ASSESSING THE IMPORTANCE OF CULTURAL CAPITAL

ON POST-SECONDARY EDUCATION ATTENDANCE IN CANADA

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Abstract

This paper extends the current literature on access to post-secondary education by investigating the role played by various family background characteristics related to the home environment and family habits and behaviours. Exploiting the extraordinary richness of the Youth in Transition Survey in this regard, we include whether the family ate dinner together, whether they discussed current affairs, and how often their children went to concerts – and if so, what *kind* of concerts. Many of these factors are found to have a significant relationship with attending post-secondary education, university in particular. Furthermore, these factors are in addition to – and at least to some degree independent of – more conventional influences such as parental education and family income. With appeal to the paradigm of "cultural capital" -- which refers to the knowledge, experiences, and connections which help individuals succeed in life – these results indicate how advantages in accessing higher levels of education accrue to those from families that are rich in this kind of asset, while others are left behind.

Keywords: Canada, Post-secondary Education, Cultural Capital

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**Assessing the Importance of Cultural Capital on Post-secondary
Education Attendance in Canada**

I. Introduction

There has been a general evolution in the thinking regarding the factors that are of importance in determining attendance in post-secondary education (PSE) throughout the world. Generally, the development of the literature has gone from studying the importance of financial factors (such as family incomes, tuition levels and student assistance) to "softer" influences such as whether parents read to their children. This thread of research has been greatly aided (indeed made possible) by the availability of better longitudinal data sets which have allowed researchers to track the progress of individual students during high school, during PSE (if so chosen), and following completion of their terminal level of education.

The prominence of this research has coincided with the concern in policy circles that remaining competitive in the global economy increasingly depends on embracing the knowledge economy (Florida and Spencer, 2015). Driven by anxieties about increasing trade liberalization and the rapid economic development of countries such as India and China, educational policy rather than industrial policy is increasingly becoming the area to watch. The argument is that the smokestack model of industrial development dependent on manufacturing – popular since the industrial revolution – is outdated, and that the continuing prosperity of the West will be the result of the knowledge economy and that brains – not brawn – will prevail.

Central to the knowledge economy is (obviously) knowledge and the human capital necessary to use and generate knowledge. PSE institutions in Canada and elsewhere are tasked with disseminating an ever-growing body of knowledge to a young population. This assumes, of course, that young Canadians are able to access these institutions and ultimately complete their programs of choice.

Since financial factors are no longer central to the debate about access to PSE, the policy debate has been refocused to concentrate on the factors that are important. To keep the current stock of education in the economy constant as the older generation retire, an increasing proportion of the declining youth population will on average have to attain higher levels of education. Additionally,

there is an equality concern raised by the shift to the knowledge economy: Individuals without the skills provided by PSE may not be able to compete effectively in the labour market, increasing the inequality in our society. Given these factors, the question becomes: How do we get students in the doors of our PSE institutions?[1]

In Canada, we know that factors such as parental education, innate student abilities, attitudes towards school, work ethic, schooling aspirations, etc. are all correlated with participation in colleges and universities (see Finnie, Mueller, Sweetman and Usher (2008) and Finnie, Frenette, Mueller and Sweetman (2010) and the papers therein), but we are less certain about the precise mechanisms through which these factors work. For example, is high parental education inherently important, or are there other factors correlated with education that parents may offer their children? If there are positive correlations then estimates of the effect of parental education will be biased upwards and thus tend to overestimate its importance. More importantly, for policy purposes, while it is difficult to raise the education levels of existing parents, it may be possible for all to imitate the actions of highly educated parents (e.g., regularly talking to children about current events) in order to better prepare their children for participation in PSE and ultimately the knowledge-based economy that awaits them on the other side of graduation.

The purpose of this research is to further understand the importance of cultural capital in determining one dimension of opportunity: access to PSE. This research represents a first attempt at addressing importance of cultural capital correlates on PSE attendance in Canada. As such, the narrative that follows is largely descriptive and is intended to help identify cultural factors that may directly influence the decision to attend PSE. We leave a more detailed analysis, including the identification of causality, to future work.

To detect these cultural capital influences, we use the Youth in Transition Survey – Cohort A (or YITS-A). These data follow students from the time they are 15 years of age (Cycle 1) up until the time there are 21 years of age (Cycle 4). This is a time when most young Canadians are attending or are considering attending PSE. Furthermore, and most importantly for our

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[1] In this paper we will be limiting our discussion to PSE access. The other important factor is completion – called retention by institutions hoping to keep admitted candidates until program completion, or persistence in the academic literature on the subject. We acknowledge the importance of this, but will remain silent on the issue throughout the remainder of the paper.

purposes, these data are rich in the background characteristics of the student herself, her family and household characteristics, as well as information on her experiences and performance in secondary education (i.e., high school). The YITS contains a number of "cultural capital" indices and family background variables (including family income and parental income) which will assist us in isolating the influences of cultural factors from other factors in the PSE attendance decision. By including both sets of regressors, we are able to determine the direct versus indirect associations of family background (including cultural capital) on the decision to attend PSE.

The paper is organized in the usual way. The next section briefly reviews the relevant literature. Sections III and IV discuss our methodology and the data used in the estimation of the models. The main results of the estimations are presented in Section V. The final section concludes and discusses policy recommendations.

II. Literature Review

Recently there have been a number of Canadian studies that have gone beyond ascribing much importance to financial factors (e.g., tuition, family income, etc.) in the decision of young Canadians to pursue PSE. The consensus of research by Butlin (1999), Drolet (2005), Finnie and Mueller (2008a,b), among others, is that parental education is a much better predictor of PSE participation than parental income. Perhaps more importantly, studies such as the one by Finnie, Lascelles and Sweetman (2005) show that high levels of parental education have both direct and indirect effects on the probability of children attending PSE. For example, higher educated parents may be more apt to provide (and read) books to their children, to expose them to cultural events such as music and museums, or be better equipped to engage their children in meaningful conversations about current events. All of these may increase the interest in young people regarding PSE attendance.

Indeed, authors such as Cameron and Heckman (2001) argue that it is the long-term impact of family background that is important in determining college (i.e., university) attendance, not short-term influences such as financial aid. Carneiro and Heckman (2002) too support the paramount importance of long-term factors, such as family background, over short-term factors,

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such as credit constraints. With the exception of these and a handful of other recent studies of this generation which address the importance of family background on access to PSE (e.g., Cameron and Heckman, 1998; Ermisch and Francesconi, 2001; Keane and Wolpin, 2001; Cunha, et al., 2006; Heckman, 2007), relatively little has been done on the importance of family background on the probability of youth accessing PSE. Even less has been done – at least in the economics literature – on the importance of so-called "soft" background factors such as attending cultural events and the genres of reading materials used by young people. Childs, Finnie and Mueller (2010) address some of these factors and show that many – such as communications with children, attending cultural activities, and engagement in reading – are positively associated with PSE attendance, especially attendance at university.

While there has been strong growth in the in the PSE participation of those from low-income families, there is still evidence that the participation rates of those from middle- and upper-income families remain higher (Corak, Lipps and Zhao, 2003; Drolet, 2005). Similar results are obtained by comparing those from families with high and low levels of parental education (Finnie, Laporte, and Lascelles, 2004). While the process of changing family incomes and levels of parental education is a slow process, leading to convergence of participation rates only over time, the theme of this research is to ascertain if there may be other factors that families of higher socio-economic status possess or perform which also enhance the probability of attending PSE. In the sociology literature, this propensity to act, perceive and think in a certain way is referred to as *habitus* and is imparted on young people through socialization over time (see Auclair, et al. (2008), Grayson (2011) and Jaeger (2009) for recent reviews of this literature). Stated simply, there may be factors which are relatively easy to change and that may impart on a young person the values which will enhance the probability of PSE attendance. For example, it is well known that children growing up in households with many books attain higher levels of schooling than those in households with few books, and this relationship holds in both rich and poor nations, and the relationship can be as great as having university educated parents over uneducated parents (Evans, et al., 2010). The implication is that increased access to – and the use of – reading material may be a good investment.

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This paper attempts to fill this knowledge gap by providing evidence of the importance of these cultural capital influences on accessing PSE, especially university. Although novel to the economics profession, the sociology literature discusses the importance of cultural capital in perpetuating social inheritance.[2] Cultural capital refers to knowledge, experiences, connections, etc. which help individuals succeed in life. In our case, this means successful entry into PSE. In economists' lingo, the inter-generational transfer of education (social inheritance) could be the result of a number of household background factors (cultural capital). And it is the lack of this cultural capital which may prohibit individuals from assessing post-secondary education, thus propagating inequality in educational attainment.[3]

The policy implication in this is that children from families that do not possess high levels of education nor income – the former being an especially strong correlate of university attendance – may still be able to overcome these disadvantages in other ways. For example, De Graaf, et al. (2000) find that parental reading behaviour is a much stronger predictor of children's educational attainment than participation in "beaux arts" such as attending ballet performances or art galleries. Furthermore, parental reading behaviour has a stronger positive impact for those whose parents have low levels of education. Their results support the cultural mobility theory of DiMaggio (1982) more than the cultural reproduction theory of Bourdieu (1973).

Perreira, et al. (2006) find that cultural capital can be useful in lowering high school drop-out rates, and can mitigate the negative impact of low parental levels of education among certain first-generation immigrants. Lehmann (2007) uses qualitative methods to argue that first-generation students may be more likely to leave university in Canada without graduating since they felt they didn't fit into the university (i.e., they may have lacked the necessary cultural capital), despite having solid academic performance. Entorf and Tatsi (2009) use data from Germany and the UK and find that the lower PISA mathematics scores among immigrants are largely accounted for by both the lower socioeconomic backgrounds of parents and cultural

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[2] Although cultural capital is not an economic construct, more attention is being paid to the impact of culture on economic outcomes. See Guiso, et al. (2006) and Fernández (2010) for some recent examples of this work.
[3] The concept of cultural capital is very closely linked to that of identity economics (Akerlof and Kranton, 2000, 2002, 2010), although the later tends to give more discussion to both the direct and the opportunity costs of changing one's identity. Two recent papers commissioned by the Canadian Millennium Scholarship Foundation discuss the importance family background and cultural capital factors – largely from a sociological point of view – both in general (Kamanzi, et al., 2009) and as related to first-generation students (Auclair, et al., 2008).

capital at home. Jaeger and Holm (2007) provide evidence of the importance of cultural (and social) capital in determining educational outcomes in Denmark, a country which is part of the "Scandinavian mobility regime" in which economic factors play a smaller role in such outcomes compared to other Western countries. Using U.S. longitudinal data and differencing out family and individual fixed effects, Jaeger (2011) says that the cultural capital effects on children's tests scores are diminished compared to studies were unobserved heterogeneity is not controlled, but still remain positive and significant. He also finds that the type of cultural capital can have different effects in families of different socio-economic status.

Evidence for Germany (Krenz, 2010) shows that the educational attainment of an individual depends on cultural capital and this effect is independent of parental education, social capital, skills, motivation, etc. For Ireland, Ryan, McCarthy, and Newman (2007) estimate that income has no significant effect on tertiary level education when wealth and cultural capital are controlled.

