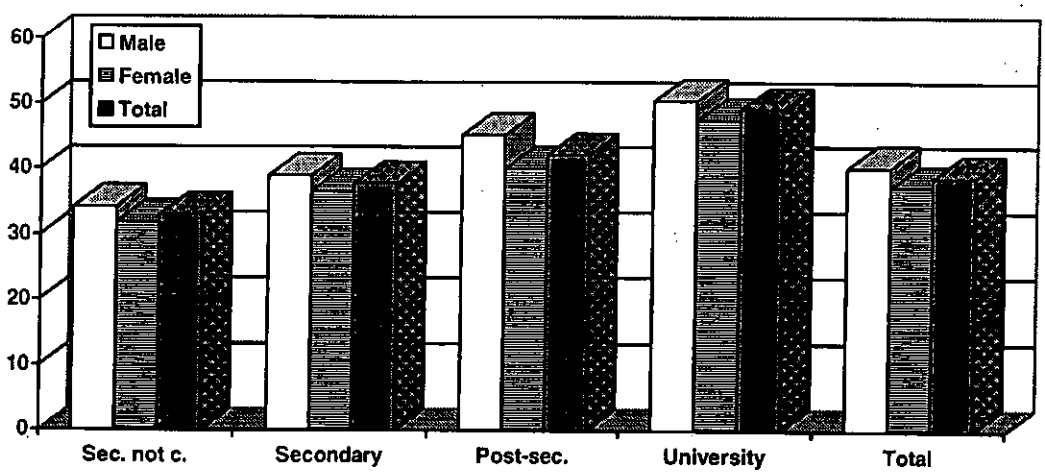
Labour markets in Canada and in other industrialized countries are undergoing major changes under the combined pressures of changing global distribution of economic activities and the concomitant effect on several aspects of the workers' environment, such as technological and organizational changes. These changes cannot occur without affecting the distribution of occupations among the workforce, nor without affecting the skills needed to operate within any given occupation. Taking stock of the main findings of the previous two sections, we will attempt, in this section, to answer the following questions:

- Does the labour market experience of parents affect their ability to pass on intellectual capital to their children ?
- Do literacy skills enhance occupational opportunities ?

In the following analysis, a cardinal variable that represents socio-economic scores of occupations (SES) is used to measure labour market outcomes. This allows us to alleviate the reliability problem derived from high sampling variability in some occupations and to have a synthetic, recognized measure of the "importance" of an occupation relative to others.[20]

Before we try to answer the above questions, let us examine the general relationships between education, literacy and occupations. First, let us examine the distribution of socio-economic occupational status by level of educational attainment of the respondents. Figure 5.1 shows that socio-economic occupational status increases significantly by level of education. The marginal benefits of education seems to rise as the level of education increases, here measured by the socio-economic occupational status scale. Individuals with a high school diploma gain about five points over those who did not complete high school. In comparison, individuals with a university degree gain seven points more than those with a non-university credential. Men seem to gain more than women in socio-economic occupational status as the level of education rises. Men and women gain about the same number of points in terms of status by going from uncompleted high school to university.

Figure 5.1: SES, by Level of Educational Attainment and Sex of Respondent



20 See Note 14 in Section 3.

The comparison using two cohorts provides us with another perspective on the relationship between education and labour market outcomes. At all levels of education, except the university level, the older cohort has an edge over the younger cohort in terms of socio-economic occupational status. The likely explanation for this situation is that the older generation draws its advantage from the accumulated experience, thus allowing them to benefit from promotions. This translates into greater upward occupational mobility for this age group.

At the university level the older generation is on a par with the younger cohort. If the highly educated young people cannot claim the seniority or experience to rise to top management jobs, their presence is well noted among the professionals and highly skilled technicians. As expected, the greater the level of education, the higher the difference in the advantage of the older cohort in terms of the socio-economic occupational status attained at the time of the survey. The exception to this rule is the group of people having acquired a university degree. In such a case, there is next to no difference between the two cohorts.

