DO GENDER AND ETHNICITY AFFECT CIVIC ENGAGEMENT AND ACADEMIC PROGRESS?

[Part II of An Assessment of Civic Engagement and High School Academic Progress]

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ABSTRACT

Using panel data from the National Education Longitudinal Study of 1988 (NELS), we first analyze how civic engagement (measured in terms of community service and participation in student government) undertaken at the high school level varies across race/ethnicity and gender. Our findings indicate that female high school students tend to be more civically engaged than males in the same race/ethnic group. Also, Asian students have the highest participation rates in civic activities out of the four race/ethnic groups considered here (non-Hispanic whites, African Americans, Hispanics, and Asians); Hispanics tend to be the least involved. Underlying preferences, college aspirations, and opportunity costs explain a large part of these inter-gender and inter-ethnic differences in civic engagement. This study also investigates whether civic engagement differently affects scholastic progress in four academic disciplines and subsequent educational attainment along racial/ethnic and gender lines. The empirical results show that when controlling for a host of socioeconomic characteristics, community service activities required for classes have slightly larger effects on the academic progress of males versus females, but similar effects across race/ethnicity. Finally, performing community service during high school significantly enhances the odds of subsequent college graduation overall, although less so for Hispanic females than their non-Hispanic peers.

INTRODUCTION

Changes in civic engagement over time among American youth are often linked to changes in social capital in the U.S. While the causal association between these two variables is open to debate (Price 2002), their interplay has more consensus. Linking these, however, requires an understanding of what is meant by social capital. This definition has taken on two primary forms by extant literature: the type that is narrow and based on cultural constructs such as "trust" and networking to foment and facilitate social institutions (e.g., Putnam 1995), and the one that broadens the definition to account for structural factors such as labor and family institutions (e.g., Price 2002). One salient question posed by the literature is whether recent declining civic-engagement trends could be the result of an increasing perceived individualism in the U.S. (a cultural trait) or to changes in broader socioeconomic institutions in the country.

Using this logic, another question is whether potential differences in social capital across gender and ethnic/race groups relate to differences in these populations' civic participation rates.[1] In particular, cultural and economic expectations arguably differ among males and females, and cultural values such as trust in community might differ between the majority and ethnic/racial minority populations. Our conceptual take in this paper is to frame this discussion in terms of a utility-based framework: students allocate their time to maximize utility. An implication from this theory is that civic-engagement gaps might arise across groups because of differences in preferences for these activities. That is, the narrow definition of social capital would suggest that observed differences in civic engagement over time or across groups would be the result of changing preferences.

Framing the discussion in terms of utility-based modes also allows us to make the an additional prediction: holding civic-engagement preferences constant suggests that an increase in the perceived returns to civic engagement, assuming that substitution effects outweigh income effects, would lead students to allocate more time to community service. Thus, this conceptual assumption embraces the broader definition that accounts for structural changes in social capital. Specifically, participation in civic engagement should fall as the opportunity costs of civic participation increase. To the extent that these returns and opportunity costs differ across groups, this theory predicts differences in civic engagement across groups.

With this conceptual framework in mind, using panel data from the National Education Longitudinal Study of 1988 (NELS), we first investigate whether differences across gender and race/ethnic groups relate to civic engagement participation tendencies among high school students. The NELS provides student-belief measures of preferences for civic engagement. The broader social capital questions include proxies for the expected returns as well as the opportunity cost variables that measure the reported probability of college attendance and time devoted to other extracurricular activities such as work and athletic endeavors. Our rationale for the reported probability of college attendance as a proxy for an expected return to civic engagement follows from the assumptions that students participate in civic engagement partly to "pad" their vitas (e.g., Friedland and Morimoto 2005; Price 2002); high school students with intentions to go to college would place more value on civic engagement for this reason.

While the use of extracurricular activities as a means to proxy for opportunity costs might appear straightforward, we note that some activities might serve as complements to civic engagement [such as sports, as student athletes appear more committed to the school (e.g., Miller et al , 2005; Jordan 1999), possibly leading to more community awareness], and others as substitutes (working). Our aim here is to determine whether there are differences in the opportunity costs to civic engagement across groups.

This paper also explores whether these civic-engagement activities impact the academic progress and college graduation rates across

gender and ethnic/race groups in a similar fashion. We employ an education-production methodology to test these hypotheses.

NELS DATA

As in the first part of this study (see Dávila and Mora 2007), to test whether gender and race/ethnicity affects civic engagement and scholastic progress, we use panel data from the NELS. In 1988, the National Center for Education Statistics (NCES) sponsored the NELS to track that year's eighth-grade cohort over time; follow-up surveys were conducted in 1990, 1992, 1994, and in 2000. Of the 16,489 individuals in the 1988-92 NELS panel, we focus on the 15,340 with non-missing information in the 1992 survey on whether they were performing community or volunteer work that was not school-sponsored. Our analyses also consider the additional information on community service activities in the 1992 NELS student survey, including whether teenagers had performed unpaid community service between 1990 and 1992 to meet the requirements for a class.

The NELS represents the most suitable panel dataset to analyze the questions posed in this study because of the relatively young age of the initial cohort, the large nationally-representative sample size, and the detailed questionnaires. In particular, the panel begins at the eighth grade level, such that the endogeneity question of whether differences in educational attainment drive community service is not an issue in the early NELS surveys, as all students have the same level of education. The NELS also provides scores on cognitive examinations (Item Response Theory exams) in four subject areas given to eighth graders in 1988, and then another set of scores four years later. As such, academic performance can be observed (and therefore accounted for) before and after students participated in community service activities, reducing the effects of omitted variables, such as ability and motivation, on the estimated relationship between civic engagement and scholastic progress during high school.

CIVIC ENGAGEMENT ACROSS GENDER AND RACE/ETHNICITY

Table 1 provides selected mean characteristics of the NELS panel partitioned by gender and race/ethnicity for the four largest racial/ethnic groups: non-Hispanic whites, African Americans, Hispanics, and Asians. It should be noted that few studies have explored the civic engagement patterns of Asian Americans (a notable exception being López et al., 2006). Native Americans are also included in the NELS, but unfortunately their sample size is too small to provide a detailed analysis of civic engagement particular to that population. The Appendix includes information on the measurement of the key variables used in our analyses. For the characteristics of the full sample, see the first part of this study (Dávila and Mora 2007)].