Like Tramonte and Willms (2010) we adopt a broad definition of cultural capital which, in their words, includes static and dynamic or relationship forms: the former consisting of the "highbrow" types of items which are usually contained in the definition of cultural capital – static or continuous forms such as music lessons, theatre attendance, etc. – and the latter which is concerned with the cultural interactions and communications between parent and child.[4] It is dynamic since it changes and evolves over time and requires and investment on the part of both parent and child. They find that both types of cultural capital are important positive correlates of reading literacy (i.e., PISA reading scores), a sense of belonging at school, and higher occupational aspirations. Relational cultural capital, however, is the quantitatively more important of the two.

Jaeger (2009) uses Danish data and finds empirical support for the basic theoretical arguments of Bourdieu. Namely, that for cultural capital to promote educational success three

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[4] Their static cultural capital index is comprised of detailed questions on the number of books in the home, how often museums, art galleries, opera, etc. are frequented, and the presence of musical instruments, classical literature, books of poetry, and works of art in the home. The relational cultural capital index is based on detailed questions about children discussing social and political issues, as well as books, films, and television shows with their parents, discussions about school, or just time spent talking, as well as questions about the enjoyment in discussing books with others and going to a bookstore or a library.

conditions must hold: (1) parents must possess cultural capital; (2) they must transfer it to their children; and (3) the children must absorb the cultural capital and convert it into educational success. The use of Danish data is particularly useful since the country has a narrow income distribution, free tuition, and a secondary education system that is meritocratic, all of which reduce the importance of financial factors on secondary school attendance. Elementary school in Denmark goes to about age 16, thereafter students must decide whether to terminate their schooling (about 20 percent of students choose this option), continue into a vocational secondary stream (30 percent) or continue into an academic stream (50 percent). According to Jaeger, the vocational stream is "cultural capital light" and the academic stream is "cultural capital heavy".

In a similar vein, Esping-Andersen (2004) argues that public policy can be effectively used to break the link between class origins and cognitive and educational inequalities. Although he does show the intergenerational transfer of education is alive and well (which implies that the policy goal of equal opportunities is not possible at least through "equality" of access to education), he also argues that early cognitive development can be changed, thus effectively untying the "Gordian knot" of social inheritance. In a later paper, Esping-Andersen (2008:23) argues that there are four mechanisms through which children's opportunities are transferred from parents: family income, family structure, parental dedication, and cultural capital – defined as "the learning milieu within which children grow up."

Furthermore, there are two mechanisms through which this cultural capital can be translated. One is through early childhood stimulation (which establishes the cognitive skills of children) and the other occurs much later when youth are making education choices. The real challenge according to Mare (1993) is overcoming class origins in transitioning from one level of education to the next. Once this transfer has been made, the influences of family on performance and education attainment wane. For our purposes, this implies that accessing college or university is a key step in the educational attainment process and, once made, the class differences in performance or attainment weaken.

Even the Organization for Economic Co-operation and Development (OECD) has recognized the importance of culture in the educational success of children, releasing a guide for

parents (OECD, 2012) which outlines the things that parents can do help their children to be successful at school. The report notes that education begins at home when children are born and should continue after children have entered school. Well-known correlates of educational success such as reading to young children are emphasized, but other-lesser known – and cultural factors – such as talking to older children about social and political issues, films, books and movies are all related to better school performance. Moving beyond schooling, Brunello, Weber, and Weiss (2012) argue that the number of books in a child's home at age 10 is a good predictor of higher returns to education and hence lifetime income. The authors conclude (p. 16): "Access to books when young seems to reflect home skill formation in cognitive and socio-emotional skills, something that has been emphasized as an important factor of economic success in life."

This paper digs deeper into the importance of cultural capital. Compared to earlier Canadian studies by Tramonte and Willms (2010), Childs, Finnie and Mueller (2010), and Grayson (2011), which use aggregates of various cultural capital variables, we disaggregate these indices into their components, thus providing us with a more profound understanding of the factors that are related to positive PSE attendance outcomes. While many studies have addressed a narrow range of cultural capital influences on various educational outcomes, this research is unique in the breadth of the cultural capital variables which are related to PSE access.

III. Methodology

This research uses a standard empirical model for estimating access to PSE, where access is taken to be a function of a variety of different sets of influences. We work from a small, basic set of regressors which have been shown repeatedly in the literature to be influential on the PSE attendance decision, and build the empirical model to include a more comprehensive set of regressors which represent the various types of soft influences discussed previously.

The model is expressed as follows:

$$Y = X_1\beta_1 + X_2\beta_2 + \mu$$

where Y is the access measure of interest (attending college, attending university, or not attending either), the X_i are vectors of covariates that influence Y, the β_i are the coefficients associated with each set of X, and μ is the classical stochastic error term.

X_1 comprises the most conventional family background variables such as family income, parental education, family type, etc. which have repeatedly been shown in the literature to be important indicators of PSE attendance. These simpler (i.e., shorter) models will capture the total impact of these variables on access, regardless of the path of those influences (i.e., direct or indirect), while picking up the influences of other omitted factors with which they are correlated.

X_2 includes one element of the wider range of variables available in the YITS. In the present case, we add a total of nine indices derived by Statistics Canada which capture the cultural capital influences discussed above. These indices are all standardized to a standard normal distribution (i.e., mean of zero and standard deviation of one) among all the countries participating in the PISA survey.[5] This means that the coefficient estimates can be easily interpreted as the influence of a change from the mean to one standard deviation above the mean on the probability of attending college or university. Once we have determined which (if any) index is an important correlate of PSE attendance, we can then disaggregate the index into its core components to arrive at a richer understanding of the underlying factors related to PSE attendance. Appendix Table A1 contains details on the component questions that comprise each index.

A couple of points here are worthy of note. First that these influences included in the vector X_2 were all determined *before* entry into PSE, at the time of the first cycle of YITS-A when the respondents were fifteen years of age. Second, these variables are almost certainly related to other family background variables such as family income and parental education. Hence, including them will comprise an exercise in identifying a fuller set of influences of access to PSE, and ascertaining how adding such additional measures affects our understanding of the direct and indirect relationships of family background on access to PSE at either the college or university level. In other words, we are interesting in determining if there is a correlation between

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[5] See Warm (1989) for details as to how the indices were constructed using Item Response Theory.

these influences and participation in PSE, and whether these influences are simply a reflection of parental education or income, or whether they have an impact independent of these usual control variables.

Various specifications of this multinomial logit model are estimated, all of which differentiate between access to college (including CEGEP[6] in Québec and trade schools) and university.[7] Our multinomial setup up thus allows the regressors in our models to have different influences on college and university participation, while allowing these processes to be related.

As is usually the case with this type of estimation technique, there is the potential for endogeneity of the right-hand side variables. For example, students who desire to attend university may ensure that they and read a wide range of books, seek out cultural events, etc. as a means of self-enrichment and enhancing the probability of gaining admission to college or university. Thus, many factors are not exogenous to the PSE participation outcome. There exist a variety of ways to overcome (although not necessarily eliminate) this endogeneity problem. But in this paper we simply take such measures at face value, which is consistent with our goal of estimating the empirical relationships in question and seeing how they change (or not) as the model is expanded to include the cultural capital variables. This may not eliminate the bias caused by endogeneity, but it should at least assuage the problem.

IV. The Data

The Youth in Transition Survey – Sample A (or YITS-A) initially interviewed 15-year olds, their parents, and their high school administrators in 2000. Three follow-up surveys of the young people (only) were conducted in 2002, 2004 and 2006. In this latter wave of the survey, the young people were 21-years of age, an age at which most young people have made at least their initial choices about entering PSE.

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[6] CEGEP is the acronym for *collège d'enseignement général et professionnel* which is part of a system unique to Québec. CEGEPs function as both the final year (grade 12) of high school as well as the beginning of traditional college and university programs.

[7] The use of a multinomial logit model requires the assumption of independence of irrelevant alternative (iia), an assumption that is strong given that the decision to go to college or university are not likely independent. In a previous paper (Finnie and Mueller, 2008a) we estimated a number of the specifications that were very similar to the basic models (i.e., those without the full array of influences presented here) but using a multinomial probit model which does not require this strong iia assumption. In none of the cases did the results change markedly. Thus, we proceed with the more computationally efficient multinomial logit model.

The dependent variables in our study – representing entry into either college or university – thus differentiates those who have decided to enter PSE at this point in their lives versus all others, including those who have decided not to attend as well as those who may go later. In the following analysis, PSE participation is defined as the highest level of PSE attempted by the respondent over the four cycles of the survey. This allows the inclusion of Québec in the sample, as CEGEP is considered a college program in the YITS, giving misleading results. Furthermore, related research (Finnie and Qui, 2008) has shown that switching between programs *within* a given institution is more likely than either switching institutions, and even more likely than switching the level of PSE attended. The measure of first PSE program and the highest level of PSE are generally very similar, and generate similar results. Thus, we are confident that our model does reflect the true decision-making process of Canadian youth, including the youth of Québec who are likely to have completed CEGEP and entered university by the age of 21.

Since individuals who have studied outside of Canada might have quite different backgrounds and experiences, we eliminate them from the sample. For the same reason, non-Canadian citizens and those with unknown immigration status are dropped. Finally, we drop those individuals for which there are missing data as well as those who are continuing in high school, since we obviously do not observe any potential transition into PSE for this latter group.

The final sample contains a maximum of 8,518 females and 8,120 males. At times, this sample is slightly reduced owing to the inclusion of additional variables where the information is incomplete and thus missing observations are dropped from the relevant estimates.

V. Results

A. The Baseline Models

Table 1 contains results of the basic model for both females (column 1) and males (column 4), along with the models estimated where the PISA index variables are included. These are entered both separately (columns 2 and 5 where the basic model is estimated along with each of the nine indices separately) and jointly (columns 3 and 6 where the basic model along with all of the nine indices are included). In the interest of parsimony, the separately estimated

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equations only include the coefficients and the standard errors on the index variables themselves, not on any of the other coefficients. These results represent a set of baseline estimates that are interesting on their own and provide a check on our estimation since these are comparable to other research (Frenette, 2007; Finnie and Mueller, 2008a,b, 2009). Indeed, our results are consistent with those in the literature which show that those from rural areas are less likely to attend university, but more likely to attend college. Compared to Ontario, those from the Atlantic Provinces are more likely to attend university, while in the West the opposite is generally the case. All provinces, with the exception of Quebec, have lower college attendance rates – not surprising given Ontario's high college attendance rates. Family structure has very little influence for either males or females, while parental education exerts a large positive influence of university, but not college attendance. Parental income has a modest influence on university attendance with a $10,000 increase raising the probably off attendance by about two percentage points for females, but by less than one percentage point for males. Both first- and second-generation Canadian are likely to favour university over college compared to the Canadian-born. Again, these results are all common in the recent Canadian literature.