Figure 5.2: SES, by Level of Educational Attainment and Age of Respondent

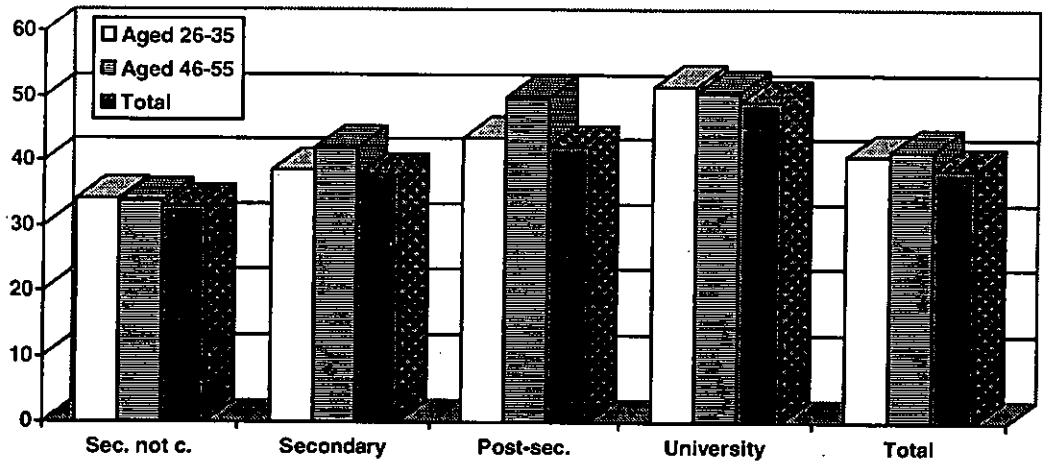
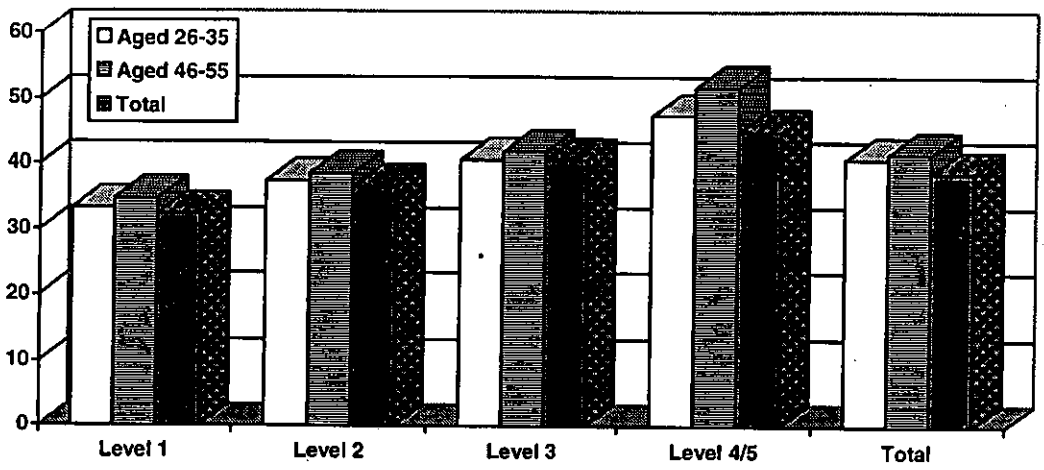


Figure 5.3 provides basically the same picture, describing the relationship between socio-economic occupational status and the level achieved in document literacy. For both cohorts, the largest occupational gains are obtained when the workers are at the highest level of literacy. High levels of education as well as high levels of literacy are well rewarded in the labour market, and there does not seem to be any substantial difference over time, other than what can be explained by the experience acquired with age or seniority.

Figure 5.3: SES, by Document Literacy Level and Age of Respondent



Now, with these general relationships in mind, let us address the first question proposed above: Does the labour market experience of parents affect intellectual capital passed on to their children ? To answer this question, we examine the situation from two different, but complementary angles. First, we observe whether at a given level of educational attainment of the father, the occupation of the father explains to a large part the educational attainment of the children. In other words, fathers with a low educational background may have had good opportunities in the labour market and risen to an occupation with a fairly high occupational status score. Would this situation be reflected in somewhat higher educational attainment of their children and does this contrast with the educational outcomes of children whose fathers had the same level of education and a job in an occupation with a lower socio-economic score ? Table 5.1 illustrates this point.