Table 1: Civic Engagement Participation, Preferences Toward Helping Others, and Related High School Activities: 1988-92

	Non-Hispanic Whites		African Americans		Hispanics	
Characteristic	Females	Males	Females	Males	Females	Males
Civic engagement:						
Performed com. service 1992	27.92%	24.20%	30.68%	25.05%	22.50%	22.05%
Performed com. service Required for class 1990-92+	8.74%	6.07%	8.51%	4.97%	8.59%	6.92%
Performed required com. serv. For non-class reason+	2.98%	3.92%	4.23%	3.72%	7.46%	4.25%
Performed strictly voluntary Com. service 1990-92+	38.27%	28.75%	26.64%	16.45%	25.02%	24.59%
Participated h.s. student govt.	19.28%	13.43%	17.55%	14.15%	14.18%	12.58%
Expects in 1988 to graduate from college	69.68%	66.22%	65.06%	59.17%	54.09%	55.03%
Preferences in 1992: It is "not important" to help others in com.	4.71%	11.59%	4.74%	8.34%	4.15%	8.64%
Other activities potentially affecting civic engagement in 1991-92 school year (for those enrolled in school):						
Involved in sports	27.02%	48.19%	19.82%	51.47%	16.26%	41.89%
Worked 21+ hours/week	18.74%	23.26%	13.01%	21.81%	22.67%	22.62%
N:	5,474	5,295	791	690	961	905

+ This information is only based on students enrolled in school in 1992 because the question was not asked of the school dropouts; the 1992 community service measure was asked of both students and school dropouts.

Notes: These statistics were estimated using the appropriate NELS-provided sampling weights. See the text for the sample selection.

Table 1 provides a general answer to the first question posed above: civic engagement varies with respect to gender and race/ethnicity. Within each of the four race/ethnic groups, female students are more likely to participate in both informal (such as community service) and formal (student government) civic activities than males, with the smallest gender gap occurring among Hispanics. For example, nearly 28 percent of non-Hispanic white female teenagers were involved in community service in 1992, compared to 24 percent of males. Among Hispanics, this gender gap is less than half of a percentage point (22.5 percent for females, and 22.1 percent for males).

It should also be noted that for each ethnic group, a gender-related gap occurs for community service required for classes; for example, with the exception of Asians, 8.5 – 9 percent of female students performed community service for a class between 1990 and 1992, compared to 5 – 7 percent of male students. A gender gap also exists for Asians, but their participation rates are higher. These observations raise questions regarding whether: (1) students have choices in selecting courses, and female students seek those which mandate community service; (2) such community service requirements are options within a set of assignments to meet a particular component in the class, with female students opting for community service more frequently than their male counterparts, and (3) female teenagers are more likely than males to take classes better suited to service learning, such as history or civics.

While we cannot disentangle these possibilities with our data, two points should be made. First, the fact that female teenagers participate more often in service-learning activities than males emphasizes a female-bias toward civic engagement. Second, despite the likelihood that some choices are made regarding whether to take (or engage in) courses with service-learning components, we maintain that students have less personal control on the average in performing community service for classes versus purely voluntary activities. We therefore believe that self-selection is less of an issue when analyzing the relationship between civic activities and scholastic progress if such activities have been course-mandated vis-à-vis those which are truly voluntary.

Table 1 also shows that within each gender group, civic activities vary with respect to race/ethnicity, with Asian Americans being the most engaged, and Hispanic Americans, the least engaged, regardless of measuring civic engagement through participation in student government or in terms of community service. To illustrate, nearly 32 percent of female Asian teenagers performed community service in 1992, and 21 percent were in student government during high school; these are the highest participation rates of the eight gender/ethnic populations shown. Only 22 – 23 percent of Hispanics participated in community service in 1992, compared to 24 – 32 percent of teenagers from other race/ethnic groups.[2]

We now turn to potential explanations for these civic engagement gaps across the aforementioned groups. Considering our conceptual framework, Table 1 reports information on a group of variables that provide insight into differences in the preferences for, returns to, and opportunity costs from civic engagement across these groups. With regards to preferences, in 1992 individuals reported their perceived importance of helping others in the community, with the possible responses of "very important", "somewhat important, and "not important".

As seen in Table 1, for each ethnic group, females have a stronger preference for helping others in the community, as seen in their smaller shares reporting the lack of importance for helping others. Inter-ethnic differences also exist: non-Hispanic white males and Asian males have the lowest preference, and Asian females, the highest preference. Note that the largest gender-related preference gap within an ethnic group occurs among Asians, where 2.5 percent of Asian females report it is "not important" to help others, compared to 9.2 percent of Asian males. To the extent that these gaps reflect preferences for civic engagement in the community, these findings appear to roughly correlate with the actual civic engagement gaps noted above. For example, Asians also have the largest gender gap

for participating in strictly voluntary community service. These preferences, however, do not appear to explain the relatively low levels of civic engagement for Hispanics; members of this group report similar preferences compared to non-Hispanic whites and African Americans for helping others, but their actual civic engagement participation tend to be less than for the other groups.

To serve as a proxy for the returns to civic engagement, we consider whether students in 1988 expected to graduate from college. The usefulness of this information owes to it being reported before students started high school, and before many were old enough to become actively involved in community service activities. Using expected college graduation as a proxy for expected civic-engagement returns follows from the assumption that students often participate in civic activities partly to "pad" their vitas (e.g., Friedland and Morimoto 2005; Price 2002). As such, students who plan to go to college most likely place a greater value on civic engagement during high school, as they would expect such activities to increase their chances of being accepted into colleges and universities.[3]

Table 1 shows that Asians, particularly females, had the highest intention among the groups to graduate from college; nearly three-quarters of female Asian eighth-graders expected to finish college. Hispanics had the lowest expected college graduation rates of the groups shown (54 percent for females and 55 percent for males). Based on this information, if college aspirations reflect the returns to civic engagement, we would expect Asians to be most the most civically engaged, and Hispanics the least. This prediction is consistent with these college-aspiration numbers.

In terms of opportunity costs to civic engagement, we focus on student involvement in sports and whether they had a heavy workload outside of school. On the surface, the use of outside employment to proxy for opportunity costs is straightforward, but school-sponsored activities, such as sports, might serve as complements to civic engagement, as we note above.[4]

The NELS provides information on employment and sports activities for students enrolled in school at the time of the 1992 survey; as such, this information excludes high school dropouts. Note that Hispanic students were the least likely to participate in sports within each gender group, but other than non-Hispanic white males, Hispanics had the highest share of young adults working over 20 hours per week. That is, Hispanic high school students were more involved in civic-engagement-substitute activities (working more than 20 hours per week) and fewer complement activities (sports), again providing insight into their relatively low civic engagement.

Still, these extracurricular variables do not perfectly predict civic engagement patterns across race/ethnicity and gender. Consider the relatively large gap in sports activities between African American males (51.5 percent) and females (20 percent). If sports and community service are complements, other things the same, African American males should have been more involved in community service than their female counterparts. As noted above, however, this was not the case. This said, the gender gap for those who work more than 20 hours per week is largest among African Americans, which could partly explain the lower levels of civic engagement for African American males than females.