B. Adding the Cultural Capital Indices

Columns 2 and 5 show impact of separately adding the PISA indices to the basic model. The results are consistent with a model of cultural capital. Almost all coefficient estimates are statistically important, at least with respect to university attendance. Economically, some of the coefficients are quite large. Since each is normalized to a standard normal distribution, the coefficients are interpreted as the result of being one standard deviation above the mean. In what follows, we will generally only discuss the correlates with university attendance since almost none of the indices – whether entered into the model separately or jointly – have any meaningful relationship to college attendance. Thus, the following comments will be limited to the relationship of these indices to university attendance. Again, the details of the questions behind each index are contained in Appendix Table A1.

Cultural communications includes measures for the student's response regarding how often parents discuss political or social issues with them, the frequency of discussion about

books, television programs and movies, and the incidence of listening to classical music. Being one standard deviation above the mean enhances the probably of university attendance by about eight percentage points for both males and females. Even after other indices are included, this figure continues be important: 3.4 percentage points for females and 4.4 percentage points for males.

Related to cultural communications is social communications, which includes measures for the frequency of discussion about school with parents, the number of times meals are eaten together, and the frequency of generally just talking. Again, for both males and females, the impact on university attendance is positive, and about six percentage points, dropping to about four percentage points when the model is estimated jointly. Thus, both cultural and social communications are positively related to university attendance.

Family educational support includes the frequency of help with homework from mothers, fathers, and siblings. The coefficient shows that more help actually decreases the probably of attending university, although its impact is marginal. We interpret this to be the result of young people who are having troubles at school and are in greater need of help from another family member.

Family wealth includes the number of cars, cellular telephones, computers, cars, and bathrooms in the family home. It also measures whether there is a dishwasher and/or an internet connection and/or educational software in the family home, and if the young person has his/her own room. Being above the mean by one standard deviation is correlated with higher university attendance rates for males and females, although the latter is much larger – six percentage points versus 2.5. Again, this number diminishes once other cultural capital indices are included in the model.

Likely related to family wealth are home educational resources. Clearly better off families are better able (although not necessarily willing) to use their resources to provide a more enriched learning environment to their children. This index measures if they have the following items at home: a dictionary, a quiet place to study, a desk to study, and textbooks in the home. It also includes the number of hand-held calculators. This index is positively correlated with

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university attendance. Its impact is diminished by about one-third for females when the model is estimated jointly: 7.3 percentage points to 4.7. For males, the same pattern holds, but the magnitude is smaller. For whatever reason, females appear to benefit more from the availability of these resources in the home.

Classical culture is related to the number of times (annually) that individuals go to an art museum or gallery, an opera, ballet or classical symphony concert, or to live theatre. In the joint estimation this increases the probability of university attendance by about 10 percentage points for females and 7.5 percentage points for males. Even when added jointly, these probabilities are still 6.6 and 3.4 percentage points, respectively.

Although few families house an art gallery or a symphony orchestra, other forms of classical culture are common place in a number of Canadian homes, including classical literature, books of poetry and works of art. When this index – classical culture in the home – is entered individually, we see that males and females in a home that is one standard deviation above the mean have about a 5 percent better chance attending university. When estimating the model jointly, however, this probability decreases to zero. Combined with the above result, this suggests that it is "exposure" to – and not "possession" of – classical culture that is important.

The final two indices capture a "love" for reading, as well as the variety of reading materials that the young person uses. This first of these is comprised of a nine questions related to an individual's enjoyment of reading. For example, respondents can strongly agree, agree, disagree or strongly disagree to questions such as: "I enjoy going to a bookstore or a library," and "I only read if I have to." The impact of this variable is quite large – around nine percentage points for both males and females – and remains strong at about six percentage points even when the other index variables are included. This is not surprising since enjoyment in reading is positively correlated with the PISA reading score, and this has been shown to be a very important determinant in accessing university (Finnie and Mueller, 2008a,b).

The second "reading" index includes a measure of how often the respondent read the following six items: magazines, comic books, fiction, non-fiction, e-mails and web pages, and newspapers. When entered separately, there is a positive relationship with university attendance

– about 6 percentage points for both males and females – but again no relationship to college attendance. When entered jointly, however, this figure is statistically indistinguishable from zero. We interpret this to mean that reading itself is important (and captured by the previous index), not the diversity of reading materials *per se*.

In sum, all of the cultural capital variables, save one, are positively correlated to university attendance, and this result tends to hold whether these are entered individually or jointly into the model.

C. The Importance of Parental Income and Parental Education

After adding the cultural capital indices to the model, it might be worthwhile to go ahead and assess the impact of the inclusion of these variables on parental income and education. We know that both of these variables are important correlates of university attendance, in particular. These results are from the same estimated models as in Table 1, but now we focus on the parental education and income and abstract from the other variables in the model. To reiterate, the purpose of this exercise to assess the direct influence of each variable – and how these change – once we control for cultural capital. These results are in Table 2, and several are worthy of mention. First, both parental education and income have practically no statistical correlation with college attendance. Even in the cases where the result is statistically significant, the size of the coefficient is small. Second, the addition of all the cultural capital index variables, either separately or jointly, does very little to diminish the importance of either parental education or income. In terms of parental income, the basic model estimates that a $10,000 increase in family income will increase the probability of females attending university by about 2 percentage points. For males, the figure is only about one-third this amount. Reading down the table from the basic model we see that the individual inclusion of scale variables results in only a small drop in coefficient values. Even the inclusion of all index variables reduces the impact of income by only about one-third for both females and males.

The effect of adding these variables on the correlation of parental education and university attendance is relatively less. For both males and females, an extra year of parental education increases the probability of university attendance by some 6.4 percentage points.

Adding in all the index variables reduces this figure to about 5 percentage points, again for both genders.

These results suggest that there are still large direct influences of parental income and education, especially in the latter case. Thus, family income and parental education do seem to provide the cultural capital necessary to access university (an indirect influence), but there are still independent effects of both of these parental attributes (i.e., a direct influence). In other words, higher levels of parental education and income both enhance the probability of university attendance, but only part of this is transmitted through cultural capital and there remains a sizeable direct influence. In other words, we interpret these results to mean that cultural capital exerts an influence on university attendance that is somewhat independent of family socio-economic status (as measured by both family income and parental education). This bodes well for policy which may be designed to overcome these family deficiencies in income and education.

D. Explaining the Indices

In this section, we address the importance of the components behind the results from the indices presented above. As previously mentioned, these indices are a standardized aggregate of responses to a number of questions. Tables 3 through 11 contain these disaggregated indices in the order that they have previously appeared in Tables 1 and 2. The first column in each table contains the basic model and each is identical to those in Table 1. The final two columns contain the results for each index component estimated separately and then jointly. Given the sheer number of these, only the most pertinent and (at least to us) the most interesting results will be discussed. In the interest of parsimony, only relevant variables are included.[8]

Table 3 shows the disaggregated cultural communication index. Discussing current events is clearly an important correlate of university attendance for both young males and females. It is also positively correlated with the frequency of discussion. Talking about TV programs, books, or films, is also a significant correlate, but coefficient values are much smaller. This indicates a positive correlation between individual item responses. Thus, for example,

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[8] Full regression results are available in Childs, Finnie, and Mueller (2012).

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parents who talk to their children about political and social issues are also more likely to talk to them about other things such as books, TV programs, etc.

Just spending time talking and taking meals with children around a table are also positively related to university attendance. These results are shown in Table 4. In order to be an important factor, however, meals must be taken together at least a few times per month. Also, this factor is generally more important for young males than young females, although both benefit from this type of interaction. By contrast, just spending time talking has a more profound relationship with university attendance among young women. The results from Tables 3 and 4 thus suggest that talking to teenagers is important, but what is discussed is also very important.

Table 5 shows the impact of family members' help in assisting with school work. The interesting result here is that generally the assistance of either the father or other siblings is not related to either college or university attendance. However, the frequent assistance of mothers is negatively related to university attendance. As mentioned above, it is likely those young people most at risk of doing poorly at high school that receive family assistance on school work. These results show that the mother may be assisting the most in these cases or (and we include this for sake of completeness) may be offering less-than-exemplary help to those children who need it.

The disaggregated wealth index is presented in Table 6. Amongst the four household possessions listed, having internet access is statistically important for both males and females, and the coefficients are almost identical (around 8.5 percentage points in the jointly estimated model). What is also interesting is that having too few or too many of a certain household possession can have a profound change on the probability of attending university. For example, having no computer at home is negatively correlated with university attendance for both genders, but having more than one computer is not statistically relevant in the case of females, and important but not proportionately more important in the case of males. Interestingly, the number of bathrooms in a home is positively related to university attendance. The number of cars, by contrast, is not important for young females, but has a negative impact on the male probability of attending university.

Related to these wealth variables is the household educational resources index, the components of which are outlined in Table 7. It seems as if the availability of a desk for study as well as textbooks are important for both females and males, although much more so in the former case. For males, having a dictionary in the home doesn't matter, but for females it is positively related to university attendance. For both males and females, having three or more calculators is also important, whereas having only one of two does not have any statistical impact on university attendance.

Attending cultural events and displays – art galleries, museums, opera, theatre, etc. – are all positively correlated with university attendance. This result is for both males and females. The caveat is that too much attendance is not beneficial. This is the topic of Table 8. Table 9 brings culture into the home. Here we see that having classical books in the home is an important positive correlate of university attendance for both males and females. With our apologies to poets and artists, there is generally no statistical relationship (or at least a much weaker one) between having poetry books and works of art in the home, at least when these three cultural items are considered together.

The final two indices are related to reading. These are particularly important because we know that doing well on the PISA reading score is an important correlate of entry into university (Finnie and Mueller, 2008a,b, 2009). Table 10 shows remarkably consistency across genders: those young people who are able to read for more than a few minutes and find it easy to complete books are much more likely to attend university compared to those who do not. What is read is also important: fiction, non-fiction and newspapers are the most influential correlates with university attendance, whereas comic books are the only consistently negative correlate. Computer activities such as reading e-mails and web pages are also positively correlated. However, too much reading does not necessarily translate into a high probability of attending university.

VI. Conclusions, Discussion and Policy Implications

In this paper, we have attempted to extend the analysis of the determinants of access to postsecondary education by using the concept of cultural capital. Previous research on PSE decision-making shows that a narrow economic model is not appropriate for studying these questions.

For the potential PSE student, the choice of whether or not to attend a PSE institution and which type of institution to attend is complex and multi-dimensional. While economists have traditionally considered financial factors of paramount importance for access to PSE, there are many other factors bound up in the educational decision.

The sociological literature on cultural capital sees education as a tool for the maintenance of social class, a theoretical model supported by the strong intergenerational correlation in education attainment. Since this correlation persists despite policies aimed at improving the equity of access to PSE, a better understanding of this process is crucial to effective program design.

The variables available in the YITS-A give us an opportunity to improve our understanding of this process. By generating several cultural capital indices from student survey questions, the PISA project has provided a way to explore the association of cultural capital on PSE access. By including these variables in our model, we find statistically significant positive correlation between higher cultural capital endowments and PSE (specifically university) access.