Table 5.1: Average SES of the Father, by Level of Educational Attainment of Respondent and of the Father

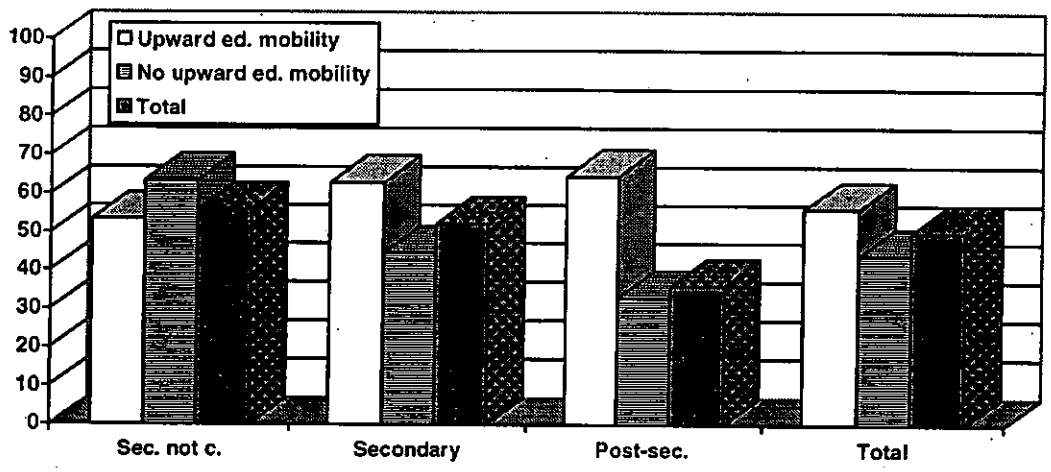
Education of the Father	Education of the Respondent				
	Secondary not completed	Secondary	Non-university post-secondary	University	Total
Post-secondary	43.6	47.6	46.8	49.8	47.9
Secondary	38.1	39.8	43.3	44.5	41.5
Secondary not completed	33.3	36.4	35.3	39.3	35.2
Total	34.4	38.5	39.7	44.4	38.2

In this table, the average socio-economic occupational status scores of fathers are calculated for each educational attainment levels of the fathers and of the respondents. Should the occupation of the father at a given level of educational attainment make a difference on the educational outcomes of the children, then we would expect that the average socio-economic occupational status score of the fathers at any given level of education of the fathers to be higher as the level of education of the respondent increases. As one can observe from the above table, this is actually the case. Respondents achieve higher educational outcomes concomitant with higher socio-economic occupational status scores of the fathers for any level of education of the father.

Next, we examine the interaction between occupational mobility and educational mobility. Would workers with a higher educational attainment than their parents also work in occupations of higher occupational status than their father's? Intuitively, we believe that this should be the case. However, it could also be that certain occupations require higher levels of education and, concurrently, that the general level of education rises as time goes by.

Figure 5.4 demonstrates that in most instances the probability of having an upward occupational mobility is higher in a situation where the respondents had achieved a higher level of education than their parents. But this does not preclude the fact that a significant proportion of those who did not experience an upward educational mobility still enjoy a rise in socio-economic occupational status. The probability of upward occupational mobility tends to decrease as the level of education of parents increases. This essentially reflects the fact we demonstrated earlier (Figures 5.1 and 5.2) that socio-economic occupational status rises as the level of education increases. Hence fathers with a higher level of education tend to be in occupations with higher status, leaving less room for their children (the respondents) to experience upward occupational mobility.

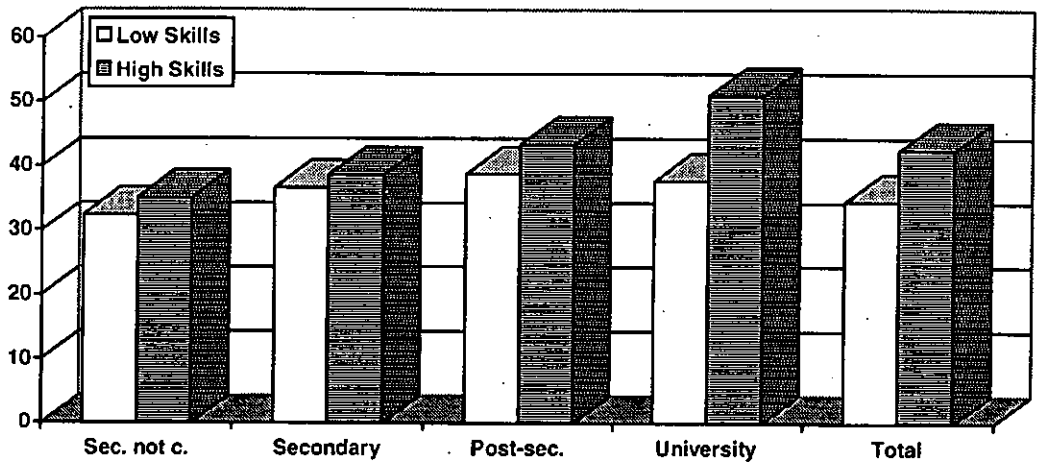
Figure 5.4: Probability of Having a SES Greater than Their Father's For Those Having Upward Educational Mobility and For Those Not Having Upward Educational Mobility, by Level of Educational Attainment *of the Parents*