Table 2 provides a useful (but admittedly crude) method to disentangle the potential influences of involvement in sports, working, preferences, and expected returns on civic engagement across the different populations. Specifically, this table focuses on four characteristics assumed to enhance the likelihood of participation in community service, namely preferences (i.e., the belief that helping others in the community is important), aspirations to graduate from college, a low employment commitment, and involvement in sports.

Based on the information in Table 1, we ranked the four racial/ethnic populations within each gender group according to the magnitudes of these four characteristics. For example, among females, Asians were ranked first in Table 2 with respect to preferences because they had the

Table 2: Ordinal Rankings of Preferences, College Aspirations, and Related Activities in Terms of the Predicted Influence on Community Service in 1992

Category	Non-Hispanic Whites	African Americans	Hispanics	Asians
Females:				
Preferences	3 (tied)	3 (tied)	2	1
College aspirations	2	3	4	1
Does not work more than 20 hours/week	3	1	4	2
Involved in sports	2	3	4	1
Average score	2.5	2.5	3.5	1.25
Predicted rank in community service	2 (tied)	2 (tied)	4	1
Actual rank in community service	3	2	4	1
Males:				
Preferences	4	1	2	3
College aspirations	2	3	4	1
Does not work more than 20 hours/ week	4	2	3	1
Involved in sports	2	1	4	3
Average score	3	1.75	3.25	2
Predicted rank in community service	3	1	4	2
Actual rank in community service	3	2	4	1

Notes: These rankings are based on the information provided in Table 1. A score of one indicates that this group is expected to have the highest community service participation rate (and a score of four, the lowest) out of the four racial/ethnic groups on the basis of each characteristic. The predicted rank is based on the average score, while the actual rank is based on the actual community service participation rates in 1992 for each group (e.g., Asians had the highest share of individuals performing community service in 1992, such that they were assigned a score of 1).
See the text for more information.

smallest share of individuals reporting the lack of importance to help others in the community. If such preferences affect the propensity to perform community service, we would expect Asians to be the most engaged out of females. Similarly, Asian females had the highest share of eighth-graders expecting to graduate from college; thus, they were assigned a score of "one" as this group had the highest return to civic engagement as per this proxy.

The average score is simply the average of the rankings in the four categories, such that the lowest average score predicts the group to be the most civically engaged. Based on this method, we predict that Asian females to be the most civically engaged, followed (with a tie) by non-Hispanic whites and African Americans, and lastly, Hispanic females. For males, this method suggests that African Americans would be the most engaged, followed by Asians, then non-Hispanic whites, and finally Hispanics.

As rudimentary as this method appears, these predictions mainly hold. For females, the predicted community service participation based on preferences, college aspirations, work, and sports are accurate with the exception of non-Hispanic whites (third instead of tying African Americans for second place). For males, African Americans and Asians trade places between their actual and predicted community service participation; however, non-Hispanic whites and Hispanics had the third and fourth lowest participation rates in community service, as predicted. It follows that differences in civic engagement across racial/ethnic groups can be at least partly explained by inter-ethnic differences regarding time commitments, extracurricular activities, educational aspirations, and underlying preferences.[5] As such, the relatively low civic participation rates among Hispanic teenagers do not appear to be driven by intrinsic beliefs that civic engagement lacks importance, but rather by relatively low educational expectations and tight time constraints (i.e., employment).

A NOTE ON THE CIVIC ENGAGEMENT OF IMMIGRANTS.

Another possible explanation for the low civic engagement of Hispanics could relate to immigration. For example, some studies have suggested that immigrants are less connected to their communities and have fewer social ties, reducing the likelihood of participating in informal types of civic activities (Segura, Pachon, and Woods 2001). Alternatively, to the extent that immigrants cannot run for some publicly-elected offices (e.g., U.S. President), and that civic-engagement activities might be viewed by some as a means to promote their chances to attain an elected post, immigrants would be less likely to perform community service.

At first glance, these possibilities seem to fit with the relatively low civic engagement of Hispanics, given that 14.3 percent of Hispanics in our sample are foreign-born, compared to 1.3 percent of non-Hispanic whites and 2.2 percent of African Americans. Yet, immigrants represent an even higher share—42 percent—of the Asian sample, indicating that populations with large shares of immigrants do not necessarily have low civic participation rates in the host country, at least among teenagers.

More importantly, a closer perusal of the data fails to provide evidence of statistically significant differences between foreign- and U.S.-born high school students with respect to civic engagement. For example, 22.1 percent of U.S.-born Hispanics and 31.9 percent of U.S.-born Asians performed non-school-sponsored community service activities in 1992; within each ethnic group, these figures do not statistically differ at conventional levels from the community service participation rates of foreign-born Hispanics and Asians (23.5 percent and 31.9 percent, respectively). Student government participation is also statistically similar between immigrants and U.S.-natives in the same race/ethnic group.[6] It therefore appears that immigration does not explain the relatively high civic "disengagement" observed for Hispanic high school students.[7]

ACADEMIC ACHIEVEMENT ACROSS GENDER AND RACE/ETHNICITY

Given that civic engagement varies across race/ethnicity and gender, do the returns to such activities also differ across populations? Before empirically addressing this question, first consider Table 3, which provides data on average academic achievements, including educational attainment and the IRT exam score levels and growth rates. Overall, this table is consistent with respect to inter-gender and inter-ethnic patterns that have been extensively discussed in the literature. For example, females have higher average scores in reading than males in each racial/ethnic group, and with the exception of African Americans, had lower average scores than males in mathematics, science, and history. The progress in these disciplines, measured by the percentage change in the IRT scores between 1988 and 1992, indicates that male students in general widened their math and science advantages over their female counterparts during high school (with the exception of Asians in science). Also, non-Hispanic whites and Asians had higher average scores in the four academic disciplines in 1988 than African Americans and Hispanics, although the growth rates of these scores during high school did not consistently favor one group over another.