While the longitudinal nature of the YITS gives us cultural capital information from the student at age 15 – well before the *final* PSE decision is made – we still must be wary of confusing correlation and causation in these results. Preparation for PSE may begin far earlier, and those preparations may include, for example, the participation in cultural activities. Indeed, such activities may be one method parents use to increase their children's interest in PSE. Similarly, an individual who is interested in these activities may be predisposed to an interest in PSE, which would also confound attempts to determine causal relationships with these models.

The results described in this paper, along with other research by ourselves and others, indicates complexity in the PSE access decision. While there are many potential barriers that can

prevent those who want to attend PSE from doing so (financial barriers, low grades, etc.), the desire to attend may be just as important. Cultural capital may increase the utility of education by improving the fit of the student into their educational environment, and this fit has been shown to be an important correlate with educational success. Students with larger endowments of cultural capital may be more able to relate to both their instructors and peers. After all, if cultural capital is correlated with PSE attainment, both those groups are likely to have a higher cultural capital stock than the average in the population.

Cultural capital can represent a broad set of shared experiences common to various groups within society. Lacking these reference points, an individual may face difficulties in educational settings. This could have a negative impact on grade performance, which is a major factor in PSE admission decisions. Also, these difficulties could reduce the individuals taste for education, and impact access negatively.

Naturally, the relatively simple models used in this paper cannot encompass the full complexity of the PSE decision, but they can provide some insight into the relative importance of various factors in the process. While we have been wisely cautioned against drawing policy recommendation from these results, we do feel that they hold some important implications for policy.

Since these results are consistent with the cultural capital hypothesis, we must consider the implications for equality in our educational system. Removing financial barriers to PSE may be a necessary, but not sufficient, condition for equal access to PSE.

In a larger sense, these results suggest that intergenerational social mobility may be intertwined with culture. While the implications of this are fascinating, they do not easily translate into concrete policy proposals, and cultural policy is well outside the scope of this paper.

To sum up, this paper uses the rich date available in the YITS-A to add cultural capital variables to a multinomial logit model of PSE access. Our findings suggest that these variables are correlated with university, but not college, attendance and that this correlation is not completely explained by parental income and education. This suggests cultural capital is an important part of the PSE decision making process for young Canadians. We do caution that

these results may be specific to Canadian youth and may not generalize to young people in other countries. For example, cultural capital may be a more important positive correlate of university education in some countries, whereas in other cases, policies that promote good nutrition to enhance cognitive development may be the most appropriate.

While the results point to correlation and not necessarily causation, they are nonetheless interesting and do suggest the need for more research to determine which relationships are in fact causal. Nevertheless, the results do point to potential policy remedies. Even though policy cannot easily change the level of parental education – and changing parental income would yield only very small positive outcomes – our results are suggestive of other policies that governments may follow in order to enhance the probabilities of PSE attendance, especially among young Canadian who might not otherwise attend.

In particular, schools play an important role in providing cultural capital to their students. School-age children are often exposed to cultural events through field trips and in-school performances, but perhaps they could be offering more of these activities or adding offerings to the curriculum which will enhance the cultural capital of all students and put all students on a more level playing field. For example, the school lunch programs in France expose children to a variety of French foods, thus giving all students a similar understanding and appreciation for this style of cuisine.

Similarly, parents of all income and education levels could be encouraged to talk to their children about current events, take them to museums and engage in other cultural experiences, and urge them to think about how higher education might be a meaningful option for them in the future.

The findings reported in this paper reflect a particular national context, and we cannot say if these relationships would necessarily hold in other countries. However, the results do point to an interesting and potentially important pattern of influences with significant policy implications. We believe that similar factors may operate in other countries, but this can only be determined by further research.

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Table 1: PISA Indicies

	Females						Males					
	Basic Model		Separately		Jointly		Basic Model		Separately		Jointly	
	College	University	College	University	College	University	College	University	College	University	College	University
HS Location - Urban (Rural)	-0.047***	0.053***			-0.046***	0.040**	-0.023	0.078***			-0.022	0.066***
	[0.017]	[0.018]			[0.017]	[0.018]	[0.017]	[0.016]			[0.017]	[0.017]
HS Province (Ontario)												
Newfoundland and Labrador	-0.140***	0.142***			-0.139***	0.144***	-0.087***	0.118***			-0.081***	0.129***
	[0.026]	[0.029]			[0.026]	[0.029]	[0.028]	[0.029]			[0.028]	[0.029]
Prince Edward Island	-0.183***	0.191***			-0.191***	0.203***	-0.189***	0.216***			-0.190***	0.230***
	[0.024]	[0.026]			[0.023]	[0.025]	[0.025]	[0.028]			[0.025]	[0.028]
Nova Scotia	-0.184***	0.187***			-0.183***	0.185***	-0.155***	0.162***			-0.157***	0.170***
	[0.023]	[0.025]			[0.023]	[0.025]	[0.024]	[0.026]			[0.024]	[0.025]
New Brunswick	-0.168***	0.151***			-0.172***	0.160***	-0.169***	0.145***			-0.160***	0.153***
	[0.024]	[0.026]			[0.023]	[0.025]	[0.023]	[0.026]			[0.024]	[0.026]
Québec	0.012	-0.056**			0.005	-0.044*	0.020	-0.077***			0.014	-0.057***
	[0.024]	[0.027]			[0.024]	[0.027]	[0.025]	[0.020]			[0.027]	[0.021]
Manitoba	-0.161***	0.090***			-0.161***	0.095***	-0.216***	0.112***			-0.214***	0.128***
	[0.024]	[0.026]			[0.024]	[0.026]	[0.022]	[0.027]			[0.023]	[0.026]
Saskatchewan	-0.141***	0.077***			-0.147***	0.094***	-0.190***	0.108***			-0.200***	0.133***
	[0.024]	[0.027]			[0.024]	[0.026]	[0.022]	[0.025]			[0.022]	[0.025]
Alberta	-0.073***	-0.049*			-0.065***	-0.069***	-0.119***	0.003			-0.122***	-0.011
	[0.025]	[0.026]			[0.025]	[0.026]	[0.023]	[0.022]			[0.023]	[0.022]
British Columbia	-0.094***	-0.008			-0.088***	-0.020	-0.106***	0.019			-0.105***	0.007
	[0.024]	[0.026]			[0.024]	[0.026]	[0.024]	[0.024]			[0.024]	[0.024]
HS Language												
French outside Québec	0.003	0.023			-0.014	0.051	0.043	0.005			0.023	0.040
	[0.034]	[0.035]			[0.032]	[0.035]	[0.034]	[0.035]			[0.033]	[0.040]
English in Québec	0.012	0.060			0.012	0.054	0.047	0.041			0.063	0.006
	[0.043]	[0.055]			[0.041]	[0.051]	[0.037]	[0.041]			[0.039]	[0.042]
Family Structure (Two Parents)												
Mother Only	0.025	-0.037			0.023	-0.022	-0.018	-0.047*			0.003	-0.045*
	[0.024]	[0.028]			[0.024]	[0.028]	[0.024]	[0.026]			[0.025]	[0.025]
Father Only	0.093*	-0.102*			0.065	-0.054	0.030	-0.090**			0.021	-0.061
	[0.052]	[0.057]			[0.048]	[0.056]	[0.051]	[0.045]			[0.049]	[0.043]
Other	0.030	-0.060			0.032	-0.054	0.011	0.000			0.020	0.032
	[0.079]	[0.087]			[0.078]	[0.080]	[0.085]	[0.100]			[0.091]	[0.103]
Parents' Highest Level of Education	-0.004	0.064***			-0.002	0.050***	-0.008**	0.064***			-0.007**	0.051***
	[0.003]	[0.004]			[0.003]	[0.004]	[0.003]	[0.004]			[0.004]	[0.004]

cont…

Table 1: PISA Indicies, continued

	Females						Males					
	Basic Model		**Separately**		**Jointly**		**Basic Model**		**Separately**		**Jointly**	
	College	University	College	University	College	University	College	University	College	University	College	University
Family Income	0.000045	0.002018***			-0.000012	0.001337***	-0.000048	0.000674***			-0.000062	0.000414**
	[0.0003357]	[0.0004880]			[0.0003272]	[0.0005022]	[0.0002192]	[0.0002434]			[0.0001752]	[0.0001916]
Immigrant Status (Not an Immigrant)												
First Generation	-0.078**	0.186***			-0.080**	0.182***	0.013	0.126***			-0.005	0.123***
	[0.035]	[0.038]			[0.034]	[0.036]	[0.034]	[0.038]			[0.034]	[0.037]
Second Generation	-0.047**	0.130***			-0.038*	0.113***	-0.010	0.120***			-0.001	0.109***
	[0.022]	[0.025]			[0.022]	[0.026]	[0.021]	[0.023]			[0.021]	[0.022]
Unknown/Don't Know	0.052	-0.056			0.050	-0.028	-0.059	-0.025			-0.078	-0.032
	[0.061]	[0.066]			[0.059]	[0.063]	[0.054]	[0.062]			[0.052]	[0.062]
Cultural Communication with Parents			-0.016**	0.076***	-0.016*	0.034***			-0.011	0.083***	-0.002	0.044***
			[0.008]	[0.009]	[0.009]	[0.010]			[0.008]	[0.007]	[0.009]	[0.009]
Social Communication with Parents			-0.002	0.061***	-0.005	0.040***			-0.015*	0.066***	-0.020**	0.036***
			[0.008]	[0.008]	[0.009]	[0.009]			[0.008]	[0.008]	[0.009]	[0.009]
Family Educational Support			0.013	-0.021**	0.023**	-0.063***			0.015*	-0.020**	0.020**	-0.052***
			[0.009]	[0.009]	[0.009]	[0.010]			[0.008]	[0.008]	[0.009]	[0.008]
Family Wealth			0.001	0.060***	-0.001	0.049***			0.016	0.025**	0.009	0.018*
			[0.011]	[0.012]	[0.011]	[0.012]			[0.010]	[0.010]	[0.010]	[0.010]
Home Educational Resources			-0.002	0.073***	0.001	0.047***			0.015*	0.049***	0.015*	0.023***
			[0.008]	[0.008]	[0.008]	[0.009]			[0.008]	[0.008]	[0.008]	[0.008]
Activities Related to "Classical" Culture			-0.008	0.101***	-0.003	0.066***			-0.014*	0.075***	-0.008	0.034***
			[0.008]	[0.009]	[0.009]	[0.009]			[0.008]	[0.008]	[0.009]	[0.009]
"Classical" Culture in the Family Home			-0.012	0.054***	-0.008	-0.010			-0.012	0.057***	-0.012	0.009
			[0.008]	[0.008]	[0.009]	[0.009]			[0.008]	[0.007]	[0.008]	[0.008]
Engagement in Reading			-0.005	0.087***	0.002	0.062***			-0.023***	0.091***	-0.026***	0.058***
			[0.007]	[0.007]	[0.008]	[0.008]			[0.007]	[0.007]	[0.009]	[0.008]
Reading Diversity			-0.009	0.067***	-0.008	0.001			0.006	0.063***	0.017*	0.011
			[0.008]	[0.009]	[0.009]	[0.010]			[0.008]	[0.007]	[0.009]	[0.008]
Observations	8,518				8,279		8,120				7,752	