Having established the above relations between occupations of the father and educational attainment of the respondent, we can now answer the first question raised in this section. The answer is 'Yes'. The labour market experience of parents, as measured by the occupational status of the father's occupation, has an influence on the children's educational attainment. Fathers with low levels of education who have managed to rise to high status occupations were better able to offer their children an environment where they could achieve higher levels of education. On the other hand, fathers who, despite their high levels of educational attainment, were in occupations whose status was below average for the level of education, were more likely to have children attain lower educational achievements.

Now we consider the second question raised at the beginning of this section: Do literacy skills enhance occupational opportunities ? Figure 5.5 leaves no doubt in our minds about the answer. The graph shows that socio-economic occupational status, as expected, increases with the level of educational attainment. This is further compounded by increasing literacy skills. The difference in socio-economic scores between low and high literacy skills also increases as the level of educational attainment increases. Hence, literacy skills play an important role in the determination of labour market outcomes.

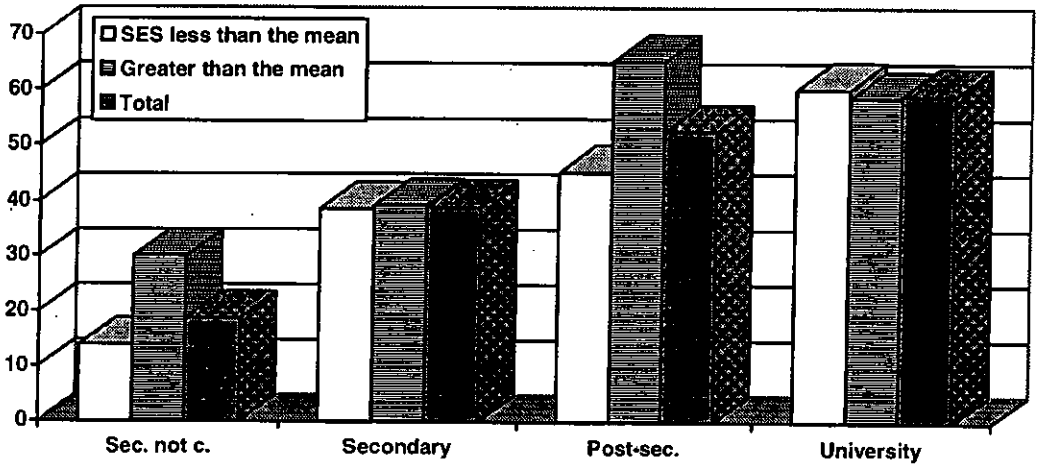
Figure 5.5: SES, by Level of Educational Attainment and Document Literacy Skill Level of Respondent



We have seen in the previous sections that educational attainment and literacy skills had a strong bearing on the probability that an individual would have further training opportunities. Figure 5.6 adds another element to that picture. Depending of other characteristics of the individual, any level of educational attainment may lead to a wide variety of occupational outcomes. This is attested by the dispersion of socio-economic scores by level of education.

What Figure 5.6 does is to relate the participation rate in adult education with the level of education and with whether or not the respondent was in an occupation with a higher socio-economic status than the average score for the given educational level. Clearly, those in higher than average SES occupation and that have low educational attainment or post-secondary non-university level are more likely to obtain training opportunities than others. Such an advantage does not appear among the high school graduates, nor among the university graduates.

Figure 5.6: Participation in Adult Education and Training, by Level of Educational Attainment and SES of Respondent



For those who benefit from higher participation in training and hold a job in a relatively high status occupation, the causality may go both ways They may have gained that status through training opportunities. They may, on the other hand, have obtained a relatively high-status job, thus increasing the likelihood of acquiring some training over and beyond what they would otherwise expect with their level of education. Further work is needed to examine such relationships in greater detail.

6 Offsprings: Education Support Strategies

Previous sections have shown the extent to which the level of education attained by the parents is a stepping stone towards achieving a higher or an identical level of education. Extending the analysis further in terms of the relationship between the respondent's characteristics and those of his parents imply looking at the relationship between the respondent's characteristics and those of his children. We hypothesize that the transmission of intellectual capital within the family is reflected in educational investment strategies that may materialize in different ways. The IALS database identifies among the respondents those who have children aged between 6 and 18 years, and presents a number of variables that one can relate to such educational strategies. In this brief section, we attempt to uncover a relationship between the level of education of respondents (now the parents) and a few variables considered as relevant proxies reflectors of a definite will of parents to further the education of their offsprings. Do parents with higher educational attainment demonstrate strategies that are known to influence positively success in school ?