Table 3: Educational Attainment and Other Scholastic Achievement Measures of the NELS Cohort by Race/Ethnicity and Gender

	Non-Hispanic Whites		African Americans		Hispanics	
Achievement	Females	Males	Females	Males	Females	Males
1988 Reading IRT Score	29.06 (0.17)	27.16 (0.19)	22.90 (0.43)	21.77 (0.49)	23.26 (0.36)	22.75 (0.32)
Reading progress 1988-92	23.15% (0.55)	24.32% (0.84)	21.75% (1.42)	21.24% (2.19)	24.42% (1.60)	28.84% (1.97)
1988 Math IRT Score	37.27 (0.22)	37.66 (0.54)	29.01 (0.62)	27.99 (0.56)	29.00 (0.38)	31.39 (0.48)
Math progress 1988-92	32.54% (0.46)	35.33% (0.63)	35.88% (1.48)	38.61% (2.09)	35.03% (1.41)	40.95% (1.98)
1988 Science IRT Score	18.97 (0.09)	19.89 (0.11)	15.56 (0.22)	15.86 (0.27)	15.88 (0.15)	17.13 (0.20)
Science progress 1988-92	22.85% (0.49)	28.59% (0.60)	14.42% (1.41)	20.67% (1.37)	18.05% (1.27)	27.50% (1.62)
1988 History IRT Score	29.74 (0.83)	30.43 (0.11)	27.32 (0.26)	27.36 (0.31)	26.85 (0.18)	27.78 (0.22)
History progress 1988-92	17.19% (0.32)	17.63% (0.30)	16.69% (0.83)	14.64% (1.34)	17.34% (0.98)	20.48% (0.81)
Low 8th grade acad. standing	4.29%	6.08%	15.85%	14.64%	13.23%	12.11%
School dropout in 1992	9.16%	7.17%	11.72%	13.64%	18.90%	15.51%
4-year college degree by 2000	38.21%	33.33%	24.13%	15.06%	15.74%	16.72%
N:	5,474	5,295	791	690	961	905

Notes: The parentheses contain robust standard errors for the continuous variables. These statistics were estimated using the appropriate NELS-provided sampling weights.

In terms of educational attainment, Table 3 shows that, compared to non-Hispanic whites, Hispanics and African Americans were more likely to drop out of high school, and less likely to graduate from college within 12 years of the eighth grade (the reverse holds for Asians). Gender-related gaps exist with respect to these differences as well, with African American females being considerably more likely than their male counterparts to have a college degree by 2000 (24.1 percent versus 15.1 percent). Hispanic females were less likely than Hispanic males to have graduated from college by 2000 (15.8 versus 16.7 percent), but more likely than African American males. Still, note the particularly large high-school dropout rate among Hispanic females (19 percent).

Note that the college graduation rates, while smaller than the expected graduation rates expressed by eighth-graders in 1988 (recall Table 1), are fairly accurate predictors of inter-ethnic and inter-gender educational differences. For example, Table 1 shows that Asian females, followed by Asian males, had the highest shares of eighth-graders expecting to graduate from college in 1988 out of the eight groups; 12 years later, they had the highest shares of college graduates (52 percent of Asian females, and 44 percent of Asian males). However, eighth-graders' schooling aspirations are not perfect predictors of actual educational attainment. Despite having the lowest expectations in 1988 of finishing college among the racial/ethnic groups and larger high-school dropout rates, a higher share of Hispanics (16 percent of Hispanic females, and 17 percent of the males) than African American males (15 percent) had completed college by 2000. The low college-graduation rates of Hispanics and African Americans (particularly males), are worthy of policy attention.

CIVIC ENGAGEMENT AND SCHOLASTIC PROGRESS: A COMPARISON ACROSS GENDER AND RACE/ ETHNICITY

In the first part of this overall study (Dávila and Mora 2007), we provide evidence that teenagers who were civically engaged made greater scholastic progress in mathematics, science, and history, and subsequently acquired more education on average than their peers. In light of the scholastic and educational differences observed in Table 3, a related question is whether civic engagement similarly enhances academic progress and educational attainment across racial/ethnic and gender groups.

Civic Engagement and Scholastic Progress during High School. Our empirical analysis begins by focusing on the scholastic progress made by the aforementioned groups during high school with respect to reading, mathematics, science, and history. In particular, following empirical techniques often employed in the economics of education literature (e.g., Hanushek 1986, Ehrenberg and Brewer 1994; Mora 2000; Dávila and Mora 2004), we estimate:

(1) $\text{Exam Score}_{92} = f(\text{Exam Score}_{88}, \text{Civic Engagement}_{88\text{-}92}, \text{Ethnicity}, \text{Ethnicity x Civic}, \text{Household}_{88}, \text{Personal}, \text{School}_{88})$.

The variable Exam Score_{92} represents the natural logarithm of the IRT score in 1992, and Exam Score_{88} is the corresponding eighth-grade IRT score. Recall from the first part of our study [Dávila and Mora (2007)] that the empirical advantages with Equation (1) are that it addresses whether initial achievement (i.e., the 1988 exam score) influences subsequent scholastic progress, and it reduces the distortions that unobservable characteristics (such as ability) might create with respect to the estimated effects of observable characteristics on academic progress. Given that the 1988 exam score is included as a regressor, the regression estimates will reflect the marginal or "value-added" effects of the right-hand side variables (Hanushek 1986; Maddala 1994).

Civic Engagement is a vector of variables for civic activities undertaken between 1988 and 1992, namely student government participation and community service. We use the community service measures from 1990-92 that distinguish between involuntary and strictly voluntary activities. Ethnicity denotes a vector of binary race/ethnic variables [African American, Hispanic, Asian, and non-Hispanic white (base group)], while the vector Ethnicity x Civic includes interactions between

each of the ethnic variables and the different civic engagement measures. The coefficients on these interaction terms will indicate whether participation in civic engagement differently influences high school scholastic progress along the lines of race and ethnicity.

Equation (1) further includes the vectors Household, which contains variables for the individual's household's characteristics in 1988 (family income, parents' education, and parents' marital status); School (which includes the percentage of students in the 1988 school receiving a free or subsidized lunch, the school's urban/suburban/rural location, and its geographic location); and Personal (the individual's immigration status, and whether he/she had a low academic standing in the eighth grade).

Table 4 presents the ordinary-least-squares (OLS) regression results for four academic disciplines (reading, mathematics, science, and history) from estimating Equation (1) for the variables in the Civic Engagement, Ethnicity, and Ethnicity x Civic vectors. The remaining results (not shown to conserve space) can be obtained from the authors. When examining reading scores, we omit those individuals who did not take the IRT for reading in both 1988 and 1992. Similarly, when examining the other disciplines, we omit those individuals who do not have corresponding IRT scores in both surveys. For insight into whether gender-related differences exist beyond race/ethnicity effects, our estimations separate female and male students.