Notes: Standard errors in brackets. Average marginal effects shown. Omitted categories in parenthesis. Parent's education is measured in years since Kindergarten. Family income is measured in thousands of dollars. *** p<0.01, ** p<0.05, * p<0.1

Table 2: Parental Education and Income Effects for PISA Index Models

Index	Females				Males			
	Education		Income		Education		Income	
	College	University	College	University	College	University	College	University
Basic Model	-0.004	0.064***	0.000045	0.002018***	-0.008**	0.064***	-0.000048	0.000674***
	[0.003]	[0.004]	[0.000336]	[0.000488]	[0.003]	[0.004]	[0.000219]	[0.000243]
Cultural Talk with Parents	-0.002	0.058***	0.000060	0.001941***	-0.008**	0.058***	-0.000013	0.000607***
	[0.003]	[0.004]	[0.000336]	[0.000493]	[0.004]	[0.004]	[0.000217]	[0.000241]
Social Communication with Parents	-0.003	0.062***	0.000042	0.001885***	-0.008**	0.061***	-0.000062	0.000609***
	[0.003]	[0.004]	[0.000333]	[0.000488]	[0.003]	[0.004]	[0.000202]	[0.000223]
Family Educational Support	-0.004	0.065***	0.000051	0.002030***	-0.008**	0.064***	-0.000035	0.000651***
	[0.003]	[0.004]	[0.000337]	[0.000493]	[0.004]	[0.004]	[0.000218]	[0.000242]
Family Wealth	-0.004	0.062***	0.000045	0.001649***	-0.008**	0.062***	-0.000109	0.000588***
	[0.003]	[0.004]	[0.000351]	[0.000507]	[0.004]	[0.004]	[0.000220]	[0.000242]
Home Educational Resources	-0.003	0.060***	0.000085	0.001916***	-0.008**	0.061***	-0.000065	0.000628***
	[0.003]	[0.004]	[0.000343]	[0.000502]	[0.004]	[0.004]	[0.000216]	[0.000246]
Activities related to "classical" culture	-0.003	0.057***	0.000030	0.001680***	-0.007*	0.058***	-0.000019	0.000576***
	[0.003]	[0.004]	[0.000328]	[0.000480]	[0.003]	[0.004]	[0.000205]	[0.000223]
"Classical" culture in the family home	-0.002	0.058***	0.000112	0.001941***	-0.006*	0.057***	0.000003	0.000594***
	[0.003]	[0.005]	[0.000341]	[0.000498]	[0.004]	[0.004]	[0.002156]	[0.000236]
Engagement in Reading	-0.004	0.060***	0.000022	0.001987***	-0.007**	0.058***	-0.000080	0.000618***
	[0.003]	[0.004]	[0.000330]	[0.000487]	[0.003]	[0.004]	[0.000189]	[0.000212]
Reading Diversity	-0.003	0.061***	0.000027	0.001963***	-0.008**	0.060***	-0.000064	0.000655***
	[0.003]	[0.004]	[0.000332]	[0.000485]	[0.004]	[0.004]	[0.000214]	[0.000239]
All Indicies	-0.002	0.050***	-0.000012	0.001337***	-0.007**	0.051***	-0.000062	0.000414***
	[0.003]	[0.004]	[0.000327]	[0.000502]	[0.004]	[0.004]	[0.000175]	[0.000192]

Table 3: Cultural Commmunications Index Components

Males

	Index		Separately		Jointly	
	College	University	College	University	College	University
Cultural Communication with Parents	-0.011	0.083***				
	[0.008]	[0.007]				
How often do your parents… (Never)						
discuss political or social issues with you?						
A few times a year			0.015	0.050***	0.007	0.031
			[0.021]	[0.019]	[0.021]	[0.019]
Once a month.			0.004	0.141***	-0.001	0.118***
			[0.023]	[0.023]	[0.024]	[0.024]
Several times a month			-0.032	0.209***	-0.037	0.188***
			[0.022]	[0.024]	[0.024]	[0.026]
Several times a week			-0.018	0.236***	-0.021	0.221***
			[0.027]	[0.029]	[0.030]	[0.032]
discuss books, films or television programmes with you?						
A few times a year			0.001	0.094***	-0.002	0.072***
			[0.027]	[0.026]	[0.027]	[0.027]
Once a month.			0.018	0.140***	0.021	0.092***
			[0.028]	[0.028]	[0.029]	[0.028]
Several times a month			0.005	0.161***	0.013	0.078***
			[0.026]	[0.026]	[0.027]	[0.028]
Several times a week			-0.002	0.177***	0.014	0.054*
			[0.027]	[0.028]	[0.029]	[0.029]
listen to classical music with you?						
A few times a year			-0.042*	0.084***	-0.038	0.037
			[0.023]	[0.023]	[0.023]	[0.023]
Once a month.			0.010	0.002	0.015	-0.033
			[0.035]	[0.032]	[0.036]	[0.031]
Several times a month			-0.086***	0.096***	-0.080**	0.036
			[0.033]	[0.037]	[0.033]	[0.035]
Several times a week			-0.012	0.046	-0.006	-0.009
			[0.037]	[0.037]	[0.038]	[0.035]
Observations	8,015				7,908	

Females

	Index		Separately		Jointly	
	College	University	College	University	College	University
Cultural Communication with Parents	-0.016**	0.076***				
	[0.008]	[0.009]				
How often do your parents… (Never)						
discuss political or social issues with you?						
A few times a year			-0.021	0.076***	-0.026	0.066***
			[0.020]	[0.022]	[0.021]	[0.023]
Once a month.			-0.064***	0.155***	-0.063***	0.132***
			[0.023]	[0.026]	[0.024]	[0.027]
Several times a month			-0.103***	0.220***	-0.098***	0.195***
			[0.022]	[0.024]	[0.024]	[0.027]
Several times a week			-0.088***	0.210***	-0.079**	0.195***
			[0.029]	[0.031]	[0.032]	[0.035]
discuss books, films or television programmes with you?						
A few times a year			-0.027	0.073**	-0.020	0.055*
			[0.030]	[0.033]	[0.031]	[0.033]
Once a month.			-0.001	0.090***	0.021	0.043
			[0.030]	[0.033]	[0.031]	[0.034]
Several times a month			-0.033	0.149***	0.002	0.075**
			[0.027]	[0.031]	[0.028]	[0.032]
Several times a week			-0.064**	0.168***	-0.018	0.067**
			[0.027]	[0.030]	[0.029]	[0.033]
listen to classical music with you?						
A few times a year			-0.057***	0.075***	-0.039*	0.035
			[0.022]	[0.023]	[0.022]	[0.023]
Once a month.			-0.059**	0.121***	-0.031	0.066*
			[0.030]	[0.034]	[0.031]	[0.035]
Several times a month			-0.026	0.027	-0.001	-0.032
			[0.034]	[0.037]	[0.035]	[0.037]
Several times a week			-0.026	-0.026	-0.010	-0.069**
			[0.037]	[0.036]	[0.038]	[0.035]
Observations	8,475				8,389	

Notes: Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.10. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table 4: Social Commmunications Index Components

Males

	Index		Separately		Jointly	
	College	University	College	University	College	University
Social Communication with Parents	-0.015*	0.066***				
	[0.008]	[0.008]				
How often do your parents… (Never)						
Discuss how well you are doing at school? (Not at all)						
A few times a year			0.079	0.072	0.073	0.029
			[0.063]	[0.058]	[0.066]	[0.061]
Once a month			0.079	0.114*	0.066	0.054
			[0.061]	[0.059]	[0.065]	[0.066]
Several times a month			0.087	0.146**	0.079	0.062
			[0.059]	[0.060]	[0.063]	[0.069]
Several times a week			0.042	0.159***	0.041	0.055
			[0.055]	[0.059]	[0.058]	[0.070]
Eat dinner with you around a table? (Not at all)						
A few times a year			0.029	0.069	0.023	0.053
			[0.056]	[0.050]	[0.057]	[0.049]
Once a month			-0.021	0.053	-0.049	0.032
			[0.051]	[0.047]	[0.051]	[0.046]
Several times a month			-0.008	0.114***	-0.029	0.090**
			[0.043]	[0.044]	[0.044]	[0.042]
Several times a week			-0.025	0.196***	-0.048	0.160***
			[0.040]	[0.033]	[0.043]	[0.037]
Spend time just talking to you? (Not at all)						
A few times a year			0.046	0.017	0.042	-0.015
			[0.042]	[0.036]	[0.042]	[0.036]
Once a month			0.028	0.065*	0.025	0.011
			[0.038]	[0.036]	[0.040]	[0.037]
Several times a month			0.038	0.111***	0.042	0.044
			[0.036]	[0.036]	[0.038]	[0.038]
Several times a week			-0.003	0.166***	0.006	0.094**
			[0.034]	[0.036]	[0.036]	[0.039]
Observations	8,017				7,907	

Females

	Index		Separately		Jointly	
	College	University	College	University	College	University
Social Communication with Parents	-0.002	0.061***				
	[0.008]	[0.008]				
How often do your parents… (Never)						
Discuss how well you are doing at school? (Not at all)						
A few times a year			0.049	0.036	0.066	-0.007
			[0.062]	[0.057]	[0.063]	[0.057]
Once a month			0.063	0.043	0.093	-0.031
			[0.060]	[0.055]	[0.062]	[0.058]
Several times a month			0.049	0.060	0.089	-0.029
			[0.056]	[0.053]	[0.058]	[0.057]
Several times a week			0.028	0.109**	0.071	0.011
			[0.053]	[0.052]	[0.053]	[0.056]
Eat dinner with you around a table? (Not at all)						
A few times a year			-0.084*	0.039	-0.100**	0.026
			[0.050]	[0.053]	[0.049]	[0.051]
Once a month			-0.016	0.058	-0.024	0.031
			[0.050]	[0.049]	[0.049]	[0.049]
Several times a month			-0.095**	0.107**	-0.101***	0.074*
			[0.038]	[0.042]	[0.039]	[0.043]
Several times a week			-0.102***	0.167***	-0.101***	0.128***
			[0.036]	[0.037]	[0.037]	[0.040]
Spend time just talking to you? (Not at all)						
A few times a year			0.019	0.078	0.004	0.082
			[0.052]	[0.054]	[0.051]	[0.054]
Once a month			-0.024	0.173***	-0.041	0.163***
			[0.043]	[0.048]	[0.044]	[0.051]
Several times a month			-0.057	0.181***	-0.073*	0.162***
			[0.038]	[0.043]	[0.040]	[0.047]
Several times a week			-0.067*	0.205***	-0.081**	0.170***
			[0.037]	[0.040]	[0.040]	[0.045]
Observations	8,477				8,380	

Notes: Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.10. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table 5: Family Educational Support Index Components