To document this question we proceed with a series of logistic regressions that relate a specific educational activity to the level of educational attainment of the respondent and to a number of additional factors for which it seems relevant to control. The sample is restricted to the respondents who say that they have at least one child age 6 to 18 presently living with them (sample size = 1161, representing a population of 6.5 million). We use five educational activities or characteristics of the children's early experience: (1) whether parents buy the books their children read; (2) whether the children are limited by parents in the amount of time they are allowed to watch TV; (3) whether the children have a certain amount of time set aside each day for reading at home; (4) whether the children learned to read before grade one; (5) whether the children failed at school, i.e. cumulated at least two years behind the normal grade for their age.

The control variables used in the regressions are the following: the age group of the respondent, the level of education of the respondent, the family income (classified by quintiles), the level of education at which the children are attending school at present (elementary or secondary), whether the mother of the children worked, whether the family was living in an urban or rural setting. Table 5.1 provides the probabilities derived from the regressions.

Table 6.1: Probability of Having Time Set Aside To Read Books, of Child Watching Television, of Parents Buying Books, of Child Reading Before Grade 1 and of Child Failed at School[21]

Variable	Parents buy books	Child read before grade 1	Limit TV to children	Time set aside to read	Child failed at school
AGE16	84.5	37.9	89.5	68.2	0.0
AGE26	82.1	50.9	57.9	51.3	1.2
AGE36	68.3	51.9	54.8	47.3	3.1
AGE46	58.2	69.4	51.3	51.1	14.1
AGE56	61.4	14.1	50.6	42.6	25.9
EDUCPRI	62.0	58.7	48.3	49.8	4.0
EDUCSEC	59.6	48.0	55.9	42.9	3.4
EDUCPSC	77.7	54.3	62.2	42.1	1.6
EDUCUNI	92.5	54.1	59.2	67.1	0.9
FAMINC Q 1	62.4	42.8	59.9	45.3	8.6
FAMINC Q 2	87.7	51.0	56.9	56.7	9.7
FAMINC Q 3	63.9	49.9	53.7	48.1	3.2
FAMINC Q 4	72.4	41.5	66.7	42.5	5.4
FAMINC Q 5	71.5	72.2	44.8	53.0	0.1
EDCHILDPRI	79.3	55.6	64.1	56.2	3.0
EDCHILDOTH	57.3	48.5	39.4	36.7	1.6

21 Detailed regression results are given in Appendix.

MOTHERWORK	73.6	49.2	56.8	54.5	2.6
MOTHERNOTWK	70.5	61.1	53.4	38.7	2.0
RURAL	84.5	43.7	64.3	47.5	1.5
URBAN	68.7	55.6	53.4	49.9	2.7

We focus our comments of these results on the relevant relationship we are trying to uncover, between supportive attitudes manifested toward the education of children and the parents' level of education. Indeed, there are signs that confirm our hypothesis. The higher the level of education of parents, the more likely to buy books for children to read. The likelihood that a child will fail at school is substantially reduced when parents have a high level of education. The other relationship do not appear as strong as these two. A for time set aside to read, it seems that only university educated parents pay a lot more attention to it than all others whose behaviour cannot be differentiated. But it is interesting to note that, in general, more attention is paid to this when the child is in primary school, the formative years for learning to read. There does not seem to be a clear strategy towards limiting TV watching time, but one may assume that this time may be limited *de facto* by the time consumed in other activities such as reading, without any need for parental intervention. Again, parental intervention is more frequent when they have younger children, those enrolled in primary school. Learning to read before grade 1 is not associated with an attitude specific to parents of a certain level of education: about one child of every two start learning to read before entering grade 1, whatever the parents' educational attainment. One may see in this last finding an effect of the extension of pre-school experience that cuts across the educational background of parents.

We conclude from this succinct analysis of parents' educational strategies that parental support of children's education is merely a reproduction of their own educational background. These findings corroborates with the fact that unequal educational opportunities and outcomes are maintained in society. One limitation of this analysis is that we are unable to analyse the final educational outcome of those strategies, that is the children's educational attainment. The only conclusion that we obtain from our analysis is that parents with higher levels of education tend to set their children on a success path. [22]

[22] The recently developed National Longitudinal Survey of Children and Youth could help looking at this issue in greater depth.