Table 4: Selected Regression Results for High School Academic Progress Using the 1990-92 Community Service Measures [Dependent Variable = *Ln*(IRT Score) in 1992 for Reading, Mathematics, Science, or History]

	Females				Males			
Characteristic	Reading	Math	Science	History	Reading	Math	Science	History
Performed com. Serv. For class	0.049*** (0.012)	0.047*** (0.010)	0.047*** (0.012)	0.033*** (0.010)	0.094*** (0.016)	0.056*** (0.012)	0.082*** (0.012)	0.039*** (0.008)
Required com. Serv., not class	-0.003 (0.024)	0.024 (0.018)	0.041** (0.017)	0.030*** (0.011)	0.010 (0.028)	0.014 (0.019)	0.020 (0.026)	0.014 (0.013)
Strictly voluntary com. service	0.057*** (0.008)	0.050*** (0.007)	0.063*** (0.009)	0.039*** (0.005)	0.095*** (0.014)	0.063*** (0.008)	0.072*** (0.008)	0.043*** (0.005)
H.S. student government	-0.001 (0.009)	0.017** (0.007)	0.017** (0.008)	0.011** (0.005)	0.007 (0.017)	0.011 (0.008)	0.004 (0.010)	0.012* (0.007)
Af. Am. *x* class-req. service	-0.015 (0.034)	0.010 (0.030)	-0.032 (0.035)	-0.002 (0.018)	0.037 (0.074)	-0.004 (0.067)	0.037 (0.043)	-0.012 (0.043)
Af. Am. *x* non-class req. serv.	-0.029 (0.051)	0.010 (0.042)	-0.044 (0.050)	0.015 (0.027)	0.056 (0.055)	-0.037 (0.047)	0.051 (0.050)	0.065** (0.026)
Af. Am. *x* strictly voluntary serv.	0.028 (0.025)	0.049* (0.027)	0.025 (0.030)	0.001 (0.014)	0.054 (0.045)	0.089*** (0.035)	0.041 (0.032)	0.034 (0.021)
African Amer. *x* student govt.	0.044* (0.025)	-0.001 (0.022)	0.011 (0.025)	0.026** (0.012)	-0.054 (0.044)	0.018 (0.026)	0.001 (0.033)	0.006 (0.017)
Hisp. *x* class-req. service	0.018 (0.037)	-0.017 (0.032)	-0.004 (0.035)	-0.022 (0.023)	-0.089 (0.064)	-0.021 (0.034)	-0.013 (0.040)	-0.025 (0.025)
Hisp. *x* non-class req. serv.	0.078* (0.046)	-0.055 (0.052)	0.016 (0.033)	-0.059** (0.028)	-0.037 (0.054)	-0.049 (0.035)	-0.032 (0.054)	-0.067** (0.033)
Hisp. *x* strictly voluntary serv.	0.042 (0.028)	0.017 (0.021)	0.030 (0.025)	0.006 (0.018)	-0.038 (0.030)	0.044 (0.031)	0.040 (0.026)	-0.0005 (0.015)
Hispanic *x* student govt.	0.039 (0.031)	-0.010 (0.023)	0.067*** (0.021)	0.020 (0.015)	-0.047 (0.036)	-0.011 (0.040)	-0.071** (0.038)	0.006 (0.017)
Asian *x* class-req. service	-0.007 (0.050)	-0.186 (0.133)	-0.092 (0.112)	-0.020 (0.034)	0.041 (0.086)	-0.045 (0.036)	-0.064 (00.87)	0.026 (0.034)
Asian *x* non-class req. serv.	0.070 (0.046)	0.035 (0.040)	-0.054 (0.039)	0.003 (0.028)	0.035 (0.073)	-0.009 (0.046)	0.025 (0.060)	0.062** (0.028)
Asian *x* strictly voluntary serv.	-0.023 (0.027)	-0.0004 (0.023)	-0.002 (0.034)	-0.013 (0.023)	0.036 (0.041)	-0.037 (0.029)	0.035 (0.027)	0.035** (0.015)
Asian *x* student government	0.031 (0.028)	-0.018 (0.036)	-0.025 (00.43)	0.024 (0.019)	0.011 (0.049)	0.015 (0.032)	-0.008 (0.029)	-0.017 (0.016)
African American	-0.084*** (0.023)	-0.045*** (0.015)	-0.101*** (0.017)	-0.026*** (0.009)	-0.071** (0.028)	-0.049*** (0.017)	-0.120*** (0.016)	-0.035*** (0.012)
Hispanic	-0.069*** (0.023)	-0.020 (0.015)	-0.087*** (0.017)	-0.034*** (0.013)	0.013 (0.024)	0.015 (0017)	-0.033* (0.017)	0.003 (0.010)
Asian	0.029 (0.022)	0.014 (0.017)	0.021 (0.031)	-0.013 (0.017)	-0.025 (0.037)	0.053** (0.027)	-0.027 (0.024)	-0.012 (0.014)
R^2	.594	.727	.563	.543	.493	.674	.510	.515
N:	6,048	6,036	5,997	5,958	5,853	5,863	5,818	5,769

***, **, * Statistically significant at the one, five, or ten percent level.

Notes: The parentheses contain robust standard errors. These results employ the appropriate NELS-provided sampling weights. Other variables in the regressions include the corresponding 1988 *ln*(IRT) score, participation in eighth-grade student government, low eighth-grade academic ranking, immigrant status, household characteristics in 1988 (family income, parents' highest education level, parents' marital status), school characteristics in 1988 (percent of students receiving free lunch and location (urbanicity and geographic region)), and binary variables for missing information for family income and the percent of students in the 1988 school receiving free lunch. Only non-Hispanic white, African American, Hispanic, and Asian students in the 1988-92 NELS panel with non-missing information on the 1988 and 1992 corresponding IRT scores and on community service participation in 1992 are included here.

Table 4 indicates that, regardless of the discipline, community service performed on a strictly voluntary basis or to meet course requirements had a positive and statistically significant effect on scholastic progress during high school for both female and male students. This observation corroborates our findings obtained when combining both gender groups in the first part of this study (Dávila and Mora 2007). Our previous results had also indicated positive effects related to community service required for reasons other than coursework in science and history; Table 4 shows that the average performance in these disciplines was related to such service activities, but only among females.

Of additional relevance, course-required community service exhibits a similar influence (of 4.7 – 4.9 percent) on the scholastic progress of females in three of the disciplines (the exception being history, with a slightly smaller gain). Moreover, in each of the subjects, community service conducted for classes related to a higher gain among male teenagers than females, with the smallest gain again being in history (3.9 percent), and the largest in reading (a 9.4 percent gain for males). The scholastic returns from voluntary community service were also higher for male students than for females in each area.

Table 4 further indicates that being involved in student government during high school disproportionately affected the scholastic progress of young women. For example, female students in government made 1.1 – 1.7 percent greater progress in history, mathematics, and science than other teenagers. Males involved in government, however, only experienced a significant boost in their history performance over their peers. It appears that the average scholastic returns from civic engagement activities during high school are not gender-neutral.

The interaction terms between race/ethnicity and civic engagement are also revealing. Community service conducted for classes did not differently affect the progress made by minority versus non-Hispanic white students of the same gender in any of the academic disciplines. In fact, with few exceptions, civic engagement activities beyond service-learning had statistically similar effects on high school academic progress across race/ethnic groups. The exceptions include, relative to non-Hispanic whites, the greater mathematics advancements by male and female African Americans, and the greater history progress made by Asian males, associated with strictly voluntary community service; the greater science progress made by Hispanic females (and lower science progress made by Hispanic males) achieved by those participating in student government; and the lower progress made by Hispanic males and females (and the greater progress made by African American and Asian males) in history when involuntarily engaged in community service for reasons other than coursework.