	Index		Separately		Jointly	
Males	College	University	College	University	College	University
Family Educational Support	0.015*	-0.020**				
	[0.008]	[0.008]				
How often does _____ work with you on your schoolwork? (Never)						
Your mother						
A few times a year			0.004	0.067***	-0.001	0.041*
			[0.020]	[0.020]	[0.024]	[0.025]
Once a month			-0.002	0.020	-0.013	0.005
			[0.021]	[0.021]	[0.025]	[0.025]
Several times a month			0.037*	-0.029	0.003	-0.043
			[0.022]	[0.021]	[0.028]	[0.027]
Several times a week			0.014	-0.104***	0.001	-0.117***
			[0.028]	[0.025]	[0.036]	[0.030]
Your father						
A few times a year			0.005	0.062***	0.004	0.043*
			[0.019]	[0.019]	[0.023]	[0.024]
Once a month			-0.003	0.009	0.000	0.019
			[0.021]	[0.020]	[0.025]	[0.025]
Several times a month			0.073***	-0.032	0.055*	0.012
			[0.024]	[0.021]	[0.030]	[0.028]
Several times a week			-0.001	-0.052*	-0.011	0.051
			[0.031]	[0.031]	[0.040]	[0.044]
Your brothers and sisters						
A few times a year			0.029	0.005	0.026	-0.001
			[0.020]	[0.020]	[0.020]	[0.020]
Once a month			0.029	0.002	0.025	0.009
			[0.024]	[0.024]	[0.024]	[0.025]
Several times a month			0.070**	-0.014	0.061**	0.001
			[0.027]	[0.027]	[0.028]	[0.028]
Several times a week			0.026	-0.090**	0.019	-0.052
			[0.041]	[0.041]	[0.042]	[0.044]
Observations	8,011				7,827	

	Index		Separately		Jointly	
Females	College	University	College	University	College	University
Family Educational Support	0.013	-0.021**				
	[0.009]	[0.009]				
How often does _____ work with you on your schoolwork? (Never)						
Your mother						
A few times a year			-0.010	-0.004	-0.028	-0.015
			[0.021]	[0.022]	[0.023]	[0.025]
Once a month			0.015	-0.005	0.000	-0.031
			[0.022]	[0.023]	[0.026]	[0.028]
Several times a month			0.014	-0.015	-0.016	-0.036
			[0.022]	[0.023]	[0.027]	[0.030]
Several times a week			0.002	-0.120***	-0.039	-0.147***
			[0.029]	[0.029]	[0.033]	[0.035]
Your father						
A few times a year			0.033*	0.019	0.034	0.036
			[0.020]	[0.022]	[0.022]	[0.025]
Once a month			0.024	0.027	0.011	0.055**
			[0.022]	[0.023]	[0.025]	[0.028]
Several times a month			0.045*	0.014	0.040	0.055*
			[0.023]	[0.025]	[0.028]	[0.032]
Several times a week			0.046	-0.061*	0.049	0.034
			[0.035]	[0.035]	[0.040]	[0.045]
Your brothers and sisters						
A few times a year			-0.002	-0.008	0.004	-0.011
			[0.019]	[0.021]	[0.020]	[0.021]
Once a month			0.016	0.003	0.015	-0.002
			[0.023]	[0.024]	[0.023]	[0.025]
Several times a month			0.048**	-0.032	0.049**	-0.031
			[0.024]	[0.025]	[0.025]	[0.026]
Several times a week			0.018	-0.059	0.015	-0.032
			[0.035]	[0.038]	[0.036]	[0.040]
Observations	8,466				8,239	

Notes: Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.10. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table 6: Wealth Index Components

	Males					
	Index		**Separately**		**Jointly**	
	College	University	College	University	College	University
Family Wealth	0.016	0.025**				
	[0.010]	[0.010]				
Do you have the following at home?						
Dishwasher			0.019	0.042**	0.017	0.006
			[0.018]	[0.018]	[0.019]	[0.020]
Your own room			0.029	0.028	0.023	0.009
			[0.027]	[0.029]	[0.028]	[0.030]
Educational software			0.043**	0.077***	0.047**	0.001
			[0.018]	[0.018]	[0.020]	[0.021]
A link to the Internet			-0.010	0.123***	-0.036*	0.087***
			[0.017]	[0.017]	[0.021]	[0.020]
How many of the following do you have at home?						
Cell phones (One)						
None			0.004	0.014	0.008	0.029
			[0.017]	[0.017]	[0.018]	[0.018]
Two			0.018	-0.025	0.011	-0.030
			[0.020]	[0.020]	[0.020]	[0.020]
Three or more			0.012	-0.061**	0.000	-0.063**
			[0.029]	[0.027]	[0.029]	[0.027]
Televisions (One)						
None			0.192	-0.099	0.128	0.017
			[0.131]	[0.101]	[0.124]	[0.114]
Two			-0.007	-0.016	-0.006	-0.024
			[0.030]	[0.031]	[0.031]	[0.032]
Three or More			0.027	-0.064**	0.021	-0.076**
			[0.030]	[0.030]	[0.031]	[0.032]
Computers (One)						
None			-0.026	-0.141***	-0.010	-0.082***
			[0.027]	[0.023]	[0.032]	[0.028]
Two			0.016	0.055***	0.010	0.052***
			[0.018]	[0.019]	[0.019]	[0.019]
Three or More			-0.025	0.066**	-0.032	0.071***
			[0.027]	[0.027]	[0.027]	[0.027]
Cars (One)						
None			0.040	-0.176***	0.039	-0.145**
			[0.067]	[0.049]	[0.073]	[0.058]
Two			-0.008	0.010	-0.010	0.005
			[0.020]	[0.021]	[0.020]	[0.022]
Three or more			0.023	-0.079***	0.018	-0.077***
			[0.023]	[0.022]	[0.024]	[0.023]
Bathrooms (One)						
None			0.093	-0.082	0.062	-0.053
			[0.097]	[0.059]	[0.097]	[0.072]
Two			-0.005	0.049**	-0.016	0.045**
			[0.019]	[0.019]	[0.020]	[0.019]
Three or more			0.013	0.111***	-0.012	0.114***
			[0.023]	[0.024]	[0.025]	[0.026]
Observations	7,917				7,722	

Table 6: Wealth Index Components, continued

	Females					
	Index		Separately		Jointly	
	College	University	College	University	College	University
Family Wealth	0.001	0.060***				
	[0.011]	[0.012]				
Do you have the following at home?						
Dishwasher			-0.040**	0.088***	-0.034*	0.052**
			[0.018]	[0.019]	[0.019]	[0.020]
Your own room			-0.036	0.051	-0.026	0.032
			[0.029]	[0.033]	[0.029]	[0.033]
Educational software			-0.012	0.090***	0.006	-0.010
			[0.018]	[0.021]	[0.023]	[0.025]
A link to the Internet			-0.039**	0.125***	-0.037*	0.085***
			[0.017]	[0.019]	[0.019]	[0.022]
How many of the following do you have at home?						
Cell phones (One)						
None			-0.022	0.025	-0.026	0.046**
			[0.017]	[0.019]	[0.018]	[0.019]
Two			-0.011	0.004	-0.002	-0.008
			[0.021]	[0.022]	[0.021]	[0.023]
Three or more			-0.006	-0.024	-0.004	-0.027
			[0.032]	[0.036]	[0.033]	[0.036]
Televisions (One)						
None			0.109	-0.160	0.161	-0.217**
			[0.121]	[0.105]	[0.135]	[0.104]
Two			0.033	-0.036	0.049*	-0.070**
			[0.027]	[0.028]	[0.027]	[0.028]
Three or More			0.053**	-0.071***	0.077***	-0.121***
			[0.026]	[0.028]	[0.026]	[0.028]
Computers (One)						
None			0.021	-0.164***	0.009	-0.117***
			[0.024]	[0.026]	[0.030]	[0.033]
Two			-0.034*	0.039*	-0.024	0.024
			[0.019]	[0.021]	[0.019]	[0.021]
Three or More			-0.037	0.084**	-0.027	0.069*
			[0.034]	[0.037]	[0.034]	[0.037]
Cars (One)						
None			-0.038	-0.037	-0.048	0.001
			[0.053]	[0.063]	[0.052]	[0.061]
Two			-0.007	0.017	-0.006	0.004
			[0.019]	[0.021]	[0.020]	[0.021]
Three or more			-0.005	-0.017	-0.005	-0.029
			[0.023]	[0.025]	[0.024]	[0.025]
Bathrooms (One)						
None			-0.139*	0.118	-0.121	0.087
			[0.082]	[0.095]	[0.088]	[0.097]
Two			-0.031	0.086***	-0.026	0.061***
			[0.019]	[0.020]	[0.020]	[0.021]
Three or more			-0.061***	0.171***	-0.050**	0.142***
			[0.023]	[0.025]	[0.024]	[0.027]
Observations	8,369				8,170	

Notes: Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.10. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table 7: Home Educational Resources Index Components

Males	Index		Separately		Jointly	
	College	University	College	University	College	University
Home Educational Resources	0.015*	0.049***				
	[0.008]	[0.008]				
Do you have _____ at home?						
A dictionary			0.102*	0.161**	0.056	0.081
			[0.060]	[0.067]	[0.073]	[0.079]
A quiet place to study			0.063**	0.069**	0.047	0.016
			[0.028]	[0.030]	[0.030]	[0.033]
A desk for study			0.027	0.083***	0.006	0.052**
			[0.021]	[0.022]	[0.024]	[0.024]
Textbooks			0.017	0.071***	0.003	0.049**
			[0.019]	[0.019]	[0.020]	[0.020]
How many calculators do you have at home? (One)						
None			-0.011	-0.038	0.014	-0.024
			[0.093]	[0.079]	[0.100]	[0.085]
Two			0.050	0.065*	0.038	0.048
			[0.040]	[0.038]	[0.040]	[0.037]
Three or more			0.047	0.119***	0.032	0.093**
			[0.035]	[0.036]	[0.036]	[0.037]
Observations	7,914				7,862	

Females	Index		Separately		Jointly	
	College	University	College	University	College	University
Home Educational Resources	-0.002	0.073***				
	[0.008]	[0.008]				
Do you have _____ at home?						
A dictionary			-0.045	0.297***	-0.071	0.229**
			[0.088]	[0.079]	[0.106]	[0.105]
A quiet place to study			-0.028	0.104***	-0.018	0.048
			[0.030]	[0.032]	[0.031]	[0.035]
A desk for study			-0.027	0.107***	-0.024	0.081***
			[0.019]	[0.021]	[0.020]	[0.022]
Textbooks			-0.018	0.104***	-0.017	0.078***
			[0.022]	[0.022]	[0.022]	[0.023]
How many calculators do you have at home? (One)						
None			-0.008	-0.081	-0.013	-0.030
			[0.108]	[0.100]	[0.104]	[0.105]
Two			0.050	0.038	0.048	0.015
			[0.040]	[0.041]	[0.040]	[0.041]
Three or more			-0.001	0.119***	0.002	0.081**
			[0.034]	[0.037]	[0.034]	[0.038]
Observations	8,369				8,304	

Notes: Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.10. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table 8: Cultural Activities Index Components