7 Conclusion

In this paper, we examined some intergenerational aspects of the transmission of intellectual capital. Our point of departure was that inherited intellectual capital was likely to play a significant role in the ability of children to match or improve upon their parents' educational attainment. Our main conclusions are the following:

- There is substantial upward educational mobility, as about half the children attain higher levels of education than their parents.
- The rate of upward educational mobility is "naturally" declining as more people move to the highest level of education, thus reducing the number of children that can outstrip their level of education.
- Yet inherited intellectual capital makes a lot of difference given that it is much more difficult for children whose parents have not completed high school to attain college or university level than it is for children whose parents have obtained a university degree. However, there seems to be evidence that the expansion of the college system has provided opportunities for some to reach post-secondary education.
- The relative gap between children whose parents are at both extremes of the educational attainment spectrum does not seem to close as time goes by. There are even signs that the polarization of educational opportunities is on the rise.
- Literacy skills largely reflect educational attainment. However, at given levels of education, literacy scores show wide variations. These widen as age increases, indicating a possible loss of literacy skills when such skills are not put to use regularly.
- In addition to educational attainment, literacy is a significant predictor of one's participation in adult education and training.
- The predictability of one's educational attainment on the knowledge of parents' education can be balanced — to an extent — by the parents' labour market experience. Besides education, experience gained at working in some occupations may be an important addition in the transmission of intellectual capital.
- Literacy skills also enhance one's ability to move up the occupational ladder.
- Parents' educational investment strategies reflect their own educational background and the need to perpetuate their knowledge and education to their children. Parents with high levels of education adopt more often strategies to set their children on a success path than parents with less education.

Undoubtly, the family is an essential locus for the transmission of intellectual capital. The family can bring hope to some or it can perpetuate intergenerational inequities. Is the education system up to the challenge of providing education opportunities that so many obviously need ? Is the education system about to open up horizons to all ? A wide range of government policies touch on issues related to the importance of human capital for the development of our society and the success of our economy, such as education and labour market-related information and counselling, accessibility to higher education, income support for further education and training, adequate child care facilities, economic and employment security. Are these policies set with a perspective that caters to the needs of those whose horizon is limited by virtue of birth ?

Recently, a Canadian university locally advertised in those words:

> *"Not everyone inherit the family business.*
> *No one's about to hand you your future."*

Rather, it seems that one's future is, at least to a large part, in the hands of parents.

Appendices

Table A-1: Percentage of Respondents Not Knowing or Not Having Stated the Level of Education of Their Parents, by Gender and Level of Education of Respondents

	Father's Education				Mother's Education			
	Male		Female		Male		Female	
	Row %	Col %	Row %	Col %	Row %	Col %	Row %	Col %
Prim. not c.	13.06	21.92	6.71	21.61	8.19	14.07	8.82	21.58
Primary	10.76	24.55	15.73	25.66	11.32	26.45	19.56	24.24
Sec. not c.	26.61	25.68	36.60	34.72	23.32	23.05	28.95	20.87
Secondary	36.71	16.95	24.91	13.48	40.33	19.06	29.12	11.97
Non-Univ.	7.96	8.66	10.17	9.22	14.93	16.61	9.80	6.75
University	4.19	3.93	4.47	5.63	1.22	1.17	1.80	1.72
Not Stated	0.70	12.23	1.41	14.17	0.69	12.23	1.94	14.75
Total	100.00	15.93	100.00	17.18	100.00	16.30	100.00	13.05