Still, when considering that these analyses compare four race/ethnic populations in four different subject areas, these few exceptions do not unambiguously indicate that the relationship between civic engagement and academic development favors one race/ethnic group over another. As such, high school coursework that includes a service-learning component does not appear to give a particular ethnic group a scholastic advantage over another, although there might be one for males over females.

Table 4 further shows that African Americans made smaller advances in all four disciplines than non-Hispanic whites during high school, ceteris paribus. Female Hispanics also fell behind their non-Hispanic white counterparts in three of the four subjects (the exception being mathematics) four years after the eighth grade. Hispanic males, and Asians, did not gain or lose ground in high school compared to non-Hispanic whites, except for Hispanic males making lower science progress, and Asian males making greater mathematics progress during this time.

Perhaps the positive effect that civic engagement has on scholastic progress stems from differences in underlying motivation that are not necessarily captured in the 1988 exam scores and academic ranking. Recall from above that civic engagement participation rates are higher among students planning to go to college. These same students might study more during high

school to secure admittance into their college/ university of choice. Yet, when including a control variable for college ambitions in Equation (1), or when excluding from the sample altogether students who do not expect to graduate from college, overall the same basic results observed in Table 4 continue to hold. For example, when controlling for college-graduation-expectations, the re-estimated coefficients (standard errors) on class-required community service and strictly voluntary community service for reading progress are 0.044 (0.012) and 0.051 (0.008) for females, and 0.085 (0.016) and 0.089 (0.014) for males. For mathematics, controlling for college plans yields the coefficients (standard errors) on these variables of 0.043 (0.010) and 0.044 (0.007) for females, and 0.046 (0.012) and 0.058 (0.008) for males.[8]

College Graduation Propensities and High School Civic Engagement. A key benefit from the NELS dataset is that it has been around long enough to observe post-high-school socioeconomic outcomes. In light of the increasing returns to education in the U.S. (e.g., Welch 1999), and in light of the low college graduation rates of Hispanics and African Americans, insight into factors influencing educational attainment is of growing importance.

To analyze whether civic engagement differently relates to educational attainment across race/ethnicity and gender lines, we use the 1988-2000 NELS panel to estimate a logit model for the acquisition of a four-year college degree by 2000. Consider:

(2) College Graduate$_{2000}$ = f (Civic Engagement$_{88\text{-}92}$, Ethnicity, Ethnicity x Civic, Household$_{88}$, Academic rank$_{88}$, Personal, School$_{88}$),

where College Graduate represents a binary variable equal to one if the individual had completed a four-year college degree or higher by 2000 (and equals zero otherwise); the remaining terms are the same as in Equation (1). Because we wish to distinguish between voluntary and involuntary community service, this analysis focuses only on individuals in the 1988-2000 NELS panel who had been in school at the time of the 1992 survey.

The first two columns in Table 5 provide the marginal effects from estimating Equation (2) for women and men. Note that, similar to our findings in the first part of this study (Dávila and Mora 2007), civic engagement activities undertaken during high school are related to significantly higher odds that individuals graduate from college in later years, when holding constant a host of socioeconomic and demographic characteristics. For example, being involved in community service to fulfill class-requirements significantly enhanced the odds of college graduation by 18 percentage points for women and 29 percentage points for men. Student government participation during high school also enhanced these odds, by 19 percentage points for females, and 11 for males. As with the scholastic progress results above, student government had a stronger effect on the college graduation propensities of females, while course-required community service had a stronger effect for males than females. Of interest, such service appears to have a stronger effect than strictly voluntary community service among males.

Table 5: Selected Marginal Effects from the Logit Regression on College Graduation by 2000
[Dependent Variable = 1 if Individual Had a Four-Year College Degree; = 0 Otherwise]

	Individuals Who Were Enrolled in School in 1992		Individuals Who Aspired to Graduate from College in 1988 and Who Were in School in 1992	
Characteristic	Females	Males	Females	Males
Performed community service for class	0.180*** (0.042)	0.293*** (0.053)	0.190*** (0.030)	0.278*** (0.054)
Required com. service, but not for class	0.225*** (0.065)	0.184*** (0.056)	0.277*** (0.064)	0.145** (0.070)
Strictly voluntary community service	0.202*** (0.024)	0.186*** (0.025)	0.190*** (0.030)	0.205*** (0.032)
High school student government	0.190*** (0.028)	0.110*** (0.031)	0.175*** (0.031)	0.111*** (0.039)
Af. Am. *x* class-req. community service	0.114 (0.142)	0.339** (0.173)	0.215* (0.129)	0.257 (0.165)
Af. Am. *x* non-class req. community serv.	0.006 (0.164)	-0.049 (0.137)	0.214 (0.158)	-0.161 (0.186)
Af. Am. *x* strictly voluntary serv.	0.038 (0.093)	0.347*** (0.120)	0.214** (0.086)	0.267** (0.121)
African Amer. *x* student government	0.198 (0.131)	0.007 (0.100)	-0.005 (0.086)	-0.064 (0.127)
Hisp. *x* class-req. community service	-0.126*** (0.058)	-0.051 (0.086)	-0.186* (0.097)	-0.092 (0.129)
Hisp. *x* non-class req. community serv.	-0.077 (0.094)	-0.023 (0.107)	-0.108 (0.152)	0.027 (0.182)
Hisp. *x* strictly voluntary service	-0.087* (0.053)	0.067 (0.078)	-0.086 (0.094)	0.103 (0.112)
Hispanic *x* student government	-0.008 (0.072)	-0.011 (0.089)	0.002 (0.105)	0.003 (0.138)
Asian *x* class-req. community service	0.042 (0.053)	0.115 (0.244)	0.102 (0.190)	0.130 (0.258)
Asian *x* non-class req. community serv.	-0.083 (0.209)	-0.064 (0.094)	-0.325*** (0.120)	-0.118 (0.138)
Asian *x* strictly voluntary service	-0.043 (0.103)	0.148 (0.094)	-0.115 (0.127)	0.181* (0.107)
Asian *x* student government	-0.160*** (0.053)	-0.154** (0.038)	-0.229** (0.091)	-0.245*** (0.069)
African American	-0.094** (0.043)	-0.126*** (0.035)	-0.225*** (0.055)	-0.135** (0.064)
Hispanic	-0.094*** (0.035)	-0.049 (0.046)	-0.159*** (0.058)	-0.076 (0.080)
Asian	0.011 (0.070)	0.062 (0.057)	0.033 (0.085)	0.068 (0.082)
Pseudo R^2:	.273	.268	.225	.214
N:	5,286	4,610	3,709	3,097

Table 5 Notes

***, **, * Statistically significant at the one, five, or ten percent level.

Notes: The parentheses contain robust standard errors. These results employ the appropriate NELS-provided sampling weights. Other variables in the logit regressions include participation in eighth-grade student government, low academic ranking in the eighth-grade, personal characteristics (foreign-born and U.S.-born of foreign-born parents), household characteristics in 1988 (family income, parents' highest education level, parents' marital status), school characteristics in 1988 (percent of students receiving free lunch, location in urban/suburban/rural area, and geographic region), and binary variables for missing information for family income and the percent of students in the 1988 school receiving a free lunch. Only non-Hispanic whites, African Americans, Hispanics, and Asians in the 1988-2000 NELS panel who had non-missing information on participation in community service in 1992, and who were still enrolled in school in 1992 are included in the samples.