Males

	Index		Separately		Jointly	
	College	University	College	University	College	University
Activities related to "classical" culture	-0.014*	0.075***				
	[0.008]	[0.008]				
How often do you go… (Never)						
to a museum or art gallery?						
Once or twice a year			-0.012	0.102***	-0.003	0.072***
			[0.016]	[0.015]	[0.016]	[0.016]
Three or four times a year			-0.017	0.155***	0.010	0.081**
			[0.033]	[0.033]	[0.035]	[0.033]
Five or more times a year			-0.042	0.132***	-0.031	0.065
			[0.044]	[0.041]	[0.046]	[0.043]
to an opera, ballet or classical symphony concert?						
Once or twice a year			-0.039*	0.155***	-0.027	0.111***
			[0.022]	[0.023]	[0.023]	[0.023]
Three or four times a year			-0.027	0.144**	-0.004	0.085
			[0.068]	[0.061]	[0.071]	[0.062]
Five or more times a year			0.056	0.042	0.082	0.017
			[0.080]	[0.074]	[0.085]	[0.075]
to live theatre?						
Once or twice a year			-0.022	0.096***	-0.017	0.056***
			[0.016]	[0.016]	[0.016]	[0.016]
Three or four times a year			-0.061**	0.164***	-0.051*	0.109***
			[0.029]	[0.032]	[0.030]	[0.032]
Five or more times a year			-0.012	0.073*	-0.020	0.016
			[0.042]	[0.040]	[0.043]	[0.039]
Observations	8,015				7,943	

Females

	Index		Separately		Jointly	
	College	University	College	University	College	University
Activities related to "classical" culture	-0.008	0.101***				
	[0.008]	[0.009]				
How often do you go… (Never)						
to a museum or art gallery?						
Once or twice a year			-0.056***	0.139***	-0.053***	0.110***
			[0.016]	[0.017]	[0.017]	[0.018]
Three or four times a year			-0.122***	0.245***	-0.112***	0.193***
			[0.029]	[0.030]	[0.031]	[0.033]
Five or more times a year			-0.056	0.167***	-0.044	0.093*
			[0.046]	[0.049]	[0.048]	[0.050]
to an opera, ballet or classical symphony concert?						
Once or twice a year			-0.043**	0.106***	-0.025	0.061***
			[0.018]	[0.020]	[0.019]	[0.021]
Three or four times a year			-0.056	0.152***	-0.028	0.094
			[0.051]	[0.059]	[0.052]	[0.060]
Five or more times a year			-0.064	0.210***	-0.036	0.154*
			[0.072]	[0.079]	[0.073]	[0.081]
to live theatre?						
Once or twice a year			-0.024	0.112***	-0.005	0.072***
			[0.016]	[0.018]	[0.017]	[0.018]
Three or four times a year			-0.045*	0.133***	-0.012	0.063**
			[0.025]	[0.028]	[0.027]	[0.030]
Five or more times a year			-0.022	0.146***	0.025	0.058
			[0.035]	[0.039]	[0.038]	[0.040]
Observations	8,474				8,408	

Notes: Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.10. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table 9: Cultural Possessions Index Components

	Males					
	Index		**Separately**		**Jointly**	
	College	University	College	University	College	University
"Classical" culture in the family home	-0.012	0.057***				
	[0.008]	[0.007]				
Classical literature			-0.033**	0.115***	-0.036*	0.090***
			[0.016]	[0.016]	[0.018]	[0.019]
Books of poetry			-0.009	0.082***	0.013	0.026
			[0.016]	[0.015]	[0.019]	[0.018]
Works of art			-0.021	0.070***	-0.014	0.038**
			[0.016]	[0.016]	[0.017]	[0.017]
Observations	7,898				7,858	

	Females					
	Index		**Separately**		**Jointly**	
	College	University	College	University	College	University
"Classical" culture in the family home	-0.012	0.054***				
	[0.008]	[0.008]				
Classical literature			-0.042***	0.107***	-0.030*	0.095***
			[0.016]	[0.017]	[0.018]	[0.019]
Books of poetry			-0.039**	0.061***	-0.025	0.016
			[0.015]	[0.016]	[0.017]	[0.019]
Works of art			-0.022	0.052***	-0.010	0.028
			[0.017]	[0.018]	[0.017]	[0.018]
Observations	8,365				8,344	

Notes: Standard errors are in brackets. *** $p<0.01$, ** $p<0.05$, * $p<0.10$. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table 10: Joy of Reading Index Components

| | Males | | | | | |
| | Index | | Separately | | Jointly | |
	College	University	College	University	College	University
Engagement in Reading	-0.023***	0.091***				
	[0.007]	[0.007]				
I read only if I have to. (Agree)						
Strongly disagree			-0.035*	0.127***	0.017	-0.015
			[0.021]	[0.022]	[0.032]	[0.030]
Disagree			-0.024	0.109***	0.016	0.011
			[0.019]	[0.019]	[0.021]	[0.022]
Strongly agree			0.019	-0.054***	0.010	0.040*
			[0.023]	[0.020]	[0.026]	[0.024]
Reading is one of my favourite hobbies. (Agree)						
Strongly disagree			0.037*	-0.163***	-0.061*	0.023
			[0.022]	[0.020]	[0.032]	[0.028]
Disagree			0.013	-0.052**	-0.041*	0.014
			[0.021]	[0.021]	[0.024]	[0.024]
Strongly agree			0.037	0.008	0.065	-0.021
			[0.034]	[0.036]	[0.040]	[0.041]
I like talking about books with other people. (Agree)						
Strongly disagree			0.052**	-0.175***	0.019	-0.051**
			[0.021]	[0.019]	[0.027]	[0.024]
Disagree			0.039*	-0.069***	0.028	-0.033
			[0.020]	[0.020]	[0.021]	[0.021]
Strongly agree			0.008	0.052	-0.018	0.066
			[0.040]	[0.042]	[0.042]	[0.044]
I find it hard to finish books. (Agree)						
Strongly disagree			-0.047**	0.141***	-0.015	0.074***
			[0.020]	[0.021]	[0.023]	[0.024]
Disagree			-0.023	0.099***	-0.006	0.031
			[0.019]	[0.019]	[0.020]	[0.020]
Strongly agree			0.011	-0.058**	0.016	0.012
			[0.027]	[0.023]	[0.029]	[0.026]
I feel happy if I receive a book as a present. (Agree)						
Strongly disagree			0.047**	-0.176***	0.013	-0.023
			[0.019]	[0.017]	[0.026]	[0.025]
Disagree			0.007	-0.060***	-0.022	0.007
			[0.017]	[0.018]	[0.019]	[0.020]
Strongly agree			0.004	-0.011	0.022	-0.045
			[0.035]	[0.037]	[0.039]	[0.042]
For me, reading is a waste of time. (Agree)						
Strongly disagree			-0.087***	0.146***	-0.032	0.003
			[0.022]	[0.023]	[0.029]	[0.030]
Disagree			-0.058***	0.118***	-0.029	0.044*
			[0.021]	[0.021]	[0.023]	[0.024]
Strongly agree			-0.046*	-0.087***	-0.061**	-0.059**
			[0.026]	[0.020]	[0.030]	[0.024]
I enjoiy going to a bookstore or a library. (Agree)						
Strongly disagree			0.070***	-0.189***	0.043	-0.055**
			[0.020]	[0.018]	[0.026]	[0.025]
Disagree			0.041**	-0.070***	0.019	-0.018
			[0.018]	[0.018]	[0.020]	[0.020]
Strongly agree			0.017	0.025	0.017	0.023
			[0.027]	[0.029]	[0.030]	[0.031]
I realy only to get information that I need. (Agree)						
Strongly disagree			-0.090***	0.125***	-0.095***	0.030
			[0.022]	[0.024]	[0.027]	[0.028]
Disagree			-0.056***	0.145***	-0.049**	0.066***
			[0.017]	[0.018]	[0.021]	[0.021]
Strongly agree			0.047**	-0.058***	0.056**	-0.025
			[0.023]	[0.019]	[0.025]	[0.021]
I cannot sit still and read for more than a few minutes. (Agree)						
Strongly disagree			-0.076***	0.177***	-0.038	0.087***
			[0.021]	[0.022]	[0.025]	[0.027]
Disagree			-0.025	0.093***	-0.006	0.026
			[0.021]	[0.021]	[0.023]	[0.023]
Strongly agree			-0.037	-0.066***	-0.055*	-0.021
			[0.027]	[0.022]	[0.029]	[0.025]
Observations	8,080				7,936	

Table 10: Joy of Reading Index Components, continued

	Females					
	Index		Separately		Jointly	
	College	University	College	University	College	University
Engagement in Reading	-0.005	0.087***				
	[0.007]	[0.007]				
I read only if I have to. (Agree)						
Strongly disagree			-0.050**	0.121***	0.027	-0.063*
			[0.021]	[0.023]	[0.032]	[0.036]
Disagree			-0.022	0.039*	0.027	-0.082***
			[0.021]	[0.023]	[0.026]	[0.029]
Strongly agree			0.033	-0.094***	0.053	0.001
			[0.035]	[0.033]	[0.042]	[0.041]
Reading is one of my favourite hobbies. (Agree)						
Strongly disagree			0.070***	-0.163***	0.016	0.003
			[0.022]	[0.022]	[0.031]	[0.034]
Disagree			0.040**	-0.062***	0.014	0.011
			[0.018]	[0.020]	[0.022]	[0.024]
Strongly agree			0.011	0.025	0.038	-0.033
			[0.022]	[0.024]	[0.027]	[0.030]
I like talking about books with other people. (Agree)						
Strongly disagree			0.063***	-0.178***	0.027	-0.079***
			[0.021]	[0.022]	[0.026]	[0.029]
Disagree			0.025	-0.092***	0.009	-0.057***
			[0.017]	[0.019]	[0.019]	[0.021]
Strongly agree			-0.017	0.020	-0.016	-0.002
			[0.028]	[0.030]	[0.031]	[0.033]
I find it hard to finish books. (Agree)						
Strongly disagree			-0.048**	0.157***	-0.021	0.075**
			[0.020]	[0.022]	[0.026]	[0.029]
Disagree			-0.031	0.117***	-0.013	0.063**
			[0.020]	[0.022]	[0.022]	[0.024]
Strongly agree			0.015	-0.044	0.015	0.009
			[0.036]	[0.035]	[0.038]	[0.038]
I feel happy if I receive a book as a present. (Agree)						
Strongly disagree			0.074***	-0.179***	0.045	-0.064*
			[0.023]	[0.023]	[0.030]	[0.034]
Disagree			0.034*	-0.075***	0.007	-0.013
			[0.018]	[0.019]	[0.020]	[0.023]
Strongly agree			-0.017	0.068***	0.006	0.031
			[0.022]	[0.026]	[0.028]	[0.034]
For me, reading is a waste of time. (Agree)						
Strongly disagree			-0.068***	0.181***	0.010	0.021
			[0.025]	[0.028]	[0.034]	[0.040]
Disagree			-0.029	0.099***	0.015	0.011
			[0.027]	[0.029]	[0.030]	[0.033]
Strongly agree			-0.040	-0.056	-0.057	-0.025
			[0.040]	[0.038]	[0.045]	[0.045]
I enjoiy going to a bookstore or a library. (Agree)						
Strongly disagree			0.056**	-0.162***	0.011	-0.024
			[0.025]	[0.025]	[0.029]	[0.033]
Disagree			0.026	-0.066***	-0.001	-0.005
			[0.018]	[0.019]	[0.020]	[0.021]
Strongly agree			-0.045**	0.065***	-0.045**	0.032
			[0.019]	[0.022]	[0.023]	[0.026]
I realy only to get information that I need. (Agree)						
Strongly disagree			-0.084***	0.139***	-0.055*	0.020
			[0.021]	[0.023]	[0.030]	[0.032]
Disagree			-0.073***	0.117***	-0.058**	0.050*
			[0.018]	[0.020]	[0.024]	[0.027]
Strongly agree			-0.056*	-0.052	-0.064*	0.001
			[0.032]	[0.032]	[0.035]	[0.037]
I cannot sit still and read for more than a few minutes. (Agree)						
Strongly disagree			-0.072***	0.191***	-0.016	0.091***
			[0.024]	[0.027]	[0.029]	[0.034]
Disagree			-0.045*	0.123***	-0.017	0.071**
			[0.025]	[0.027]	[0.027]	[0.030]
Strongly agree			-0.057	-0.035	-0.065*	-0.002
			[0.036]	[0.036]	[0.038]	[0.039]
Observations	8,490				8,387	