Table A-2: Determinants of Buying Books For Children

Variable	Estimate	Error	Chi-Square	Prob.	Estimate	Odd Ratio
INTERCEPT	1.2030	0.2705	19.7762	0.0001		
AGE16	-0.9301	1.0664	0.7607	0.3831	-0.0449	0.395
AGE26	-0.7521	0.1959	14.7462	0.0001	-0.1992	0.471
AGE46	0.4374	0.2482	3.1047	0.0781	0.0851	1.549
AGE56	0.3071	0.5219	0.3463	0.5562	0.0247	1.360
EDUCPRI	-0.1002	0.2127	0.2218	0.6377	-0.0242	0.905
EDUCPSC	-0.8582	0.2452	12.2528	0.0005	-0.1809	0.424
EDUCUNI	-2.1179	0.2934	52.0972	0.0001	-0.4622	0.120
J5INC1	0.0642	0.2694	0.0568	0.8116	0.0120	1.066
J5INC2	-1.3888	0.2830	24.0843	0.0001	-0.2965	0.249
J5INC4	-0.3922	0.2384	2.7068	0.0999	-0.0862	0.676
J5INC5	-0.3508	0.2469	2.0184	0.1554	-0.0820	0.704
EDCHPRI	-1.0457	0.1795	33.9297	0.0001	-0.2746	0.351
MOTHWORK	-0.1549	0.1746	0.7869	0.3750	-0.0399	0.857
RURAL	-0.9048	0.2197	16.9681	0.0001	-0.2029	0.405
Concordant	63.30%	Somers' D	0.273	Observations		934
Discordant	36.00%	Gamma	0.275	Chi-Square	Prop. Odds	
Tied	0.70%	Tau-a	0.106	-2 Log L	Intercepts only	1179.218
Pairs	168360	c	0.637	-2 Log L	With covariates	950.761

Note: Results are reported with 99% significance level, unless otherwise noted as: * significance at 95%; ** significance at 90%; *** not statistically reliable.

Table A-3: Determinants of Having Children Reading Books Before Grade 1

Variable	Estimate	Error	Chi-Square	Prob.	Estimate	Odd Ratio
INTERCEPT	0.0144	0.2426	0.0035	0.9528	.	.
AGE16	0.5687	0.7961	0.5104	0.4750	0.0275	1.766
AGE26	0.0409	0.1600	0.0655	0.7980	0.0108	1.042
AGE46	-0.7396	0.2400	9.4995	0.0021	-0.1440	0.477
AGE56	1.8877	0.5983	9.9535	0.0016	0.1520	6.604
EDUCPRI	-0.4329	0.1940	4.9793	0.0257	-0.1046	0.649
EDUCPSC	-0.2547	0.2072	1.5107	0.2190	-0.0537	0.775
EDUCUNI	-0.2462	0.2123	1.3452	0.2461	-0.0537	0.782
J5INC1	0.2871	0.2464	1.3576	0.2439	0.0537	1.333
J5INC2	-0.0415	0.2151	0.0373	0.8469	-0.0089	0.959
J5INC4	0.3390	0.2080	2.6551	0.1032	0.0745	1.404
J5INC5	-0.9571	0.2194	19.0260	0.0001	-0.2238	0.384
EDCHPRI	-0.2842	0.1662	2.9222	0.0874	-0.0746	0.753
MOTHWORK	0.4828	0.1554	9.6479	0.0019	0.1244	1.621
RURAL	0.4770	0.1796	7.0522	0.0079	0.1070	1.611
Concordant	56.90%	Somers' D	0.15	Observations		934
Discordant	41.90%	Gamma	0.152	Chi-Square	Prop. Odds	.
Tied	1.20%	Tau-a	0.075	-2 Log L	Intercepts only	1292.084
Pairs	217605	c	0.575	-2 Log L	With covariates	1197.161

Note: Results are reported with 99% significance level, unless otherwise noted as: * significance at 95%; ** significance at 90%; *** not statistically reliable.

Table A-4: Determinants of Having Limiting Television to Children

Variable	Estimate	Error	Chi-Square	Prob.	Estimate	Odd Ratio
INTERCEPT	0.7286	0.2463	8.7490	0.0031	.	.
AGE16	-1.9449	1.1558	2.8314	0.0924	-0.0940	0.143
AGE26	-0.1245	0.1650	0.5695	0.4505	-0.0330	0.883
AGE46	0.1430	0.2352	0.3696	0.5432	0.0278	1.154
AGE56	0.1721	0.4999	0.1185	0.7307	0.0139	1.188
EDUCPRI	0.3065	0.1970	2.4197	0.1198	0.0741	1.359
EDUCPSC	-0.2588	0.2164	1.4304	0.2317	-0.0545	0.772
EDUCUNI	-0.1349	0.2111	0.4084	0.5228	-0.0294	0.874
J5INC1	-0.2546	0.2532	1.0110	0.3147	-0.0476	0.775
J5INC2	-0.1332	0.2219	0.3605	0.5482	-0.0284	0.875
J5INC4	-0.5496	0.2181	6.3493	0.0117	-0.1207	0.577
J5INC5	0.3541	0.2139	2.7397	0.0979	0.0828	1.425
EDCHPRI	-1.0085	0.1659	36.9464	0.0001	-0.2648	0.365
MOTHWORK	-0.1385	0.1558	0.7900	0.3741	-0.0357	0.871
RURAL	-0.4524	0.1826	6.1373	0.0132	-0.1014	0.636
Concordant	66.10%	Somers' D	0.33	Observations		934
Discordant	33.00%	Gamma	0.333	Chi-Square	Prop. Odds	.
Tied	0.90%	Tau-a	0.161	-2 Log L	Intercepts only	1284.363
Pairs	212464	c	0.665	-2 Log L	With covariates	1180.844

Note: Results are reported with 99% significance level, unless otherwise noted as: * significance at 95%; ** significance at 90%; *** not statistically reliable.