Table 5 further suggests that African American males benefited more from either course-mandated community service, or service undertaken on a strictly voluntary basis, than their non-Hispanic white counterparts in terms of college graduation propensities. However, this benefit appears specific to males: civically-engaged African American female high school students were not more or less likely to graduate from college than otherwise similar non-Hispanic white females. Moreover, community service performed for high school classes or on a voluntary basis had a significantly smaller effect on the likelihood that Hispanic females acquired a bachelors degree; course-required community service increased the odds that Hispanic females would graduate from college by less than six percentage points (= 18.0 – 12.6). The relationship between high school student government and college-degree attainment was also weaker for Asian students, as seen in the negative and statistically significant Asian x student government coefficients.

Note that Hispanic males had similar college graduation propensities as non-Hispanic whites, ceteris paribus, suggesting that their lower college graduation rates observed in Table 3 above can be explained by differences in observable characteristics. Yet, Hispanic females and African Americans were significantly less likely to acquire college degrees relative to non-Hispanic whites, despite holding constant an array of socioeconomic factors (including initial household income and poor scholastic performance in the eighth grade). As seen in Table 5, the likelihood of completing a bachelors degree was over nine percentage points lower for Hispanic and African American females than otherwise similar non-Hispanic white females, and nearly 13 percentage points lower for African American males than non-Hispanic white males.

One possible explanation for the low educational attainment of Hispanic females and African Americans is that they had lower educational aspirations initially; recall from Table 1 that a lower share of Hispanic and African American eighth-graders than non-Hispanic whites expected to graduate from college. For insight, we re-estimate Equation (2) only for those students who had planned to finish college; the last two columns in Table 5 provide these regression results. Hispanic females and African Americans who expected to graduate from college 12 years prior also had significantly lower college graduation propensities than non-Hispanic whites, ceteris paribus. Educational aspirations formed before high school therefore do not fully explain the relatively low representation of college graduates among these groups. Future research should explore this issue in more detail.

When considering how civic engagement affected the educational attainment of young adults who had planned to graduate from college in the eighth grade, note that such activities continue to have positive and statistically significant effects overall. For African Americans, however, community service performed for a high school class is no longer statistically different than for non-Hispanic white males, but it become significant for females.

In sum, the results in Table 5 indicate a positive relationship between high school civic engagement and college graduation. As we noted in the first part of this study (Dávila and Mora 2007), many studies observe a positive relationship between civic activities and education, but they generally assume that the direction of causation stems from education. Our analyses suggest that the opposite might (also) be the case: civically-engaged teenagers seemingly acquire higher levels of education on the average than their otherwise similar peers as they get older. Moreover, in some cases the effects of community service performed during high school on finishing college several years later are stronger for African Americans and weaker for Hispanic females. With regards to the college graduation rates of Asians, the effects of student government participation are also weaker than for non-Hispanic whites.

CONCLUDING REMARKS

We set out to determine whether (1) differences exist in civic-engagement patterns across gender and race/ethnicity and (2) civic-engagement matters for these groups with regards to scholastic progress. Using NELS panel data,

we show that female high school students tend to be more civically engaged than males in the same race/ethnic group. Also, Asian students have the highest participation rates in civic activities out of the four race/ethnic groups considered here (non-Hispanic whites, African Americans, Hispanics, and Asians), while Hispanics tend to be the least involved in civic activities. Consistent with our conceptual framework, differences in educational aspirations, underlying preferences, and participation in extracurricular events seemingly explain a large part of these inter-ethnic and inter-gender gaps in civic engagement participation. One important conceptual point to make is that these findings are more supportive of the broader social capital definition that includes both cultural and structural variables to explain changes in civic-engagement patterns across groups.

An important policy point can also be made. While richer data and empirical methods are needed to provide more confidence to the notion that structural forces seem to also be important in explaining these differences in civic-engagement patterns, the general evidence presented here points to promoting civic engagement by reducing the opportunity costs of these activities, such as involving students in complementary activities (e.g., service-learning components or even in sports), and by providing financial or time-saving incentives to students who spend an above-average time in substitute activities (work).

Of course, this policy prescription would be more attractive if civic engagement matters to academic achievement. We present evidence here that it does, although more so for some groups than others. Indeed, our results suggest that, when controlling for a host of socioeconomic characteristics, community service activities required for classes have slightly larger effects on the academic progress of males versus females, but similar effects across race/ethnicity. Moreover, performing community service during high school significantly enhances the odds of subsequent college graduation overall, although less so for Hispanic females than their non-Hispanic peers. It follows that policies designed to promote civic activities might not have an "across the board" effect in terms the subsequent scholastic outcomes among different race/ethnic and gender populations. However, it is also worth noting that civic engagement targets could conceivably be designed to reduce social and human capital differentials among different demographic groups.