Notes: Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.10. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table 11: Reading Diversity Index Components

	Males					
	Index		Separately		Jointly	
	College	University	College	University	College	University
Reading Diversity	0.006	0.063***				
	[0.008]	[0.007]				
How often did you read… (Never)						
Magazines						
A few times a year			0.026	0.015	0.021	-0.005
			[0.035]	[0.034]	[0.036]	[0.033]
Once a month			0.011	0.084**	0.001	0.045
			[0.031]	[0.034]	[0.032]	[0.034]
Several times a month			0.022	0.084**	0.020	0.020
			[0.030]	[0.033]	[0.031]	[0.034]
Several times a week			0.041	0.025	0.041	-0.037
			[0.031]	[0.032]	[0.032]	[0.034]
Comic Books						
A few times a year			-0.028	0.022	-0.022	-0.025
			[0.018]	[0.019]	[0.018]	[0.018]
Once a month			0.021	-0.023	0.020	-0.075***
			[0.022]	[0.022]	[0.023]	[0.021]
Several times a month			0.043*	-0.038	0.046*	-0.090***
			[0.025]	[0.024]	[0.025]	[0.023]
Several times a week			0.017	-0.092***	0.005	-0.132***
			[0.028]	[0.028]	[0.029]	[0.027]
Fiction						
A few times a year			-0.011	0.115***	-0.013	0.081***
			[0.019]	[0.019]	[0.023]	[0.023]
Once a month			-0.043*	0.151***	-0.059**	0.096***
			[0.022]	[0.022]	[0.025]	[0.026]
Several times a month			-0.031	0.171***	-0.037	0.106***
			[0.025]	[0.025]	[0.028]	[0.028]
Several times a week			-0.025	0.193***	-0.034	0.140***
			[0.026]	[0.026]	[0.029]	[0.030]
Non-Fiction						
A few times a year			-0.012	0.115***	0.000	0.052**
			[0.018]	[0.018]	[0.021]	[0.021]
Once a month			-0.006	0.148***	0.023	0.064***
			[0.022]	[0.022]	[0.026]	[0.025]
Several times a month			-0.034	0.192***	0.001	0.097***
			[0.026]	[0.026]	[0.030]	[0.029]
Several times a week			0.043	0.141***	0.072*	0.062*
			[0.035]	[0.037]	[0.039]	[0.037]
E-mails and Web Pages						
A few times a year			-0.006	0.050*	-0.002	0.011
			[0.032]	[0.029]	[0.032]	[0.026]
Once a month			-0.018	0.082***	-0.024	0.044
			[0.029]	[0.029]	[0.028]	[0.027]
Several times a month			0.038	0.098***	0.036	0.070***
			[0.025]	[0.024]	[0.025]	[0.024]
Several times a week			-0.005	0.153***	-0.008	0.116***
			[0.022]	[0.022]	[0.022]	[0.023]
Newspapers						
A few times a year			-0.018	0.086***	-0.019	0.049*
			[0.029]	[0.028]	[0.030]	[0.028]
Once a month			0.059**	0.114***	0.059*	0.063**
			[0.030]	[0.028]	[0.032]	[0.029]
Several times a month			0.008	0.149***	0.003	0.091***
			[0.025]	[0.026]	[0.027]	[0.027]
Several times a week			-0.024	0.217***	-0.031	0.154***
			[0.024]	[0.027]	[0.026]	[0.029]
Observations	8,072				7,924	

Table 11: Reading Diversity Index Components, continued

	Females					
	Index		**Separately**		**Jointly**	
	College	University	College	University	College	University
Reading Diversity	-0.009	0.067***				
	[0.008]	[0.009]				
How often did you read… (Never)						
Magazines						
A few times a year			0.048	-0.034	0.062	-0.056
			[0.061]	[0.058]	[0.060]	[0.055]
Once a month			0.012	0.079	0.030	0.036
			[0.052]	[0.054]	[0.051]	[0.052]
Several times a month			0.013	0.068	0.033	0.009
			[0.051]	[0.053]	[0.049]	[0.051]
Several times a week			0.014	0.018	0.038	-0.047
			[0.052]	[0.053]	[0.050]	[0.051]
Comic Books						
A few times a year			-0.016	0.017	-0.007	-0.009
			[0.018]	[0.019]	[0.018]	[0.019]
Once a month			-0.002	-0.040	0.003	-0.071***
			[0.024]	[0.025]	[0.025]	[0.024]
Several times a month			-0.050*	0.018	-0.040	-0.016
			[0.026]	[0.030]	[0.026]	[0.030]
Several times a week			-0.038	-0.005	-0.025	-0.039
			[0.034]	[0.036]	[0.036]	[0.036]
Fiction						
A few times a year			-0.026	0.098***	-0.010	0.065**
			[0.025]	[0.027]	[0.026]	[0.028]
Once a month			-0.044*	0.139***	-0.020	0.093***
			[0.025]	[0.027]	[0.027]	[0.030]
Several times a month			-0.030	0.149***	-0.008	0.099***
			[0.025]	[0.028]	[0.028]	[0.031]
Several times a week			-0.092***	0.210***	-0.070**	0.182***
			[0.024]	[0.027]	[0.028]	[0.032]
Non-Fiction						
A few times a year			-0.029	0.095***	-0.018	0.049**
			[0.019]	[0.020]	[0.020]	[0.022]
Once a month			-0.054**	0.112***	-0.033	0.047*
			[0.022]	[0.023]	[0.024]	[0.025]
Several times a month			-0.022	0.111***	0.002	0.036
			[0.026]	[0.029]	[0.030]	[0.031]
Several times a week			-0.052	0.099***	0.000	-0.020
			[0.033]	[0.036]	[0.040]	[0.040]
E-mails and Web Pages						
A few times a year			0.003	0.096***	0.002	0.083**
			[0.031]	[0.034]	[0.031]	[0.033]
Once a month			-0.018	0.072**	-0.017	0.054*
			[0.027]	[0.029]	[0.027]	[0.029]
Several times a month			-0.025	0.151***	-0.021	0.127***
			[0.023]	[0.026]	[0.024]	[0.026]
Several times a week			-0.023	0.136***	-0.014	0.114***
			[0.021]	[0.023]	[0.021]	[0.024]
Newspapers						
A few times a year			-0.011	0.063**	-0.010	0.040
			[0.029]	[0.031]	[0.029]	[0.031]
Once a month			-0.025	0.104***	-0.017	0.069**
			[0.027]	[0.030]	[0.027]	[0.030]
Several times a month			-0.037	0.137***	-0.022	0.098***
			[0.025]	[0.028]	[0.025]	[0.029]
Several times a week			-0.046*	0.139***	-0.032	0.103***
			[0.025]	[0.028]	[0.025]	[0.029]
Observations	8,481				8,350	

Notes: Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.10. Average marginal effects from multinomial logit model are shown in all cases. All estimates also control for urban high school location, province, highest level of parental education, family income, and immigrant status.

Table A1: Composition of PISA Indices

Index	PISA Code	Components of Index	Valid

Cultural communication with parents	CULTCOM	In general, how often do your parents:
		  discuss politics or social issues with you?
		  discuss films, books or television programmes with you?
		  listen to classical music with you?
			Never or hardly ever; a few times a year; about once a month; several times a month;

Social communication with parents	SOCCOM	In general, how often do your parents:
		  discuss how well you are doing at school?
		  eat dinner with you around a table?
		  spend time just talking to you?
			Never or hardly ever; a few times a year; about once a month; several times a month;

Family educational support	FAMEDSUP	How often do the folowing people work with you on your schoolwork?
		  Your mother
		  Your father
		  Your brothers and sisters
		  Your grandparents
		  Other relations
		  Friends of your parents
			Never or hardly ever; a few times a year; about once a month; several times a month; several times a week

Family wealth	WEALTH	In your home, do you have:
		  a dishwasher?
		  a room of your own?
		  educational software?
		  a link to the internet?
		How many of the following do you have at your home?
		  Cellular phone.
		  Television.
		  Computer.
		  Motor car.
		  Bathroom.
			Yes/No
			
			None; One; Two; Three or more

Home educational resources	HEDRES	In your home, do you have:
		  a dictionary?
		  a quiet place to study?
		  a desk for study?
		  textbooks?
		How many of the following do you have at your home?
		  Calculators.
			Yes/No
			
			None, one, two, three or more

Activities related to "classical" culture	CULTACT	During the past year, how often have you participated in these activities?
		  Visited a museum or art gallery.
		  Attended an opera, ballet, or classical symphony concert.
		  Watched live theatre.
			Never or hardly ever; one or twice a year; abour three or four times a year; more than four

Possessions related to "classical" culture in the family home	CULTPOSS	In your home, do you have:
		  classical literature (e.g., Shakespeare)?
		  books of poetry?
		  works of art (e.g., paintings)?
			Yes/No

Engagement in reading	JOYREAD	How much do you disagree or agree with the following statements about reading?
		  I read only if I have to.
		  Reading is one of my favourite hobbies.
		  I like talking about books with other people.
		  I find it hard to finish books.
		  I feel happy if I receive a book as a present.
		  For me, reading is a waste of time.
		  I enjoy going to a bookstore or a library.
		  I read only to get the information I need.
		  I cannot sit still and read for more than a few minutes.
			Strongly disagree, disagree, agree, strongly agree

Reading diversity	DIVREAD	How often do you read these materials because you want to?
		  Magazines.
		  Comic books.
		  Fictions (novels, narratives, stories).
		  Non-fiction books.
		  Emails and web pages.
		  Newspapers.
			Never or hardly ever; a few times a year; about once a month; several times a month; several times a week

Source: Manual for the PISA 2000 Database.