Table A-5: Determinants of Setting Time Aside to Read With Children

Variable	Estimate	Error	Chi-Square	Prob.	Estimate	Odd Ratio
INTERCEPT	1.3488	0.2523	28.5807	0.0001		
AGE16	-0.8730	0.8289	1.1092	0.2923	-0.0422	0.418
AGE26	-0.1604	0.1628	0.9710	0.3244	-0.0425	0.852
AGE46	-0.1535	0.2339	0.4307	0.5116	-0.0299	0.858
AGE56	0.1910	0.4958	0.1484	0.7001	0.0154	1.210
EDUCPRI	-0.2756	0.1941	2.0153	0.1557	-0.0666	0.759
EDUCPSC	0.0318	0.2050	0.0241	0.8765	0.0067	1.032
EDUCUNI	-0.9997	0.2143	21.7570	0.0001	-0.2182	0.368
J5INC1	0.1139	0.2504	0.2068	0.6493	0.0213	1.121
J5INC2	-0.3437	0.2200	2.4419	0.1181	-0.0734	0.709
J5INC4	0.2278	0.2113	1.1621	0.2810	0.0500	1.256
J5INC5	-0.1945	0.2143	0.8234	0.3642	-0.0455	0.823
EDCHPRI	-0.7948	0.1681	22.3544	0.0001	-0.2087	0.452
MOTHWORK	-0.6384	0.1551	16.9402	0.0001	-0.1646	0.528
RURAL	0.0951	0.1783	0.2847	0.5937	0.0213	1.100
Concordant	58.50%	Somers' D	0.178	Observations		934
Discordant	40.60%	Gamma	0.18	Chi-Square	Prop. Odds	
Tied	0.90%	Tau-a	0.089	-2 Log L	Intercepts only	1294.615
Pairs	218053	c	0.589	-2 Log L	With covariates	1194.725

Note: Results are reported with 99% significance level, unless otherwise noted as: * significance at 95%; ** significance at 90%; *** not statistically reliable.

Table A-6: Determinants of Having Children Failing School

Variable	Estimate	Error	Chi-Square	Prob.	Estimate	Odd Ratio
INTERCEPT	3.3098	0.5173	40.9323	0.0001		
AGE16	25.3140	198927	0.0000	0.9999	1.2232	999
AGE26	0.9540	0.3685	6.7023	0.0096	0.2527	2.596
AGE46	-1.6489	0.3587	21.1319	0.0001	-0.3210	0.192
AGE56	-2.4036	0.6737	12.7304	0.0004	-0.1935	0.090
EDUCPRI	-0.1653	0.3383	0.2388	0.6250	-0.0400	0.848
EDUCPSC	0.8142	0.4732	2.9613	0.0853	0.1716	2.257
EDUCUNI	1.3774	0.6009	5.2538	0.0219	0.3006	3.965
J5INC1	-1.0572	0.4598	5.2858	0.0215	-0.1976	0.347
J5INC2	-1.1847	0.4164	8.0927	0.0044	-0.2529	0.306
J5INC4	-0.5470	0.4583	1.4248	0.2326	-0.1202	0.579
J5INC5	3.1930	1.2434	6.5942	0.0102	0.7468	24.362
EDCHPRI	-0.6509	0.3258	3.9918	0.0457	-0.1709	0.522
MOTHWORK	-0.2990	0.2926	1.0440	0.3069	-0.0771	0.742
RURAL	0.5711	0.3514	2.6415	0.1041	0.1280	1.770
Concordant	67.90%	Somers' D	0.373	Observations		934
Discordant	30.60%	Gamma	0.379	Chi-Square	Prop. Odds	
Tied	1.40%	Tau-a	0.052	-2 Log L	Intercepts only	516.539
Pairs	61273	c	0.687	-2 Log L	With covariates	392.377

Note: Results are reported with 99% significance level, unless otherwise noted as: * significance at 95%; ** significance at 90%; *** not statistically reliable.

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