NOTES

1. For example, in a recent study on young adults, López et al. (2006) find that African Americans tend to be more politically engaged, and Asian Americans, more civically engaged in general, than non-Hispanic whites. Hispanics, in contrast, have the lowest civic engagement rates of the race/ethnic populations studied.
2. Male and female Hispanics have the lowest community-service participation rates of the groups shown when focusing on the 1992 measure; however, the 1990-92 voluntary and involuntary service measures suggest that African American males are the least engaged. This difference can be explained by the fact that the 1992 service measure includes high school dropouts, but the voluntary/involuntary measures do not because such information was not asked of the dropouts. A closer perusal of our data reveals that African American males had the highest community-service participation rates in 1992 among the high school dropouts. Indeed, 22.9 percent of African American dropouts were performing community service in 1992, followed by 21.8 percent of Asian males, and 15 percent of African American females. Female Hispanic dropouts were the least involved in community volunteer work, at 6.8 percent. The issue of why community service activities vary between high school students and dropouts along demographic lines goes beyond the scope of this study, but it warrants future investigation.
3. A perusal of the data indicates that students planning to graduate from college were significantly more likely to participate in civic activities. For example, 16.5 percent of students who did not expect to graduate from college performed non-school-sponsored community service in 1992, compared to 30.8 percent of the college-graduate hopefuls. An F-test reveals that this difference is statistically significant at the one-percent level.
4. The data provide surface support for this claim. 24.5 percent of students who were not involved in sports in the 1991-92 school year performed non-school-sponsored community service that year, compared to 32.5 percent of those in sports. 29.4 percent of students who did not work more than 20 hours per week at some point during the 1991-92 school year were involved in community service that year, compared to 19.9 percent of the students who worked more than 20 hours per week. These differences are statistically significant at the one-percent level.
5. Additional support for this claim is found when estimating logit regressions by gender using the 1992 community service measure as the binary dependent variable, and race/ethnicity, college aspirations, perceptions that it is "not important" to help others in the community, participation in sports, working more than 20 hours per week, family income, parents' education, being foreign-born, or being U.S.-born of foreign-born parents as the right-hand side variables. Among male and female teenagers, the results (not shown to conserve space) indicate that both Hispanics and Asians do not significantly differ from non-Hispanic whites with respect to participating in community service in 1992 when controlling for these other variables, while the odds of community service participation were higher (by six percentage points) for African American females than for non-Hispanic white females. When using the voluntary community service measure from 1990-92 for students still in school, however, Hispanic females and African American males and females were significantly less likely than otherwise similar non-Hispanic whites and Asians to be civically engaged. Regardless of the dependent variable, however, college aspirations, perceptions, participation in sports, and working more than 20 hours per week all significantly affected the likelihood of community service activities in 1992 as expected. Having parents with a college education also enhanced the odds that teenagers performed volunteer work in the community, indicating an intergenerational relationship between civic engagement and education. Future research should continue unpacking the socioeconomic and demographic characteristics related to civic participation among high school students.
6. Further evidence that immigrant high school students have similar civic engagement participation

rates as their U.S.-born peers was uncovered in the logit regressions for community service discussed in Note 5. Indeed, regardless of the service measure used as the dependent variable, the coefficients on the immigrant variable were not statistically significant for either females or males.

7. It should be noted that this sample only includes those immigrants who arrived to the U.S. before starting high school; it remains unclear whether the international migration among older students affects their civic activities. Moreover, some students had been excluded from the base-year (1988) questionnaire of the NELS because of mental or physical disabilities or the lack of English-language fluency, leading to potential undercoverage biases when focusing on populations born in non-English-speaking countries (see Owings et al. 1994 for more information). Future research should continue to explore the civic engagement activities of immigrant youths in the U.S.

8. Similarly, when excluding from the sample students who do not expect to graduate from high school from the sample altogether (presumably the less motivated students), the positive and statistically significant effects of class-required community service and voluntary community service continue to hold. For example, the re-estimated coefficients (standard errors) on these two variables for females equal 0.050 (0.013) and 0.050 (0.008) for reading progress and 0.042 (0.010) and 0.040 (0.008) for mathematics progress, and for males, 0.087 (0.018) and 0.080 (0.016) for reading and 0.045 (0.012) and 0.049 (0.008) for mathematics. It should be noted, however, that when exclusively focusing on students who do not expect to graduate from college, the results for class-required community service are, in some cases, not statistically significant.

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APPENDIX: Definitions of the Variables

Variable	Construction
Engaged in community service in 1992	= 1 if individual spent time on volunteer or community service in 1992 that was not sponsored by the school; = 0 otherwise [Questions: F2S33E and F2D35E]
Community service 1990-92 required for class	= 1 if student in 1992 survey had performed any unpaid volunteer or community service that was required for class work since January 1, 1990; = 0 otherwise [Question: F2S38C]
Community service 1990-92 required for reason other than class	= 1 if student in 1992 survey had performed any unpaid volunteer or community service that was court ordered or required for reasons other than class since January 1, 1990, and community service required for class = 0; = 0 otherwise [Questions: F2S38B and F2S38D]
Community service 1990-92 strictly voluntary	= 1 if student in 1992 survey had performed any unpaid volunteer or community service since January 1, 1990, and community service required for class = 0 and com. service required for other reasons = 0; = 0 otherwise [Questions: F2S38A – F2S38E]
Participated in high school student government	= 1 if participated in student government as a member or officer "this school year" for students in school in the 1990 survey, or if participated in leadership groups such as government when student was "in school" for the school dropouts in 1990, or if participated in student government or served as an officer/leader "this school year" for students in school in the 1992 survey; = 0 otherwise [Questions: F1S41BC, F1D21D , and F2S30BC]
Participated in sports, 1991-92 school year	= 1 if participated in a team sport or individual sport (junior varsity, varsity, or as captain/co-captain) in the 1992 student survey; = 0 otherwise [Questions: F2S30AA and F2S30AB]
Worked 21+ hours per week, 1991-92 school year	= 1 if individual usually worked 21 or more hours per week at current or more recent job during 1991-92 school year, as asked in the 1992 student survey; = 0 otherwise [Question: F2S88]
Aspired to graduate from college in 1988	= 1 if student reported that he or she planned to graduate from college (or higher) in 1988; = 0 otherwise [Question: BYPSEPLN]
Participated in eighth- grade student government	= 1 if individual participated as a member or officer in student council in the 8th grade; = 0 otherwise [Question: BYS82R]
IRT Scores	= Item Response Theory (IRT) exam score provided by NELS:88. Reading IRT: 21 questions, 21 minutes (contextual understanding of words & interpreting/evaluating authors' perspectives in short reading passages); Mathematics IRT: 40 questions, 30 minutes (word problems, graphs, equations, quantitative comparisons, & geometric figures); History IRT: 30 questions, 14 minutes (political/economic history, citizenship, & geography); Science IRT: 25 questions in 20 minutes (life, earth, & physical sciences). See Owings et al. (1994, pp. 47-49) for more information.
Dropped out of school between 1988-92	= 1 if individual had dropped out of school by the 1992 survey; = 0 otherwise [Question: F2DOSTAT].
Attained a four-year college degree by 2000	= 1 if highest post-secondary education degree was a bachelor's degree or higher in 2000; = 0 otherwise [Question: F4HHDG]
Low academic standing in eighth grade	= 1 if individual scored in the lowest quartile for all of the four IRT exams in 1988; = 0 otherwise [Questions: BY2XRQ, BY2XMQ, BY2XSQ, BY2XHQ]
Parents' highest education level in 1988	Based on categories provided in Question BYPARED
Household income in 1988	= 0 if family income = "none" or missing; = $200,000 if family income = top code of "$200,000 or more"; and = midpoint of the range in the other 13 family income categories (e.g., = $22,500 if family income = "$20,000 - $24,999") [Question BYFAMINC]

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